Food and Agriculture Organization
of the United Nations

AGRICULTURAL EXTENSION IN TRANSITION WORLDWIDE

POLICIES AND STRATEGIES FOR REFORM

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CONTENTS

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ACRONYMS

AAB	Agriculture As a Business
AFAAS	African Forum for Agricultural Advisory Services
AFD	Agence Française de Développement (France)
ANCAR	National Agency for Agricultural and Rural Advisory Services (Senegal)
ASDS	Agricultural Sector Development Strategy 2010-2012 (Kenya)
AIS	Agricultural Innovation System
AKIS	Agricultural Knowledge and Information System
AR4D	Agricultural Research for Development
ASPRODEP	Association Sénégalaise pour la Promotion du Développement par la Base (Senegalese Association for the Promotion of Development at the Grassroots)
ATI	Agricultural Training Institute (The Philippines)
ATMA	Agricultural Technology Management Agency (India)
CAR	Conseil agricole rural (rural advisory service providers)
CBO	Community-based organization
CD	Capacity Development
CDAIS	Capacity Development for Agricultural Innovation Systems
CEAPRED	Center for Environmental and Agricultural Policy Research, Extension and Development (NGO; Nepal)
CLCOP	Local Consultation Framework of Producer Organizations (Senegal)
COLACTEOS	Narino Dairy Products Cooperative (Colombia)
CoP	Community of practice
DAE	Department of Agricultural Extension (Bangladesh)
DGD	Direction générale Coopération au développement et Aide humanitaire (Directorate-General for Development Cooperation and Humanitarian Aid, Belgium)
DIPWG	Dairy Innovation Policy Working Group
DLS	Department of Livestock Services (Bangladesh)
DOF	Department of Fisheries (Bangladesh)
EAFF	Eastern African Farmers' Federation
EAS	Extension and Advisory Services
EWB	Engineers Without Borders (Ghana)
FAO	Food and Agriculture Organization of the United Nations
FARA	Forum for Agricultural Research in Africa
FBO	Farmer-based organization
FFS	Farmer Field School
FIAS	Foundation for Agricultural Innovation (Chile)
FIG	Farmer Interest Group (ATMA, India)
FMC	Fund Management Committee
GDP	Gross domestic product
GFRAS	Global Forum for Agricultural Advisory Services
GO	Government organization
GPS	Global Positioning System
ICPM	integrated-crop and pest management
ICTs	Information and Communication Technologies
IDE	International Development Enterprise (NGO; Nepal)
IFAD	International Fund for Agricultural Development
INDAP	Institute of Agricultural and Livestock Development (El Instituto de Desarrollo Agropecuario, Chile)
INTA	National Institute for Agriculture Innovation and Technology Transfer (Costa Rica)
IPR	intellectual property rights
ISO	International Organization for Standardization
ITC	Indian Tobacco Corporation (India)
LISF	Local Innovation Support Fund
M&E	Monitoring and evaluation
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries (Uganda)
MAPs	Medical and aromatic plants (ATMA, India)
MIS	Marketing Information Services
MOAAS	Market-oriented Agricultural Advisory Services
MPC	Marketing and Planning Committee (Nepal)

MSSRF	M.S. Swaminathan Research Foundation (India)
MTFSP	Microfinance and Technical Support Project
MVIWATA	Mtandao wa Vikundi vya Wakulima Tanzania (a national producer organization)
NAADS	National Agricultural Advisory Services (Uganda)
NAEP	National Agricultural Extension Policy (Kenya)
NAEP	New Agricultural Extension Policy (Bangladesh)
NAES	National Agricultural Extension Strategy (Uganda)
NARS	National Agricultural Research System
NGO	Non-governmental organization
NRM	Natural Resource Management
OECD	Organisation for Economic Co-operation and Development
PLATICAR	Plataforma de Tecnología, Información y Comunicación Agropecuaria y Rural (Costa Rica)
PMCA	Participatory Market Chain Analysis (Nepal))
PMCA	Participatory Market Chain Approach (Nepal)
PO	Producers' organization
PSAOP	Agricultural Services and Farmer Organizations Support Programme (Senegal)
RAAIS	Rapid Appraisal of Agricultural Innovation Systems
RAS	Rural Advisory Services
RBM	Result-based Management
RIU	Research Into Use programme
SDC	Swiss Agency for Development and Cooperation
SDG	Sustainable Development Goal
SNV	Netherlands Development Organization
SP	Service Provider
SRA	Strategy for Revitalizing Agriculture (Kenya)
TAP	Tropical Agriculture Platform (hosted by FAO)
TECA	Technologies and Practices for Small Agricultural Producers
VKC	Village Knowledge Centre (India)
VVC	Video viewing club
WB	World Bank

PURPOSE OF THE MODULES

The purposes of the modules are to review the major reforms being considered internationally – reforms that aim to change the policy and institutional structure and operations of public sector agricultural extension systems, and thus enhance a transition to better coordinated pluralistic, demand-led advisory systems. The advantages and disadvantages of each aspect of these reforms are examined and illustrated by the selected case studies. The modules provide a foundation for extension reform affecting the entire set-up and mode of operation of agricultural extension.

This review of reforms is intended to provide insights for senior-level officials and others interested in the development of agricultural advisory systems. The modules review trends, concepts and experiences, and, as such, are not intended to be prescriptive, or to adhere necessarily to any one point of view, but instead to provide a basis for informed decision-making by government policy-makers and senior management of extension and advisory services, as well as agricultural advisors.

OVERVIEW OF MODULES

Each reform is presented for separate analysis, but, needless to say, the reforms are often interconnected and their goals may even overlap, such as reforms regarding pluralistic service provision and the role of the public sector. In short, the reforms are presented as separate modules for the purpose of pursuing in-depth discussion of the reform, and to consider its advantages, disadvantages, and the lessons learned in each case.

MODULE 1 – Trends in Extension Reform

The first module provides background to the global evolution, overall trends and drivers that have, and are changing the shape and purpose of not only formerly predominantly public extension systems in their transition to pluralistic rural advisory systems with a much broader mandate, but also to more specialized services. It outlines the increasing role of farmers and their organizations, innovative financing mechanisms, use of digital solutions, etc., and the need for country-specific solutions reflecting the challenges to be addressed and the institutional setting needed to respond to them.

MODULE 2 – Pluralistic Service Systems

Module 2 shows the need for and evolution towards pluralistic service systems. Multi-stakeholder governance and coordination are crucial to succeed in responding to the needs and demands of increasingly diverse smallholder farms and their advisory needs (business services, climate change, ICTs, etc.). Other issues enabling and promoting the performance of pluralistic service systems and demand orientation of good quality services (accountability, innovative financing mechanisms, farmer empowerment, etc.) are also discussed.

MODULE 3 – Demand-Driven Rural Advisory Systems and Services

The third module highlights the shift towards demand-led advisory services to make services more relevant and effective. This shift requires different mind sets, organizational and financing procedures, skills and competences on both the demand and the supply side of services. It puts emphasis on putting farmers and their organizations at the centre of the advisory systems and outlines the processes for the identification, expression and formulation of demand for services by them. It concludes that capacity development for empowering producers' organizations is an indispensable part of demand-led advisory services and systems.

MODULE 4 – Linking Farmers to Markets

Module 4 covers the importance of linking farmers to markets, and integrating them into value chains. It requires a shift from increasing production alone to enhancing income and rural employment, thus contributing to improved, sustainable livelihood and increased food security. Staying in tune with changing market requirements and standards is crucial for RAS and farmers. RAS providers also require enhanced skills in facilitating and brokering relationships with actors along the value chains (producers' organizations, agri-business, public and private sector entities, and NGOs).

MODULE 5 – Financing mechanisms for pluralistic demand-led RAS systems

This module outlines the need for innovative financing mechanisms required to achieve pluralistic and demand-led RAS systems. It examines various options for diversified financing, their advantages and disadvantages, and how they are linked to service provision by public and private RAS providers, with empowerment of farmers and their organizations. It also reviews various cost-recovery strategies for financing RAS. Financial contributions by users (co-financing mechanisms) are fundamental for accountability and ownership. Monitoring of financing mechanisms is needed for enhancing quality of implementation and measuring their impact.

MODULE 6 – Role of public actors in RAS governance and service provision

Module 6 emphasizes the changing role of public actors in governing and enhancing pluralistic advisory systems and in (co-)coordinating a multi-purpose range of institutions. Multi-stakeholder governance and collaboration are crucial to achieve a well-performing, pluralistic and demand-led advisory system. The policy, regulatory, financing and monitoring roles ensure that services are of good quality, relevant and accessible for the small-scale farmers. The module also reviews the institutional arrangements such as the level of decentralization or privatization in public RAS systems and links to pluralism of RAS.

MODULE 7 – ICTs in Rural Advisory Systems and Services

Module 7 highlights the fast-growing importance and main functions of ICTs in RAS systems and services, and looks at the experience so far of using ICT in agriculture and rural development. The use of ICT by itself requires organizations to adjust the way they are set up, managed and organized. Institutionalizing the use of ICTs in RAS or producer organizations needs therefore investment, training and behavioural change. The module also assesses the limitations of ICTs and the need for complementary support and services to utilize the full potential of ICTs and to ensure that smallholders benefit from these technologies.

MODULE 8 – Role of producer organizations in rural advisory systems and services

Here the focus is on the importance of producer organizations (POs) in RAS, with discussion of the roles of POs in RAS governance and in the provision of advisory services. Other roles of POs include acting as multipliers in knowledge sharing and dissemination, bridging local agricultural knowledge and technical research expertise, and as a main partner in the agriculture innovation system. The module outlines the capacity development needs for POs in order to fulfil their roles in RAS, as well as the reciprocal role for RAS in strengthening POs.

MODULE 9 – Gender-sensitive Rural Advisory Systems and Services

Module 9 stresses enhancement of gender aspects in all elements of agricultural and rural development and related advisory services. On the one hand, regarding the consideration of gender in advisory services, and on the other hand, the mainstreaming of gender in rural advisory systems and service institutions (staffing, career development, working conditions, culture, etc.). The module also assesses the options and comprehensive efforts needed to close the gender gap in productivity and access to resources and services, as well as the institutional strengthening needed to mainstream gender.

MODULE 10 – Extension and advisory approaches and methods

The tenth module emphasizes the various purposes, objectives and situations that require different approaches and methods for advisory services. The diversity of RAS approaches and methods are outlined. Guidance and principles are provided on how to choose the most appropriate RAS approaches and methods in a given situation and to match them with purposes and objectives. The module also describes a systematic process for selecting the advisory approaches and methods. It then discusses the factors contributing to success, and highlights key challenges faced in implementing them, such as institutionalizing and scaling up.

MODULE 11 – Managing RAS systems and organizations

Module 11 looks at the change required for managing pluralistic RAS systems and their organizations, given the challenges ahead in a fast-changing world. It shows the need for result-based management in RAS to achieve improved performance, with the need for change management in order to adapt to changing circumstances. The module provides an understanding of how to manage change in organizations and the associated leadership challenges. It also highlights capacity development needs related to an innovative, forward looking management of a RAS which has to operate in a complex and challenging environment.

MODULE 12 – RAS in Agricultural Innovation Systems

The final module urges the need for capacities to innovate, and for multi-stakeholder collaboration for innovation, outlining the conceptual framework of an Agricultural Innovation Systems (AIS). It examines the broadened role and mandate of RAS in the wider AIS, looking at the experiences made in AIS in order to draw lessons learned for extension reform. The module then outlines the challenges that still need to be addressed, e.g. in modifying institutional arrangements to enhance innovation; monitoring and evaluation; and lesson learning when applying the AIS framework.

ORGANIZATION OF THE MODULES

Each module is structured in the following way:

- OBJECTIVES
- INTRODUCTION
- DEFINITION
- DISCUSSION
- CASE STUDIES
- SUMMARY
- TOOLS
- REFERENCES
- EXERCISES

Thus, each module begins with the objectives, followed by a brief introduction to the specific reform measure. Thereafter, main definitions of terms and concepts of the module are provided. The main section is the discussion part, which outlines the topic, assesses experiences and draws lessons learned and conclusions. Case studies then illustrate concrete examples from experiences in various countries worldwide. This is then followed by a summary of main points.

As an annex, tools are provided, which could be adapted in other contexts. A list of references for further study is also provided. Exercises are then presented at the end of the module in the form of questions to stimulate reflection on the various reform measures, particularly with respect to the country and context of the reader. Importantly, the contents and tools in each module need to be contextualized to the various agricultural, socio-economic, political, institutional and governance situations of the specific country or region of the participant.

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MODULE 1: Trends in extension reform

By Blum, M.L., Sulaiman, V.R. and Cofini, F.

OBJECTIVES

1. to examine the global overall trends in extension and advisory services; and
2. to understand the drivers for change which affect extension and advisory systems.

INTRODUCTION

Several changes in thinking about development had occurred during the 80's and 90's. An ideological shift toward privatization had gained prominence. The political economy of the developing world, mainly Sub Saharian Africa was dominated in those decades by the adoption of economic structural adjustment reforms and the emergence of pressures for the democratization of the political process. Donors have been advising governments to take measures towards cost-recovery, outsourcing and partial or full privatization of agricultural extension services. Onslaught of conservative ideology emphasizing efficiencies over welfare (Rivera,1996) and implementation of structural adjustment programmes leading to reduction of government spending in Africa (Opio-Odong, 2000; Nahdy, 2004) and Latin America (World Bank, 2006) also enhanced the move towards privatization of extension services. Political liberalization was demanded by a "anti-authoritarian, anti-statist, non-governmental organizations" civil society reacting to those economic measures.

Governance had become a primary concern. International organizations began to promote two strategies at one and the same time, participatory trends towards democratization and decentralization and commercial attitudes toward agriculture as a business agropreneurship. Since the 90s, the advisory landscape has become more pluralistic with the increasing participation of the private sector (dealing with agro-inputs, agribusiness, and financial services), non-governmental organizations (international as well as local); producer groups, cooperatives and associations; consultants (independent and those associated with or employed by agri-business/producer associations) and ICT based services. Since 2000, the producer organizations became stronger in establishing their own services for its members. The World Bank supported this trend in several programmes.

Along with this there is an increasing realization that rural advisory service (RAS) providers need to take up new roles and capabilities to respond effectively to the new challenges in agricultural development such as declining water availability, increasing soil degradation, changing and uncertain climate and markets and the rapid spread of new Information and Communication Technologies (ICTs). This module provides an overview of the overall trends in RAS and the factors that forced extension to broaden its mandate, embrace pluralism, experiment with different funding/financing and delivery modes and reconsider some of its underlying assumptions and operational paradigms.

DEFINITIONS

Extension and RAS

Rural Advisory Services (RAS) refers to all the different activities that provide information and advisory services needed and demanded by farmers and other actors in agro-food systems and rural development. These include technical, organizational, business and management skills and practices, which improve rural livelihoods and well being. **Extension and advisory systems** should hence facilitate the access of farmers, their organizations and other market actors of knowledge, information and technologies; facilitate their interaction with partners in research, education, agri-business, and other relevant institutions; and assist them to develop their own technical, organizational and management skills and practices. (Christoplos, 2010).

Throughout the modules the terms Rural Advisory Services (RAS) and Extension are used. While RAS is preferably used to acknowledge the shift towards more modern advisory services (wide range of services, tailored to demand, market-oriented, participatory, etc.), the term Extension has been used when referring to traditional extension (production oriented, technology transfer, supply driven, etc.) and where specifically written in the reference source.

DISCUSSION

Overall trends in extension

Agricultural extension is in transition worldwide and under pressure to reform its purpose as well as the way it is managed. Countries have been responding to the calls for reform in various ways with mixed results. Table 1.1 provides a list of global trends on what is happening in many of the countries where reforms have occurred, or are in progress. As the course develops, the reform issues characterizing these global trends will be reviewed in the various modules.

TABLE 1.1: Global trends in extension

FROM	TO
One main public system	Pluralistic system with public and private advisory services. • Multi-stakeholder governance, collaboration and partnerships for increased synergies and impact
Standard extension models (Training and Visit model)	Systems shaped according to country specific conditions and institution. • Evolution based on policies, reforms, lessons learned / good practices, new technologies such as ICTs
Extension as public good	RAS takes care of public and private goods. • Redefinition of roles and tasks of the various service providers (public, civil society, private)
National coverage by the public sector	Multiple advisory service providers, mostly with thematic or geographic focus. • Private sector goes for markets and funding; public role to identify and address service gaps (tools/procedures needed) for disadvantaged groups.
Public research as main sources of knowledge and innovations for extension	Multiple sources of knowledge and innovations (research, local knowledge and innovations, ICTs, etc). • RAS networks or platforms (incl. virtual platforms) for knowledge management; increased access to knowledge through ICTs for RAS and for farmers
Centralized public system	Decentralized public system. • Management of RAS provision at decentralized level; role and influence of national level to be redefined (facilitation of networking, coordination, monitoring, etc.)
Focus on technology	Problem, demand and market focus. • Strategies and approaches, instruments, mechanisms, etc. responding to client demand for RAS and market demand
Focus on agricultural development	Extended mandate for agricultural and rural development. • Increased complexity of challenges; integrated multi-sector approaches
Hierarchical lines of command	Enhanced horizontal collaboration and multi-disciplinary teams. • Different and more RAS management capacities needed, Result based management and change management
Entirely public funded system	Multiple funding sources, new financing mechanisms (e.g. pull mechanisms), client participation according to their capacities Co-financing mechanisms

Source: Blum, 2006. Table revised 2017.

Drivers for change

Four major factors have contributed to the call for extension reforms. These are as follows:

- the changing nature of agriculture, its unprecedented challenges and the need to provide broader support to producers;
- increasing pluralism in advisory service delivery;
- renewed examination of the role of the state and the private sector as well as new modes of funding/financing and delivering advisory services; and
- new insights from communication and innovation research and the digital revolution.

Changing nature of agriculture

The nature of agriculture itself has been changing rapidly over the last two decades and new challenges have emerged. On the one hand, world's population is growing – to a projected 9.6 billion people in 2050 and to meet the growing food demand there is a need to increase agricultural output by at least 60 percent globally, and 100 percent in developing countries. On the other hand, declining availability of water and increasing degradation of soils have become two major issues confronting agricultural production bringing on the urgency of improving yields while managing natural resources more sustainably and in innovative way (FAO, 2014).

Though agricultural production and productivity have increased dramatically, poverty is widespread in many of the less favored agricultural regions, which have been largely bypassed by the introduction of improved technologies. There has been an increase in women's participation rates in the agricultural sector, either as self-employed or as agricultural wage workers during the last two decades. Opening of agricultural markets has further increased the vulnerability of poorer countries and small farmers, especially women farmers, who have weak bargaining power and limited political voice. Climate change, primarily due to global warming, has increased extreme and frequent weather events, heat waves, droughts and sea-level rise. Unless action is taken to make agriculture more sustainable, productive and resilient, climate change will seriously threaten all dimensions of food security (FAO, 2016).

These new challenges also mean that advisory services needs to tackle an increased diversity of objectives that not only include, but also go beyond, transferring new technology and increasing production. This encompasses the need to:

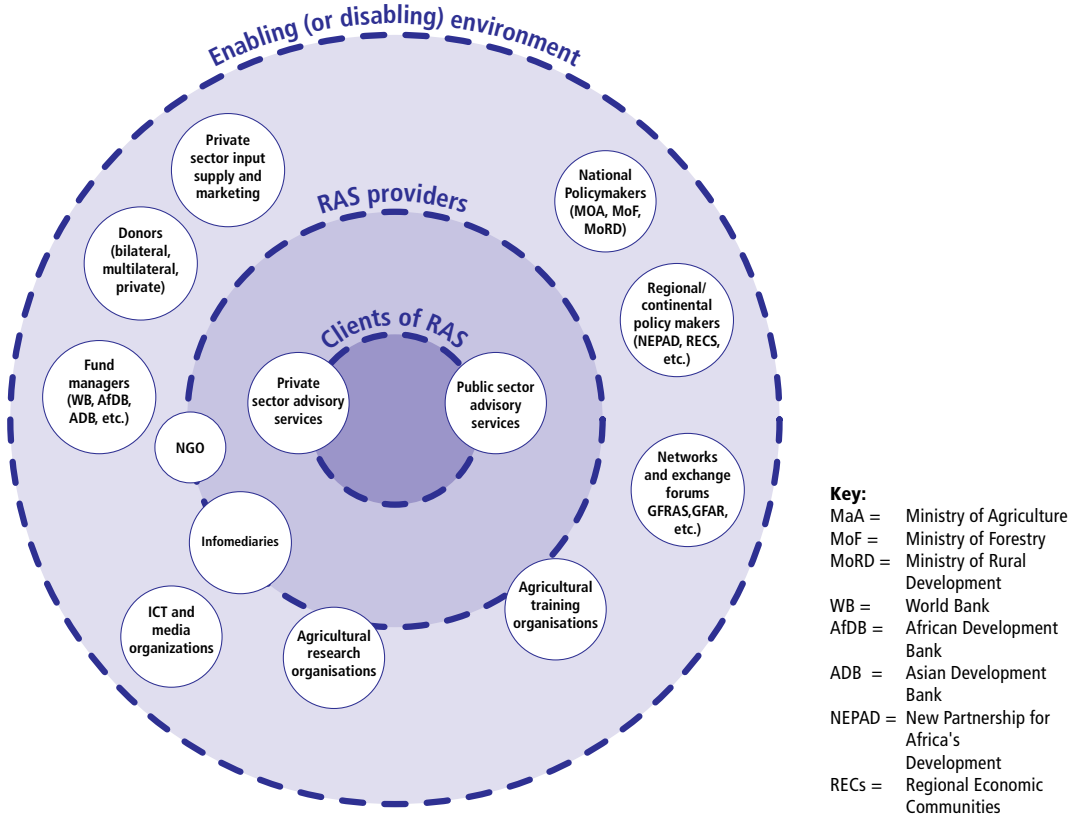
- help farmers to better understand market and support adaptation to market requirements and link farmers more effectively and responsively to domestic and international markets where globalization is increasing competition (FAO, 2016; Swanson and Rajalahti, 2009; Swanson, 2006);
- reduce the vulnerability and enhance the voice of the rural poor, for example by supporting or facilitating the creation of producer organizations (Farrington *et al.*, 2002; Berdegué and Escobar, 2001; Anderson, 2007);
- promote environmental conservation (Alex, *et al.*, 2002);
- support smallholders in adapting their production to climate change and make their livelihoods more resilient (FAO, 2016);
- view agriculture as part of a wider set of rural development processes that include enterprise development, and non-farm employment (Rivera, *et al.*, 2001); provide business development services and support agripreneurship (Wongtschowski *et al.*, 2013; FAO, 2016) appropriate to the scale, resources and capacities of each farm (Sulaiman and Blum, 2016);
- provide services relating to both input and output markets (Neuchatel Group, 2002; Sharma, ed., 2006);
- enhance the capacity development role of RAS that includes training, but also strengthening of innovation processes, building linkages between farmers and other agencies, as well as institutional and organizational development to enhance social capital and support the bargaining position of farmers. This broadly conceived notion of extension has been referred to as "extension-plus" (Sulaiman and Hall, 2003; 2004); and
- undertake facilitation, brokering and coaching of different actors to improve market access, dealing with changing patterns of risk and protecting the environment (Christoplos, 2010).

Over the last decade, there has been an increasing realization of the importance of tasks such as community mobilization, conflict management, problem solving, education and human development (van Beek, 1997), organization building, social learning and negotiation (Leeuwis and van den Ban, 2004) and the need for extension advisors to acquire social science skills to perform these tasks (van Beek, 1997; Farrington *et al.*, 1998; Sulaiman and van den Ban, 2000). Realization of these tasks is key as most of the innovations needed in present day agriculture have collective dimensions, i.e. they require new forms of interaction, organization and agreement between multiple actors. (Leeuwis and van den Ban, 2004). It is not surprising that organizations such as the Global Forum for Agricultural Advisory Service (GFRAS) have a broader vision of extension that includes three broader areas, namely, technology and information sharing; advice related to farm, organizational and business management; and facilitation and brokerage in rural development and value chains.

Increasing pluralism in service delivery

"The days when agricultural extension was synonymous with the work of public sector are over" (Christoplos, 2010). Weak public services, privatization of extension, support to non-governmental organizations (NGOs) and producer organizations (POs), etc. have provided space to non-public service providers to develop services. Though many of the ministries, departments and agencies of Governments continue to provide support, farmers depend on several other actors outside the public sector to meet their increasing demands for information and support. The number and types of such organizations supporting farmers with information, inputs and services have increased during the last three decades. Many of them are private agencies which, while not always formally identified as extension services, nevertheless provide advisory and other support services to farmers. These include: input agencies, farmers' organizations, producers' cooperatives, agro-processors, non-governmental agencies (NGOs), agri-business houses, progressive farmers, individual consultants and consultancy firms, financial institutions, and media and internet services (see Figure 1.1 below). Many of these actors are bringing varied skills and expertise that are needed for putting new knowledge into use (Sulaiman *et al.*, 2010).

FIGURE 1.1: Main RAS stakeholders



Source: Adolph, 2011.

There is an increasing realization that public extension by itself cannot meet the specific needs of various regions and different types of farms and farmers. Pluralism, despite its promotion as new concept, reflects what has been in existence for decades already. For instance, some countries like Malawi adopted a pluralistic demand-driven agricultural Extension Policy in the early 2000 and an implementation guide in 2006 and from there really made deliberate efforts to tap into the potential synergies between different service providers (Ragasa et. al. 2015; Mutimba, 2014).

An other example is the Policy Framework for Agricultural Extension (PFAE) of the Indian Ministry of Agriculture which affirms that the "policy environment will promote private and community driven extension to operate competitively, in roles that complement, supplement, work in partnerships and even substitute for public extension" (DAC, 2000). Promoting pluralism in extension service provision and management is also a key element of Kenya's National Agricultural Extension Policy Implementation Framework (NETF, 2007).

The argument for pluralism in RAS systems is also based on the premise that the private sector (whether private companies, NGOs, Rural Producer Organizations, or specialized consulting firms) can provide RAS services more

efficiently and effectively than public sector agencies, and that these advantages increase the likelihood of long-term and sustainable services. Furthermore, the transfer of funding for extension to end-users (farmers and their organizations, other actors in the value chain) provides them with greater ownership and thereby enhances demand-driven services. As RAS needs a wider range of skills to address the increasingly complex agenda, it needs to partner with the other actors who can bring these skills and expertise. "Pluralistic extension relies on changing the rules of the game and strengthening the capacity of actors to understand and take advantage of these new rules through better co-ordination and contextualization" (Christoplos, 2010).

Reforms in financing and delivery of extension

Public sector extension was severely attacked in the 1980's for not being relevant, having insufficient impact, not being adequately effective, not being efficient, and not pursuing programs that foster equity. Government responses to public scrutiny and competition from the private sector included: withdrawal from funding and partly delivery of agricultural extension, decentralization, privatization and promotion of more "demand-driven" extension arrangements.

Moreover, the roles of the private, public and non-governmental sectors began to be observed as parts of one system within a country, whose importance continues to remain central. The new era for extension took place as forces for change impelled governments to review their public sector extension systems and the funding and delivery options immediately confronting them (Swanson, 2006). Though agricultural extension services were originally designed world-wide as a publicly funded and publicly delivered service, many of them adopted different forms of financing and service provision during the last two to three decades. These were essentially implemented to reform public sector extension.

Donors have been advising governments to take measure towards cost-recovery, outsourcing and partial or full privatization of agricultural extension services. In several Latin American countries, public extension services have been abolished and alternative modalities of private RAS have been encouraged. In some cases, public services were contracted out to the private sector and NGOs on competitive basis. "In many countries, privatization (often undertaken by the mere withdrawal of funding for public sector agencies) resulted in the majority of farmers losing access altogether to impartial and independent advice. These experiences showed that creating of a level playing field for private providers is very important, but that this needs to be part of a wider reform process which promotes pluralism while recognizing the need for public financial support. Global experience has shown that appropriate roles for public agencies will differ from place to places, The "either-or" discourse on public or private service provision is therefore becoming more nuanced" (Christoplos, 2010).

Several countries have decentralized their extension activity to district, sub-district and municipality levels with delegation of responsibility to fund and control extension organization to local farmer groups. This was part of a wider initiative to decentralize governance in many countries. Though it has improved farmer control and made services more demand driven, lack of sufficient preparation on the part of extension management and the huge institutional inertia of large extension bureaucracies have considerably weakened extension (Sulaiman and Hall, 2005).

New insights from communication and innovation research

Ideas on communication and innovation regarding the extension discipline and its practice have emerged and considerably evolved during the last two-three decades. According to early communication scholars (Laswell, 1948; Schramm, 1954; Rogers, 1962) the communication process was regarded simply as the transfer of messages from a sender to a receiver. Communication theories such as the Two-step Flow (Lazarsfeld *et al.*, 1944) and the Diffusion of Innovations (Rogers, 1962) supported this top-down orientation. In this view, innovation was considered as a new technology or information developed by researchers, which had to be communicated to rural communities for eventual adoption.

Later research revealed the importance of human communication (Kinclaid, 1979), the need for dialogue (Freire, 1970) rather than linear one-way communication. In the late 1980s, the focus of the debate began to shift to horizontal communication and information exchanges rather than persuasion in the diffusion model. The potential for combining mass media, new ICTs and interpersonal communication also began to be increasingly appreciated.

The meaning of innovation and the role of communication in promoting innovation has also been evolving over the last few decades. While innovation was considered as new information or technology earlier (Rogers, 1962), during this phase of development, communication began to be considered as an outcome of interaction among stakeholders, with the role of the communicator being mainly to facilitate this process of interaction (Rolling and Wagemakers, 1998). In this kind of situation, which is termed the "co-creation of knowledge", a group of stakeholders with different and often complementary experiences or knowledge agree on ways forward to improve their shared problem (Roling, 2007). There is an increasing realization that farmers, agri-business and service providers have to innovate continuously to adapt to an ever-changing environment (including markets, climate and resources).

Currently innovation is increasingly recognized as a process by which ideas that are new to a certain location are put into practice, and in this way changing the situation of those living in this area for the better. These "ideas" can be a new way of irrigating a field (i.e. a technology), a new way of organizing women farmers to bulk their produce (i.e. an organizational innovation), or a new policy that supports smallholders in getting bank loans (i.e. an institutional innovation) (Sulaiman, 2015). This process requires interaction, exchange and knowledge flows among multiple actors such as farmers, NGOs, service providers, traders, agro-dealers, researchers, policy makers. (Hall *et al.*, 2001; 2009) and results in social and economic change. Communication can play a major role in supporting the three essential processes relevant to innovation: network building, supporting social learning and dealing with dynamics of power and conflict (Leeuwis, 2004).

The role of the communicator has shifted from that of a disseminator of information initially to that of a facilitator of interaction subsequently and, more recently, as a broker (Klerkx and Leeuwis, 2008) or an agent playing a wider range of intermediation tasks at a range of interfaces situated within (and between) networks of stakeholders operating in different societal spheres (Leeuwis and Hall, 2010). Hence, the role of innovation broker emerged and with this RAS has broaden from being an intermediary solely between science and practice to include a wider range of intermediary roles, such as mediation, knowledge brokering, facilitation of exchange, demand articulation, visioning, etc. in a multi-actor innovation system (Klerkx and Gildemacher, 2012).

In the development sector, extension agencies have traditionally used some of these communication strategies, including advisory communication, organizing horizontal exchange in support of diffusion, persuasive mass media campaigns, awareness raising, training, information provision, etc. New evidence indicates that these classic strategies need to be accompanied by other communication strategies and services for innovation to take place (Leeuwis, 2004; Klerkx and Leeuwis, 2009). These other strategies and services include: network brokerage, demand articulation and knowledge brokerage, visioning, process facilitation, interactive design and experimentation, learning-oriented monitoring, exploration of opportunities and constraints, lobby advocacy communication and conflict management.

All these communications tasks are important for innovation management, which is currently understood to be more about connecting the different actors relevant for innovation and helping coordinate coherent action. Sulaiman *et al.* (2010) have identified the following set of functions and actions as critical for innovation management (See Figure 1.2).

FIGURE 1.2: Innovation management tasks

Source: Sulaiman *et al.*, 2010.

To reflect this broadened and changed role and mandate, extension is now often referred to as rural advisory services (RAS), although the terms are often used interchangeably. RAS consist of all the different activities that provide the information and services needed and demanded by farmers and other actors in rural settings, to assist them in providing their livelihoods by developing their technical, organizational and management skills and practices. RAS designers and implementers must recognize the diversity of actors in extension and advisory provision (public, private, civil society); the need for broadened support to producer organizations (PO) and rural communities (beyond technology and information sharing) including advice related to farm, organizational and business management; and the role of facilitation and brokerage in rural development and value chains (Christoplos *et al.* 2012; FAO, 2010 cited in FAO, 2016).

Challenges in enhancing change in RAS systems

Globally there is a greater acceptance on the wider role of extension that includes issues on rural development that go beyond agriculture and dissemination of technologies. "However, playing this wider role requires large-scale restructuring and institutional change, which, by and large, the extension bureaucracies have been reluctant to undertake. Reinforcing this reluctance is an extension policy dialogue that continues to be couched in terms of a narrow conceptualization of extension as an agency transferring technology and improved practices from research stations to farmers." (Sulaiman and Hall, 2005, p.311).

While advisory services need to partner with several other actors (POs, value chain actors, local communities, financing institutions, etc.), discussions are often limited to its linkage with research. Even after two decades of efforts, its links with research remains weak and continues to be a matter of great concern. More number of research-extension meetings is not a solution. What is important is the nature and quality of the relationship which has to be reflected jointly. The current "institutions" in favor independence and not interdependence. Moreover, working in partnerships is a skill that could be perfected only through practice and therefore it has to consciously interact more closely with other actors to develop partnership arrangements and programmes.

Policy environment: A major problem in organizing RAS in developing countries is the absence of legal and policy frameworks for providing services. However, having an exclusive policy on extension and advisory services is not enough. For instance the need for partnerships among all RAS providers is a priority item in the New Agricultural Extension Policy in Bangladesh, but lack of shared understanding among the central and lower management levels within the public sector and the inability to make cultural changes constrain development of partnerships in extension in Bangladesh (Uddin, 2003).

"Creating and fostering effective coalition among actors is often hindered by incomplete information about what potential partners can offer, by different incentive systems for public and private actors, differences between indigenous and formal knowledge, social differences that cause exclusion of certain actors, or ideological differences (Pant and Hambly-Odame, 2006; Spielman *et al.* 2007). These barriers indicate the importance of having stakeholders that act as innovation brokers, connect people and enable effective communication for innovation.

Sustainability: financial and institutional sustainability needs to be ensured. Long-term political commitment for supportive policy and finance, and independence from government interference have been identified by experts discussing issues on inclusive pluralistic service systems (Bitzer *et al.*, 2016) as the main challenges regarding financial and institutional sustainability. In particular two issues were identified as priorities to address. First the need to facilitate the transition from funding advisory services to promote financing mechanisms of services that ensure a demand-orientation, inclusion and sustainability of RAS provision and second, to increase the bargaining power of farmers and their organizations and make them more influent in the decision-making process.

Clearly, the reform processes has to be led from within. And it must be driven by learning about what works and what does not and by the nature of local circumstances and context. Countries vary widely with respect to agricultural systems, composition of RAS and other service providers, and quality of service delivery, coverage and approaches. Countries also vary with respect to stages of reform. Case studies on Extension Policy in Kenya and Bangladesh are below (see Case studies) reveal the extent of this diversity and some of the operational challenges in implementing new policies and reform processes. There is no single approach that can deal with the different requirements of different countries and therefore universal prescriptions for reform have to be handled with care.

Currently, there are limited studies and analysis on RAS. After the FAO (1989) report of the global consultation on agricultural extension, there hasn't been any analysis on the status of extension globally. The on-going World Wide Extension Study implemented by IFPRI, FAO and IICA provides empirical data on the human and financial resources of agricultural extension and advisory services in different countries. Development of new advisory systems that are effective and sustainable should take into consideration the specific context of each country, including the level of structuring and organizational capacities of POs; the capacities of public, private and civil society advisory services

to respond to their demands, lessons learned from the past as well as the specific agro-ecological and socio-economic conditions. FAO designed stakeholder processes for the assessment and review of national extension systems, which involve the multiple actors in reviewing the existing system and developing a new design and proposal for its renewal. The process implemented in Niger, Lebanon and Mauretania puts emphasis on stakeholder dialogue and participation, and farmers' involvement, considering factors of pluralism and demand-driven services (Hani *et al.*, 2011)

Using multi-stakeholder approaches requires capacity development as local expertise for analyzing complex systems such as extension systems is lacking at the country and sub-country levels. Without this sort of capacity development, countries will remain dependent on international experts to suggest country strategies, models and blue prints (Sulaiman and Hall, 2005).

Case studies

CASE 1.1: EXTENSION POLICY IN KENYA

The Government of Kenya came out with a National Agricultural Extension Policy (NAEP) in 2001. The key policy goals of NAEP were: promoting the emergence of an extension systems that is demand-driven by farmers, their organizations and other clients and delivers high quality services, a greater role for the private sector in delivery of services, and progressive commercialization and privatization of public sector extension. However, a review of NAEP became necessary due to its limited success emanating from, inadequate institutional arrangements, limited ownership, lack of a legal framework, lack of goodwill and commitment among some of its top managers, and the slow flow of resources (CGD, 2009). The review of NAEP was also intended to make it compliant with the broad emerging issues articulated in the Strategy for Revitalizing Agriculture (SRA). This led to the development a new policy for extension- The National Agricultural Sector Extension Policy (NASEP) in 2004.

This policy paved way for more efficient and effective provision of extension services by embracing pluralism in extension service provision and better coordination and regulation of services delivered by different service providers, thus contributing to the goal of the Strategy for Revitalizing Agriculture (SRA). The Government of Kenya developed a new Agricultural Sector Development Strategy 2010-2012 (ASDS) to build further on the gains made by the SRA. It is intended to provide a guide for public and private sectors' efforts in overcoming the outstanding challenges facing the agricultural sector in Kenya. The Agricultural Sector Development Strategy 2010–2020 (ASDS) outlines ways to transform the agricultural sector to encompass innovative, commercially-oriented and modern agricultural undertakings. The NASEP 2004 was revised subsequently in 2011 to align with the goals of the ASDS.

Currently, extension services are provided through either or a mixture of three different models:

Model 1: offers free public extension services mostly to smallholder farmers engaged in growing staple foods and minor cash crops across all the agro-ecological zones;

Model 2: partial cost-shared provision of extension services, mostly within the public sector where limited commercialization has taken place; and

Model 3: fully commercialized and mostly involving the private (e.g. private companies and cooperatives) and quasi-public organizations mainly for specific commodities such as tea, coffee, sugar, pyrethrum, barley, tobacco, horticulture and dairy. Under this system, extension services are usually embedded in agricultural services.

The new National Agricultural Sector Extension Policy (NASEP) takes a sector-wide approach and addresses key sectoral issues in the delivery of extension services. It gives guidelines on addressing and devising funding modalities, packaging of technologies, technical capacity building and research–extension–farmer linkages, and application of ICTs in AKIS in general. It also offers guidance on the role of the private sector and its modalities of providing extension and other auxiliary services.

Its vision is to have:

> *'Kenyan agricultural extension clientele demand and access appropriate quality extension services from the best providers and attain higher productivity, increased incomes and improved standard of living'.*

Based on this vision, the key objective will be:

> *'To empower the extension clientele through sharing information, imparting knowledge and skills, and changing attitudes so that they can efficiently manage their resources for improved quality of livelihoods'.*

The objective will be fulfilled by:

- promoting pluralistic extension service provision and management;
- guiding the operations of extension service providers (ESPs) through an established independent regulatory body to ensure provision of quality extension services;
- establishing an implementation framework for projects and programmes providing extension services;
- harmonizing extension approaches and methods including empowering grassroot organizations to deliver extension services;
- supporting the establishment of a national agricultural research system and the need to have a demand-driven research agenda;
- strengthening established frameworks for stakeholder linkages including those responsible for providing extension facilitating factors; and
- compelling extension service providers (ESPs) to mainstream cross-cutting issues in extension messages.

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CASE 1.2: AGRICULTURAL EXTENSION POLICY IN BANGLADESH

Agricultural Extension Services in Bangladesh have evolved historically and changed overtime. At present, there are many agencies providing extension support to the farmers of Bangladesh. These include government agencies, namely, the Department of Agricultural Extension (DAE), Bangladesh Rural Development Board, Bangladesh Water Development Board, Bangladesh Agricultural Development Corporation Forest Department, Department of Livestock Services (DLS) and Department of Fisheries (DOF). There are also many non-government organizations (NGOs), commercial traders and input suppliers (manufacturers, wholesalers and retailers) operating in rural areas of the country providing extension services to farmers. Together all these partners can be seen as comprising the National Agricultural Extension System.

The Government of Bangladesh framed an extension policy titled New Agricultural Extension Policy (NAEP) in 1996 in order to fosterfaster the dissemination process of crops, fisheries and forestry technologies to farmers through improving the effectiveness of services provided by GOs, NGOs and Agribusiness Enterprises. The Goal of the New Agricultural Extension Policy is to: "Encourage the various partners and agencies within the National agricultural extension system to provide efficient and effective services which complement and reinforce each other, in an effort to increase the efficiency and productivity of agriculture in Bangladesh".

To achieve this goal the policy includes the following eleven key components: extension support to all categories of farmer; efficient extension services; decentralization; demand-led extension; working with groups of all kinds; strengthened extension-research linkage training of extension personnel; appropriate extension methodology; integrated extension support to farmers; co-coordinated extension activities; and integrated environmental support.

A recent analysis on the implementation status and effectiveness of NAEP revealed the following:

- The foundation trainings for understanding and implementation procedures of NAEP by stakeholders were very informal and as such knowledge of DAE, DLS, DOF and NGOs about concept of NAEP goal and objectives, its composition and implementation strategy was very poor. This weakness remained as a major barrier in successful implementation of NAEP in later successive years.
- The officers of DAE were better informed on different activities from reading of documents, attending awareness meeting and from official correspondences. For other departments like DLS & DOF, awareness is poor.
- Ownership of NAEP was not appropriately explained resulting in poor participation of the inter-departmental officers during the processes of implementation.
- Knowledge about composition and function of the NAEP committees among various partners of DAE, DLS, DOF, NGO and research organizations were poor resulting in inadequate implementation of NAEP; and

- implementation of NAEP was meant to be a collaborative task of the core GO agencies, DAE, DLS and DoF. But majority of DAE, DLS and DoF respondents said that it was a program of DAE only. Such perception of respondents was due to misconception and poor understanding about ownership of NAEP.

The DAE has currently revised and updated the New Agricultural Extension Policy (1996) as National Agricultural Extension Policy (2012) with specific focus on decentralized and demand-led extension to meet farmers' priority needs, co-ordinated extension delivery and effective research-extension-farmer linkages.

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CASE 1.3: NATIONAL AGRICULTURE EXTENSION STRATEGY IN UGANDA

The National Agricultural Extension Strategy (NAES) is derived from the National Agricultural Extension Policy 2016 and was developed through a wide consultative process with existing Departments and Agencies of the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF). The NAES is also aligned with the Five- Year National Development Plan (NDP II) 2015-2020. The Directorate of Extension Services (DAES) is mandated by the policy to work closely with existing Departments and Agencies; other sector Ministries and Non- State Actors on the provision of agricultural extension services.

The new strategic direction articulated in this strategy, is to transform extension from a system of parallel institutionally fragmented public and non-state actors to a well-coordinated, harmonized, regulated pluralistic service with multiple providers addressing diverse needs. The second dimension of the new direction is to address the advisory service needs along the entire value chain (as opposed to the previous focus on mainly primary production) and synergistic integration with other agricultural support services for optimum return on investment.

The key lessons from NAADS to which the NAES is based are:

- There are different farmer types and categories with different extension service needs. Therefore it is essential to tailor approach and methods to various farmer categories.
- Attaining universal coverage of extension beneficiaries is an immensely expensive venture. Public-private partnership where private sector actors deliver extension services is an option that can help with reducing the cost of extension services.
- Commercial farmers can be used to provide effective extension services and a pull to move smallholder farmers to market orientation and commercialization.
- There is need to have a clear separation of input delivery from agricultural extension delivery.
- Overall, three broad lessons spring out from the previous extension delivery approaches.
  - First, there has been inconsistent direction and approaches to extension. The changes of direction have been numerous and rapid thus undermining consolidation of best practices.
  - Second, the extension services have been mainly focused on the production segment of the value chain. As a result farmers have benefited only marginally from later segments of the value chain thus forfeiting and transferring value to other actors higher up in the value chain. It is essential to empower farmers with knowledge, skills and information to tap into the value addition segment of the value chain.
  - Finally, the extension service has many players but they have been unrecognized, isolated from each other and uncoordinated.

A number of challenges and constraints have hindered the effectiveness and efficiency of the agricultural extension service in Uganda. These are:

- barriers to adoption of technologies and best practices;
- lack of coordination and collaboration;
- low coverage of extension beneficiaries;

- narrowly focused extension content;
- ineffective extension approaches;
- inadequate budgetary allocation and scheduling; and
- limited capital and access to affordable credit.

The strategy has therefore been designed to address these challenges and benefit from opportunities in Uganda. It is based on four strategic objectives: (i) To establish a well-coordinated, harmonized pluralistic agricultural extension delivery system for increased efficiency and effectiveness. (ii) To empower farmers and other value chain actors (youth, women and other vulnerable groups) to effectively participate and benefit equitably from agricultural extension processes and demand for services (iii) To develop a sustainable mechanism for packaging and disseminating appropriate technologies to all categories of farmers and other beneficiaries in the agricultural sector (iv) To build institutional capacity for effective delivery of agricultural extension services.

The Strategy elaborates the mandates, roles and responsibilities of MAAIF, the Directorate of Agricultural Extension Services, technical Directorate and Agencies, Production and Marketing Departments of Local Governments, other relevant Ministries, Departments and Agencies as well as Non-State Actors. In particular, DAES will be the key facilitator and coordinator of all actors in extension service delivery during the implementation of this strategy.

These objectives will be vital in creating an efficient and effective agricultural extension service. The strategy has been designed with innovative approaches to not only enhance stakeholders' coverage, competencies and skills, but also to generate relevant and adequate information and knowledge base from dissemination to beneficiaries and to guide strategic interventions. The strategy also puts a premium on tracking and monitor progress, account to those concerned as well as learning and adapting for continuous improvements.

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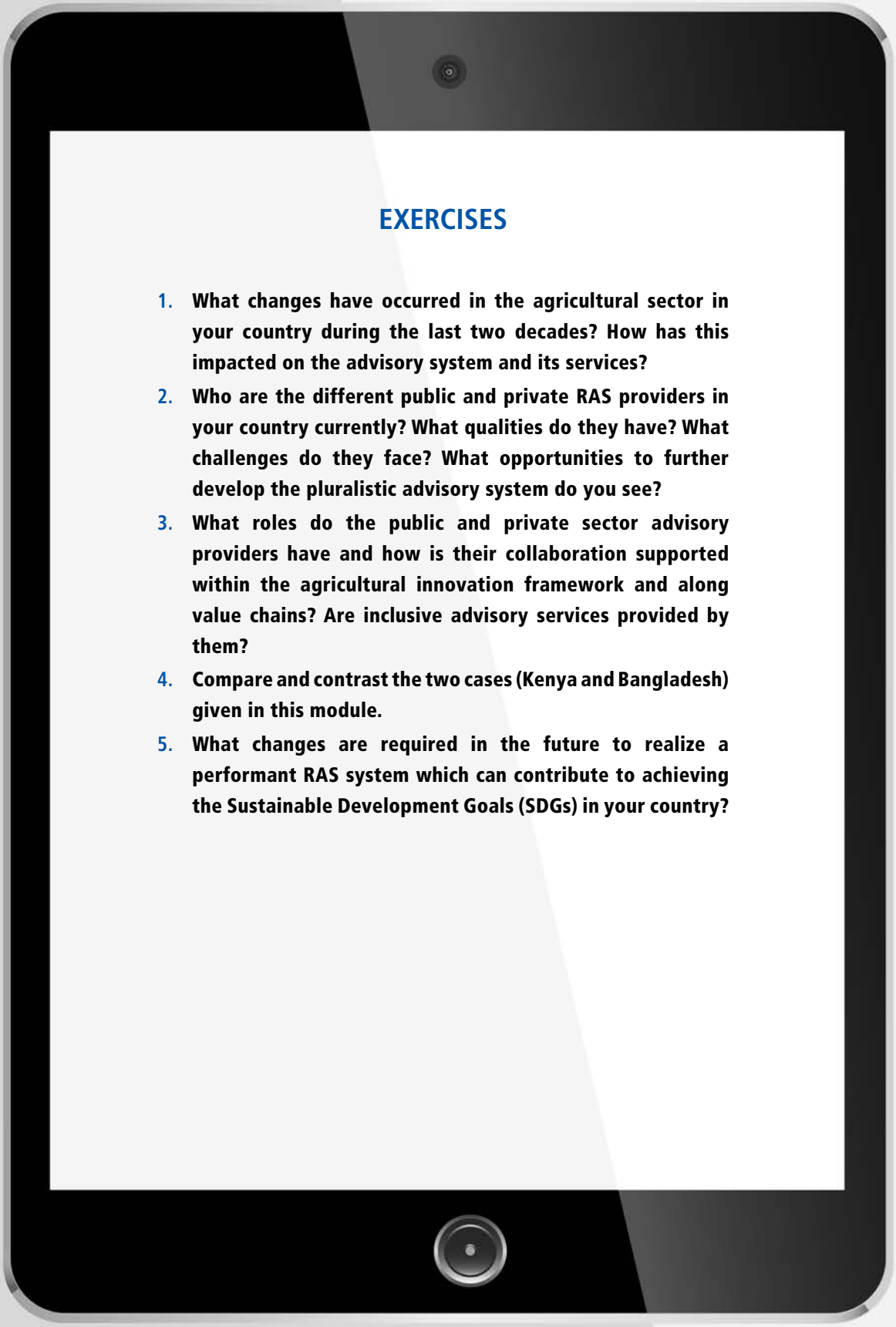
SUMMARY

Agricultural extension services face challenging times currently. Reforms in public extension are long overdue together with an integration of all advisory providers (public, civil society and private) in a national pluralistic system. It should consider the changing nature of agriculture and rural economy and the increasing calls and demands for wider support from advisory services.

Reforms should build on increasing pluralism, experimenting with different financing mechanisms, innovative ways of providing services, new theoretical and practical insights from communication and innovation studies and a central role of farmers and their organizations in RAS policy formulation, RAS governance and implementation. The debate should move beyond technology dissemination and research-extension linkages to wider provision of support and inclusive services as well as partnerships among a wide range of actors in the innovation system and along the value chains.

Importing new models for country/region wise adoption is no longer valid. Country specific solutions are to be developed depending on the challenges to be addressed and the institutional setting needed to respond to them. Countries should develop their capacities to evaluate historical and current experiences in implementing different RAS reforms.

Data on RAS impact is greatly needed, at service and system level for a more effective policy making. Baseline data, including also sex-disaggregated data on RAS provision, are often scarce or incomplete and it is exacerbated given the pluralistic service system in place today. On the one hand, to collect data and analyze them, RAS providers should commit and join efforts to monitor and evaluate their service provision, and on the other hand to support this effort, governments, donors and development agencies should support innovative solutions and identify appropriate financial means.



EXERCISES

1. **What changes have occurred in the agricultural sector in your country during the last two decades? How has this impacted on the advisory system and its services?**
2. **Who are the different public and private RAS providers in your country currently? What qualities do they have? What challenges do they face? What opportunities to further develop the pluralistic advisory system do you see?**
3. **What roles do the public and private sector advisory providers have and how is their collaboration supported within the agricultural innovation framework and along value chains? Are inclusive advisory services provided by them?**
4. **Compare and contrast the two cases (Kenya and Bangladesh) given in this module.**
5. **What changes are required in the future to realize a performant RAS system which can contribute to achieving the Sustainable Development Goals (SDGs) in your country?**

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MODULE 2: Pluralistic service systems

By Blum, M.L., Cofini, F. and Sulaiman, V.R.

OBJECTIVES

1. to examine the importance of pluralistic advisory services;
2. to understand the main issues (governance, accountability, coordination, etc.) for service provision in pluralistic service systems for achieving relevance, efficiency, effectiveness, impact and sustainability; and
3. to be aware of the main issues in enabling and promoting pluralism.

INTRODUCTION

Extension services are no longer about government agents visiting farms and advising producers about how to grow crops. While this kind of advice will continue to remain important in some situations, producers need a wider range of support and services beyond production, which they are increasingly seeking from other sources, including input dealers, other farmers, producer organizations (POs), agri-business services, non-governmental organizations (NGOs), etc. Shrinking public funds, coupled with the emergence of NGOs, POs and other actors, as well as privatization of services, has led to a growing variety of organizations alongside the traditional public sector. These actors increasingly provide agricultural and rural advisory services to farmers; and donors and national governments have started to recognize their role and importance. Various efforts, such as multi-stakeholder rural advisory services (RAS) platforms, innovation platforms and hubs; and value chain networks have emerged to:

- support policies and joint programmes;
- oversee their implementation;
- monitor; and
- address gaps and shortcomings in order to reach an increasingly diverse farming community and thus improve rural livelihoods.

Pluralistic service provision exists, but whether these services work in isolation or whether they coordinate their work to be more efficient and create synergies to increase effectiveness, makes a big difference. Coordination of services can take place at different levels, whether within a value chain, or territory-related, and can be taken up by any of the actors, including POs. Partnerships are critical for advisory services to broaden the provision of services, make the system more inclusive and services more demand-led, while taking into account multiple sources of knowledge (Bitzer *et al.*, 2016; Birner *et al.*, 2006).

Enabling and promoting a pluralistic RAS system that is expected to respond to the diverse needs and demands of small-scale producers has to promote multiple RAS stakeholders (e.g. by various financing mechanisms) and support their collaboration in order to provide high quality services that satisfy the criteria of relevance, efficiency, effectiveness, impact and sustainability. A pluralistic service system needs also to address some challenges related to inclusiveness, accountability, coordination and financing.

The purpose of this module is to discuss the major issues associated with enabling and promoting pluralism, and how farmers can benefit from enhanced system functioning and services.

DEFINITIONS

Pluralistic advisory service systems

Pluralistic advisory service systems are characterized by the coexistence of multiple public, private, and civil society service providers, offering various types of service; have diverse financial resources; and use multiple sources of knowledge, technologies, know-how and information. Such a broadened institutional landscape of service provision in rural areas should result in more relevant and inclusive services for smallholder producers and hereby contribute to rural transformation and poverty reduction.

Yet, in order to provide services efficiently and effectively, there needs to be coordination of service provision, transparency in who provides which services, as well as partnerships and networks/platforms to agree on common goals and joint action.

Inclusiveness of pluralistic service systems

Pluralistic services are considered inclusive if they are (FAO and KIT, 2016) (FAO expert consultation held in May 2016):

- responsive to resource-poor and vulnerable farmers, especially women and youth;
- tailored to the multiple capacities, needs and demands of farmers;
- characterized by continuous dialogue and learning between farmers and service providers; and
- based on complementary services by different providers.

Accountability

Accountability refers to the responsibility and the relationships that a service provider has towards its users (downward accountability) and its donors or bureaucratic hierarchies (upward accountability). Service providers, be they NGOs, POs, public agencies or private enterprises, have to account for their activities to their primary stakeholders.

Coordination

Coordination is the unification, integration, and synchronization of the efforts of actors so as to provide unity of action in the pursuit of common goals. Coordination is the essence of management and is implicit and inherent in all functions of management. In pluralistic service systems, coordination refers to the function through which advisory and other service organizations are aligned to better serve the needs and respond in a more efficient and effective way to the demands of divers producers. This requires purposive linkages and partnerships between and among advisory-type institutions, but also with the actors of the wider agricultural innovation system pursuing the same interests and aims.

Sustainability

An institution might be deemed sustainable if it has the strength to survive and develop to fulfil its functions on a permanent basis with decreasing levels of external support. More specifically, an institution or a long-term programme could be considered sustainable where it is likely:

- to be able to secure necessary inputs and support; and
- to provide, efficiently and effectively, a continuing stream of activities and outputs that are valued by its stakeholders (members, clients, and/or superiors) for as long as the institution is needed (NORAD, 2000:7).

"They [institutions] must [also] respond to and shape the major changes that will unfold over the next 50 years: urbanization, technological innovation, economic growth, shifting social values, changing scarcities for environmental and natural assets, and stronger linkages among nations" (World Bank, 2003:37). In this context, extension and advisory services undergo a necessary process of change and institutional adaptation.

DISCUSSION

Matching services to demand

Farms are not a homogenous category and they need differentiated advisory support. They differ in their production systems and natural environment in which they operate, with their composition and characteristics related to gender, age, education, access and control over resources, skills, entrepreneurship and ambitions. This affects their access to services and markets, and their ability to benefit from opportunities. Furthermore, small-scale farmers have also changed

their traditional production structure in response to market reform and globalization. They need to be well equipped to sustain themselves and improve their livelihoods, thus improved access to diversified and specialized support and advice is essential (Klerkx and Leeuwis, 2008; Rivera, Qamar & Crowder, 2001). With the increased participation of small-scale producers in global markets, alongside growing populations and their ageing; rapid urbanization; increased competition for natural resources leading to widespread degradation of land and water resources; and climate change-related challenges, small-scale producers are increasingly exposed to risks and uncertainty (FAO, 2014, 2017a).

Women and youth also present a clear expression of diversity in farmer's needs and demands. Women's multiple roles and responsibilities in productive, reproductive and community activities produce a very diverse set of service needs and demands compared with those of men farmers (Petrics *et al.*, 2015; Quisumbing and Pandolfelli, 2009). They have several challenges to face in accessing and benefiting from RAS; these are related to time and mobility constraints, education and literacy limitations, as well as to the gender blindness of providers (Petrics *et al.*, 2015) (for more details see Module 9 on Gender-Sensitive RAS). These constraints are often not acknowledged and scarcely addressed, resulting in women as the most overlooked clientele by RAS (World Bank/IFPRI, 2010).

Increasing the productivity and sustainability of agriculture depends, to a large degree, on engaging young people in the sector, drawing on their energy and innovations. Also youth, that is rural girls and boys, as well as young women and men, have very diverse needs and interests compared with older clients, given also their potential in catching opportunities offered by ICTs (Samsul Farid Samsuddin *et al.*, 2016; CTA, 2016). Youths, in particular young rural women, need agricultural skills and advice on how to gain access to land, credit, savings and insurance. They also need improved access to training and market information (mostly to niche markets), and the requisite skills and capacities for collective action to ensure that their voices are heard and considered in policy-making (CTA, 2014).

None of the abovementioned groups, either women or youth, are homogenous. This needs to be taken into account when identifying and addressing challenges and strengths of different groups and when designing interventions.

Given that specific services are needed for specific contexts, economic enterprises, livelihood functions, and above all different farmer categories, one single provider cannot accommodate all demands. Agricultural and rural advisory services can be potentially provided by three main groups: the public sector, the civil society, or the private sector.

- The public sector includes Ministries and Departments of Agriculture and Agricultural Research Centres.
- The civil society sector includes local and international NGOs, foundations, community boards and farmer associations, bilateral and multilateral aid projects and other non-commercial associations.
- The private sector consists of commercial production and marketing firms (such as input manufacturers and distributors), farmer organizations (e.g. commercial farmers or farmer groups operated enterprises like cooperatives) where farmers are both users and providers of agriculture information, agro-marketing and processing firms, trade associations, and private consulting and media companies.

To ensure an inclusive service system (see under Definitions) and provide farmers with the specialized information they need, a pluralistic environment or landscape is required, with diverse actors not only providing services to diverse users, including resource-poor and vulnerable farms especially, but also concurrently using different approaches and methods (Bitzer *et al.*, 2016).

Complex livelihoods need specialized support from RAS advisers and also a co-learning approach, characterized by a continuous dialogue and learning between farmers and service providers, rather than a traditional supply-driven orientation. The role of POs in providing relevant and specialized services to farmers has increased over time. Snider *et al.*, (2016) show how cooperatives act as intermediaries between their members and service providers, both external actors and the cooperative itself, to provide certification services and help farmers to comply with standards. Standards are often difficult to understand, and requires a need for new or adapted knowledge, which cooperatives acquire through various collaboration to provide services (e.g. such as new types of training or provision of inputs) to their members. Evidence shows also that when services are provided by POs, accountability also increases, because POs are in theory more accountable to their members (Bitzer *et al.*, 2016).

Accountability towards farmers (downward accountability) remains still one of the main challenges in RAS systems, despite the pluralistic environment and it is crucial in order to match the demand with the supply of services, while ensuring relevance, service quality and demand orientation of any services required (Bitzer *et al.*, 2016).

As a benchmark (Christoplos, Sandison and Chipeta, 2012) a provider is accountable to their users,

- if a provider is accountable to their users if there are mechanisms in place to incorporate feedback from farmers into RAS workplans on an ongoing basis;
- if the methods used include concrete requirements and measures for response to concerns raised by clients;
- if there is a functional market for services, where clients have a choice of providers; and
- if clients are dissatisfied with the quality of the services they receive, among others.

Likewise, a good example of promoting accountability are the Community Score Cards (Wongtschowski, Oonk and Mur, 2016, cited in FAO & KIT, 2016). The basic idea of the Community Score Cards, pioneered by Care International, is to establish a dialogue between providers and users, starting from the early phases of service provision and culminating in joint monitoring and evaluation (M&E). This implies a fundamentally different relationship between advisory service providers and farmers, based on joint activities and transparency, as compared with the "traditional" top-down approach to extension (Bitzer *et al.*, 2016). Key issues in promoting accountability are related to farmer's power and control over resources (e.g. by contracting and paying for services). As remarked by an expert during the expert consultation on Pluralistic Service System held in FAO, in May 2016:

> *"We really need to think along the lines of social accountability, farmers' voice and power to influence service delivery. Farmers' voice and power are critical to influence and put pressure on service providers, regardless of whether they are public, private, or other"* (FAO & KIT, 2016: 13).

Three main factors determine accountability:

- the fundamental assumption that producers are partners and not beneficiaries;
- the use of participatory methods and approaches (see Module 10 on Methods and Approaches); and
- governance structures and flow of funds (see Module 5 on Financing Mechanisms) (Christoplos, Sandison and Chipeta, 2012).

While participatory methods facilitate that the views of farmers are heard, they do not automatically lead to increased accountability (i.e. respond to the demands of their users). On the contrary, the use of demand-side financing mechanisms by which users pay for the services they receive, either with their own money or with funds channelled through POs, vouchers, etc., are proven more effective to increase accountability towards users and empowerment of farmers (Chipeta and Blum, 2018).

Finally, participatory M&E is an important step forward in strengthening the accountability of service towards users. Including farmers and their organizations in the governance structure of RAS – bottom-up planning, design and implementation, as well as development of indicators and assessing services – is crucial to allow users to influence the process (Bitzer *et al.*, 2016) and eventually increase relevance and ownership of services.

Public sector funding that promotes a pluralistic system came into play with the privatization of advisory services in the late 1980s and 1990s. Though subject to criticism, government-led pluralism remains one means for developing countries to expand and improve the range and effectiveness of RAS services. The critical question that remains then, is whether public sector funding of services carried out by private providers, and the apparent pluralism inherent therein, will actually result in viable and meaningful pluralistic partnerships?

The crucial role of Effective Coordination and Partnerships

The recognition that pluralism exists brings into the discussion several concerns around the need for coordination of service provision, the avoidance of overlapping and the opportunity of synergies though collaboration and partnerships between providers, not only to enhance inclusiveness of service provision, but also to increase efficiency, effectiveness and impact of services. Without coordination, pluralistic service systems would only be the coexistence of different service providers with no functional linkages among them (Bitzer *et al.*, 2016), ultimately not providing any benefit to the farmers. As remarked by one of the past presidents of the Australasia-Pacific Extension Network (APEN):

> *"We are reinventing the wheel many times over. It is a more fragmented system now, especially where you have national, state and now regional bodies. If you look at the regional bodies, there does not seem to be a lot of coordination, networking or sharing of information going on between each of those within each state, let alone across the country. So we are not learning from our mistakes and what we can do better". (James, 2006:31)*

Coordination is a need at different levels and requires collaboration among actors.

At regional and national levels, coordination aims at consultation on policy and action priorities, learning between providers and other actors, and evaluation of existing programmes and practices (Bitzer *et al.*, 2016). The Country Forums promoted by the African Forum for Agricultural Advisory Services (AFAAS) are one example of multi-stakeholder country platforms for RAS that govern the pluralistic system and enable RAS actors to relate to each other within a framework of a set of agreed principles, rules and well defined roles and responsibilities. Also the AFAAS virtual platform http://networking.afaas-africa.org/, supported by IFAD, GIZ and the European Commission, is an attempt to provide a space for agricultural advisory services agents and other stakeholders to collaborate, solve problems, and create business ventures.

At value chain level, coordination is needed both vertically between different actors at different stages of the value chain, such as producers, suppliers, processors, etc., and also horizontally level among market actors at the same stage of the value chain. At the Agriculture Innovation System level, coordination among actors is needed in order to build coherence and consensus-based priority setting, to strengthen the sharing of knowledge and resources through joint processes and products, and also to reduce transaction costs and reach economies of scale in RAS and market activities (World Bank, 2012).

In a pluralistic service system, effective coordination enables learning among providers, improves the quality of the services and increases outreach, while avoiding contradictory messages and duplication of efforts (Bitzer *et al.*, 2016). A number of challenges for coordination were identified during the expert consultation on pluralistic service systems held in FAO, and afterwards validated by participants in the annual meeting of GFRAS, in Cameroon in September 2016. The various stakeholders recognized that competition, working in isolation, overlapping areas of coverage, power relations and conflicting priorities are in fact the main constraints to coordination. As a way forward, they also acknowledged that all stakeholders and not only the public sector, have a role to play in ensuring coordination (FAO. 2017b).

Different providers will tend to emphasize different RAS functions and tasks – whether provision of information, advice on technology options, training in farm management, facilitation of stakeholder processes, learning through exchange visits, mediation to resolve community or other conflicts, or problem solving through on-farm trials and online consultation. This complexity of provision and purpose is, in large part, what makes discussion about RAS difficult and sometimes confusing or seemingly contradictory. In fact, as Laurens Klerx explained during the expert consultation at FAO, one cannot make informed decisions about a RAS system, including investment decisions and advisory services without understanding the pluralism of RAS providers, purposes, etc., and the real cost of fragmentation.

Increased collaboration resulting in successful partnership is crucial for impact at scale. Private sector, PO, civil society and public actors must collaborate in a way that results in inclusive and ecologically sustainable service provision (FAO & KIT, 2016). Private sector engagement in service provision is increasing. It consists of commercial production and marketing firms (such as input suppliers) both local and international, whose size and characteristics influence the type of partnerships, the business models, the governance and the monitoring arrangements (IFAD, 2016). Public private partnerships such as Public private partnerships (PPP) agribusiness centres and outgrowers schemes have the potential to provide benefits and services to producers in a timely, relevant and flexible way (Krell, Fisher and Steffey, 2016). One successful example of an outgrower scheme is in rubber production in Western Region, Ghana, the Rubber Outgrowers' Plantation Project (ROPP). This showed that the contractual arrangements involved in the business model had positive effects for the outgrowers. They benefited from a significant increase in income as well as improved access to technology, advisory services, and social and economic infrastructure (roads, schools, processing facilities) provided by the companies. While donors and government provided long-term capital for rubber planting, the private sector and farmers' organizations played key roles as providers of technical advice and as facilitators, linking farmers to financial institutions (Paglietti and Sabrie, 2012).

In a pluralistic service system, providers may have complementary roles and tasks related to coordination and partnerships. Despite calls for privatization, government must play a continuing role in extension (Rivera and Alex, 2004; Swanson and Rajalahti, 2010). The public sector has an important role to play as a coordinator, overseer and regulator of the entire pluralistic advisory system. Its role becomes crucial in terms of governance, national policy direction, quality control and accreditation of service providers, including the private sector, to safeguard the interests of farming communities. In a pluralistic setting, government will need to organize national and regional multi-stakeholder platforms and exchange meetings to discuss and determine with major stakeholders the value and importance of RAS, and how best to organize the varied RAS activities in a systematic fashion. Such multi-stakeholder platforms will need to decide on who will be responsible for which areas, and for what purposes, and what partnerships would need to be established and how resources are to be spent, etc.

Many tasks of advisory services have a public goods nature, including tasks related to regulation, quality control in the produce supply chain, the coordination of service provision, and natural resource management, as well as the provision of services to marginal or poor groups that are not likely to access or afford private advisory services. The public sector's role is to support advisory services in addressing issues of long-term social and ecological sustainability (including food security), and to facilitate knowledge management and to enhance quality of services. To fulfil its new role, the management capacity of the public sector must be strengthened. However, there are different roles and responsibilities that have been traditionally associated with the public sector that the government can also delegate.

Producer organizations, when enabled with the right skills and empowered, may coordinate access to services among their members and negotiate service delivery with providers (Snider *et al.*, 2016). For example, in Colombia, the Narino Dairy Products Cooperative (COLACTEOS) dairy cooperative (Escobar, 2018) established its own technical assistance services.

The cooperative provides to its members advisory services on animal health advice, veterinary services, farm management advice and education. The services are delivered as part of a compulsory scheme to deliver high quality milk, and are included in members' fees. In addition, responding to the demands of members, the cooperative also provides specialist services offered by laboratories, research institutes, financial institutions and input suppliers on a special rate fully paid by the members (see case study).

Finally, donors have an important role in coordination. They have to ensure that funds they are providing are aligned with existing efforts in a region or country, by for example supporting POs in engaging in coordination (FAO & KIT, 2016). In Benin, several donors – AFD/France, SNV/Netherlands, SDC/Switzerland and DGD/Belgium – combined their efforts under the umbrella of the Ministry of Agriculture, to revitalize advisory approaches with the establishment of the Advisory Services for Family Farms (ASFF) which is implemented by a NGO and PO network (CIRAD, 2012; Faure, Rebuffel and Violas, 2009).

Overall coordination needs to be understood not as a responsibility for one actor over an entire system, but more an ensemble of roles and responsibilities involving different stakeholders at different levels, aiming to ensure that service provision contributes to responding to farmers' needs and demands, and meeting the objectives of national policy (FAO & KIT, 2016).

Creating a market for services

Although pluralism in advisory services makes it possible to capitalize on the competitive advantages of different actors, and offer diverse services to different groups of clients, it has its problems. Limited capacity among many actors, duplication of efforts, lack of accountability towards users as well as the challenge of coordination all greatly affect effectiveness and efficiency of the services.

In addition to these, evidence from around the world suggests that in order to ensure inclusiveness, demand-orientation and sustainability of service provision, appropriate financing arrangements need to be considered, where users increasingly have a say in the choice of services they want (Neuchâtel Initiative, 2002; Bitzer *et al.*, 2016; Chipeta and Blum, 2018). It is now acknowledged that funding and delivering of extension and advisory services can be understood separately (Christoplos, 2010). While those services demanded by better off farmers can be offered on a partial or full payment basis for clients, others, especially factors relating to food security, poverty reduction and ecological sustainability require public financial support, no matter who will actually provide the services.

New arrangements such as demand-side financing mechanisms, where public funds are channelled through the users or their organizations, are increasingly emerging as a form to establish independently functioning markets and to empower clients and local management (Chipeta and Blum, 2018; Zeller, 2002). When demand-side financing mechanisms are combined with the financial participation of the users, either through direct payment for services by users or indirect payment though membership fees, etc., producers and their organizations increase their purchase power and are enabled to articulate and negotiate their demands for services (Chipeta and Blum, 2018) (see full discussion in Module 5 on Financing Mechanisms).

Evidence also shows that farmers, including resource-poor ones, are willing to pay for relevant services that they value and that respond their needs (Ahmad *et al.*, 2011; Onoh, 2015). In order to make services affordable, other measures can be implemented such as promoting group and farmer-to-farmer approaches (for more details see Module 10 on Approaches and Methods). Embedded services, for example advisory services provided by input dealer whose cost is included in the selling price of the input, are another option to enable farmers to pay for services (Fao & KIT, 2016). In China, for example, the government supports private companies to interact with farmers through input and output markets, as well as public service provision (Kaegi and Schmidt 2016).

Providing evidence on pluralistic RAS

Information and data on service provision are scarce and when available is often limited to the provision of RAS by the public sector, thus overlooking the services by the private sector, NGOs, or POs, among others (FAO, 2014). This lack of evidence has several implications, at both producer and system level.

On the one hand producers have difficulty in knowing the RAS providers available and the services they provide, and at what cost, thus limiting producers' possibilities for making an informed choice on the best service for their needs. In a pluralistic system, providers need to be active in advertising their services so that farmers are aware and can make an informed choice among service providers. Producers as well as their organizations also need to be more active in searching for information on RAS and other providers, and on agricultural knowledge in general. Modern information and communication technology (ICT) can help to enhance access to such information and to create a RAS market.

On the other hand, lack of data on service provision negatively affects transparency as to what services are available and any efforts for coordinating RAS system and avoiding overlapping. Developing Local Extension Capacity (DLEC), an ongoing project by USAID and Digital Green, is currently attempting to fill this gap by mapping stakeholders of RAS providers of 19 Feed for the future countries[1]. Mapping results will go to Country fora for further updating and ownership (K. Davis, pers. comm. 2017).

For contemporary policy making, it would be advisable that a roster or "map" of all the publicly and privately funded RAS programmes be established and a national policy on service provision for agriculture and rural development formulated that would recognize this multiplicity of RAS funding and programmes, and then to study the feasibility of a policy that would promote integration of the RAS system.

Case studies

CASE 2.1: COLACTEOS CASE STUDY IN COLOMBIA

The Narino Dairy Products Cooperative (COLACTEOS) in Colombia is a case of a producer cooperative-based services. RAS are fully financed through the benefits from processing and marketing activities of the cooperative. Internal and external services are coordinated by COLACTEOS.

In Colombia, producer unions have a long tradition and a great deal of institutional capacity. Based on the experience of the achievements of the National Colombia Coffee Growers' Federation, beginning in the 1970s, many POs have established their own technical assistance services. With payments of costs by members of the organizations through a wide range of mechanisms, the unions' and producers' organizations have established technical assistance modules and components with very specific objectives, mainly oriented towards production for internal and external markets. The majority of these services have made use of the Incentive for Productivity for the Strengthening of Technical Assistance set up by the government. Some organisations combine their own contributions with those of the Ministry of Agriculture to service their users.

COLACTEOS is a dairy cooperative. The mission is to contribute to the economic, social and cultural development of members through the provisions of services to producers, and buying milk, processing, distribution and sale of high quality dairy products, using adequate technology and committed personnel. The cooperative transforms delivered milk and sells dairy products of various kinds nationally. COLACTEOS started in 1977, and it has provided technical services to its members since 1995. There is a strong engagement of the producers in defining and evaluating the services, as they are the owners of the cooperative and since 1995 the services have undergone changes and diversified its components in response to the milk market and to the specific needs articulated by the cooperative members.

The purpose of the technical services is to strengthen the dairy farms and increase their profits from milk production. The service is a strategic tool to ensure the quantity and quality of milk that is required to provide high quality dairy products. The producer members receive technical services such as agricultural and animal health advice, veterinary services, farm management advice and education through the cooperative. The cooperative has an employed team of advisers: Five veterinaries, two agronomists and three animal health specialists. For specialist services, the cooperative collaborates with a number of other institutions to provide these through short-term contracting arrangements. The collaborating institutions include laboratories, research institutes, financial institutions and input suppliers. The services are delivered as a compulsory scheme according to a laid out ISO standard procedure. Members can moreover call for extra services and visits when needed without extra payment. The services are also fully market oriented, as the cooperative is a strong market actor and the services relate closely to the quality of the milk products. The focus of the services is to increase productivity and milk quality on the farms. There is a strong connection between the technical services and financial services, with the cooperative facilitating access but delivered through commercial banks. Contrary to many other farmer based organizations in Colombia, COLACTEOS has made a deliberate choice to NOT associate with the programmes offered by the Ministry of Agriculture and Rural Development, mainly because of the specific requirements for service providers to be approved for subsidy by the Ministry. The requirement is that the subsidy is only provided to service companies that service all producers in an area, which means that the specialist services that COLACTEOS is providing cannot be subsidized. Instead the cooperative finances the costs of the services for their members from its own sources. COLACTEOS is thus a case of cooperative-based services financed through

1 https://www.feedthefuture.gov/countries

income generated by processing and marketing activities of the cooperative. The financing of the technical services is integrated into the total cooperative's production costs, which are recovered through the sales of dairy products by the cooperative. The users of the services are the 265 members of the cooperative. These represent a variety of small-, medium- and large-scale milk producers. 73 percent are men and 27 percent are women and the cooperative has no specific policy or focus regarding gender. The services are managed by the cooperative management, but governed by the Board, consisting of producer members who are at the same time the users of the services. The users are represented through the Board, but otherwise users participate in decision-making through the Cooperative Annual Assembly, where all major decisions have to be endorsed and where concerns can be raised. Consultation meetings are conducted in the main working areas quarterly (zonal assemblies), where members meet with the Zonal managers to discuss issues pertaining to milk production and the services.

The case of COLACTEOS is one case of a mass of private sector development and investment in RAS. It is farmer based as a cooperative, and completely funded by the cooperative's own means. It can therefore stand on its own institutionally as well as standing financially independent of political influence from changing governments.

Source

Escobar, G. 2018. *Innovations in financing mechanism for demand driven RAS. The Case of COLACTEOS in Colombia.* Rome, FAO. (also available at: http://www.fao.org/3/CA1232EN/ca1232en.pdf).

CASE 2.2: PLURALISTIC ADVISORY SERVICES IN MALAWI

For a long time, agricultural extension service was the prerogative of the government through the Ministry of Agriculture. With the proliferation of NGOs since the 1990s, the advent of democracy and decentralization, and a change in extension policy to a pluralistic and demand-driven service system, the number of non-statal actors involved in the provision of advisory services increased, resulting in the development of a pluralistic advisory system. Malawi introduced a new policy – "Agricultural Extension in the New Millennium: Towards Pluralistic and Demand-Driven Services in Malawi" – in 2000. The new policy in a way legitimized the involvement of large number of NGOs and POs and for-profit companies operating and providing RAS services in the country.

Though several organizations are engaged in advisory provision in Malawi, the government extension service remained the largest in terms of staffing and spread. The government extension service is characterized by limited resources, but with many field staff with poor qualifications. Most of the other providers have limited staff concentrated at centralized levels, but with no grassroots staff, thereby depending on government advisory staff to reach farmers.

About 30 percent of the organizations coordinated their approach and message development with the government alone, while about 22 percent coordinated with NGOs and the government. Others coordinated with NGOs alone, and some research institutions. Over all, few organizations are coordinating with each other, which highlights the need to strengthen linkages and partnerships. To address the challenge of coordination, several structures were created at District and national level. At District level, the District Agricultural Extension Services System was created as the main framework for organizing farmer demands through Stakeholder Panels and coordinating service delivery through Extension Coordination Committees At national level, coordinating structures were largely absent until stakeholders themselves established the Malawi Forum of Agricultural Advisory Services (MFAAS) in 2011. The forum serves as an information-sharing body concerned with coordination, standardization, quality, and capacity building.

The study has demonstrated that the agricultural innovation system in Malawi has moderate linkages. Organizations had strong linkages with the District or local agencies, and this is probably because it is almost mandatory, as the Districts are gatekeepers to the communities. Slightly over half of the organizations had strong linkages with NGOs involved in RAS activities, other advisory service providers, and private-sector firms.

Weak linkages were evident with the agricultural education institutions, and this is a concern, as agriculture is a dynamic science. Practitioners should be in touch with the scientists to enhance their RAS activities. Educational institutions should also interact with practitioners to ensure that their research and teaching activities are responding to real issues in the field. These linkages should therefore be strengthened.

Finally, despite weak linkages and few resources for addressing all the challenges the pluralistic system of Malawi is facing, it is found that the new policy has contributed to build the foundations for a strong and effective demand-led RAS system in the country. A report from Simpson, Heinrich and Malindi (2012) also note that this potential should be further unlocked through concerted efforts and targeted funding in order to have a highly effective pluralistic RAS system.

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SUMMARY

Commitment to pluralism is central to the discussion on extension reform. It is now widely accepted that no single actor or agency is best placed to offer the wide range of services required by the different categories of farmers. All stakeholders, including governments, POs, NGOs and the private sector have a role to play in enabling a pluralistic RAS system where "no one is left behind". In order to be relevant, services need to match the demand of diverse producers, including men, women and youth. This requires not only the provision of specialized services which producers demand but also concurrently the use of different advisory approaches and methods. The traditional supply-driven orientation should be replaced by systematic ways of articulating demand and negotiating services by the clients as well as a co-learning approach where farmers and service providers continuously dialogue with and learn from each other.

Accountability is crucial in order to ensure relevance, service quality and demand orientation of services. Lack of accountability remains one of the main challenge in RAS systems, despite the pluralistic environment. Three main factors would enhance downward accountability:

- first, a multi-stakeholder governance structure where producers are included and can influence the planning, design, implementation and M&E of the services;
- second, but most crucially, the promotion of demand-side financing mechanisms where producers and their organizations are enabled to articulate and negotiate their demands as well as to pay for the services, thus leading to more relevant and effective services; and
- third, the use of participatory methods involving clients as partners and not beneficiaries of services.

In a pluralistic system, effective coordination has a crucial role. This, in fact, enables learning between providers, allows joint planning and decision-making based on consensus building, increases efficiency and effectiveness of services, and enhances impact while increasing possibility to scale up. Providers may have different and complementary roles related to coordination. Coordinating pluralistic arrangements is a challenge and capacities to do this are currently limited. The public sector may take a leading role in coordinating multi-stakeholder platforms, but it should further develop its role to become a regulator, facilitator and enabler in the increasingly pluralistic RAS scenario. Mechanisms to promote quality assurance and transparency also need to be put in place through clear M&E procedures supported by the use of related ICT. POs, if financially supported and equipped with the right capacities, are increasingly assuming a coordination function for their members, given their potential in articulating producer demands and providing relevant services. The most promoted institutional governance framework for enabling coordination in a pluralistic system are multi-stakeholder platforms, such as the country forums promoted by AFAAS.

Creating a functional market of services is increasingly seen as an effective way to increase sustainability of services. This implies a need to shift from funding to sustainable financing mechanisms, including co-financing mechanisms with diverse public (e.g. levies) and private sources (POs, private enterprises, etc.) to empower clients and allow them to choose the services they need in a market of services. Also, enabling policies for private sector involvement in service provision including both POs and for profit companies should be implemented for enhancing a market for services. Again, transparency is required regarding available services, conditions and costs so that farmers can choose among the providers they would need. At the same time, producers and their organizations need to be enabled to increase their voice and power in order to articulate and negotiate their demands for services.

Tools

TOOL 2.1: MATRIX OF OPTIONS FOR PROVIDING AND FINANCING PLURALISTIC AGRICULTURAL ADVISORY SERVICES

Pluralistic advisory services covers the variety of service providers that have emerged in recent years. The following matrix could serve as a framework to examine the pluralistic agricultural advisory services in a given context by looking at the various service providers and how they are financed.

TABLE 2.1: Matrix of Options for Providing and Financing Pluralistic Agricultural Advisory Services

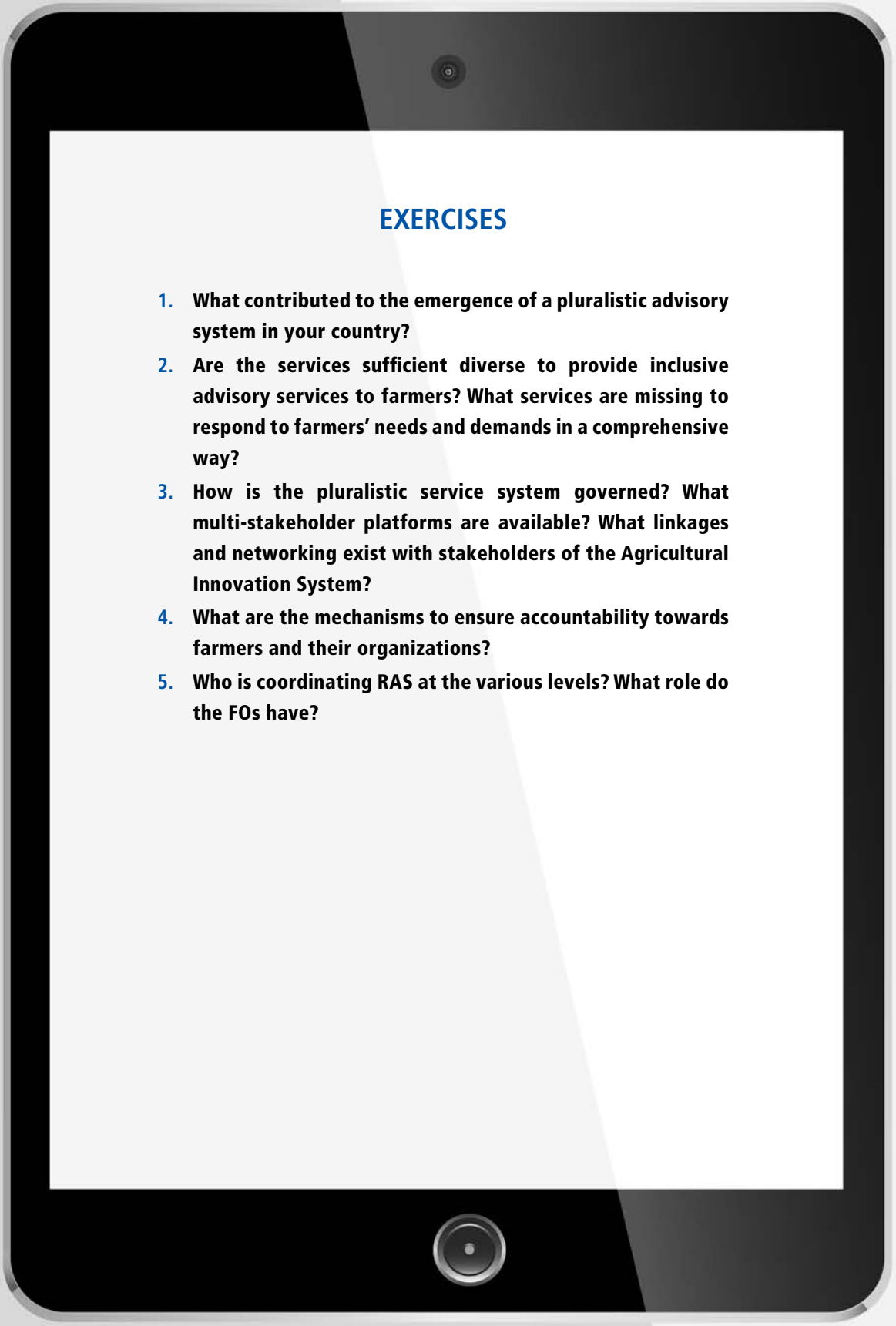
		SOURCE OF FINANCE FOR THE SERVICE				
		Public sector	Farmers	Private companies	Nongovernmental organization (NGOs)	Farmer-based organizations (FBOs)
PROVIDER OF THE SERVICE	Public sector	Public sector extension services with different degrees	Public sector extension agents with farmers paying fees	Public sector extension agents hired by private companies	Public sector extension agents hired by NGOs	Public sector extension agents hired by FBOs
	Private companies	Pubblicity funded contracts or subsidies to private service providers	Private service providers hired and paid for by farmers	Information provided with sale of inputs	Private service providers hired and paid for by NGOs	Private service providers hired and paid for by FBOs
	Nongovernmental organization (NGOs)	Pubblicity funded contracts or subsidies to NGOs providers	Extension agents hired by NGOs with farmers paying fees		Extension agents hired by NGOs as a free service to farmers	
	Farmer-based organizations (FBOs)	Pubblicity funded contracts or subsidies to FBOs providers	Extension agents hired by FBOs, with farmers paying fees		Extension agents hired by NGOs and paid for bt FBOs	Extension agents hired by FBOs as a free service to farmers

Source: **Hess, C., Ethret, W., Hagmann, J., Birner, R., Neidhardt, R., Schmidt, U. & Braun, P.** 2007. *Rural Service Provision.* Reader. Version 09/2007. Eschborn, Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH.

TOOL 2.2: RECOMMENDATIONS FOR PRACTITIONERS IN DEVELOPING A PLURALISTIC SERVICE SYSTEM

Drawing from the experience with pilot and larger programmes for pluralistic extension systems, Davis and Heemskerk (2012) offer a number of recommendations for practitioners who are developing such systems. Practical, step-by-step recommendations include:

1. Sensitize and obtain agreement by consensus among actors at all levels on the need to strengthen interaction and learning between public and private service providers; to involve public and private service providers on the basis of comparative advantage; and to strengthen coordination at the local level between different service providers by enhancing downward accountability (to farmer organizations).
2. Make sure that an enabling environment is in place for pluralistic extension services to grow. Specifically, there must be a sectoral or local government policy supporting public–private sector interaction in service delivery.
3. Open up the service delivery system by introducing downward accountability mechanisms and performance contracts, among other mechanisms.
4. Make provisions for local authorities to coordinate and contract services locally and handle integrated budget management. For example, provisions may have to be made for local authorities (such as farmer groups) to acquire a legal identity.
5. Empower farmer groups to articulate and orient demand (for example, in planning and M&E).
6. Develop local capacity for small-scale service providers.
7. develop capacity to use new approaches based on participatory action learning, such as Farmer Field Schools, Farm Business Schools, and so forth.
8. Develop the capacity of local small-scale producers' as private service providers.
9. Develop, use and manage local performance contract and outsourcing mechanisms.
10. Develop local extension management capacity, including capacity in planning, M&E, and downward accountability and transparency.



EXERCISES

1. **What contributed to the emergence of a pluralistic advisory system in your country?**
2. **Are the services sufficient diverse to provide inclusive advisory services to farmers? What services are missing to respond to farmers' needs and demands in a comprehensive way?**
3. **How is the pluralistic service system governed? What multi-stakeholder platforms are available? What linkages and networking exist with stakeholders of the Agricultural Innovation System?**
4. **What are the mechanisms to ensure accountability towards farmers and their organizations?**
5. **Who is coordinating RAS at the various levels? What role do the FOs have?**

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MODULE 3: Demand-Driven Rural Advisory Systems and Services

By Blum, M.L., Cofini, F. and Sulaiman, V.R.

OBJECTIVES

1. to examine the rational and concepts of demand-driven Rural Advisory Services (RAS);
2. to understand how demand-led approaches differ from the conventional approaches;
3. to discuss some of the experiences with demand led RAS; and
4. to draw lessons on how to promote demand-drive in RAS.

INTRODUCTION

This module introduces the concept of demand-driven RAS. In many countries, a monolithic state-led extension service system focusing on technology transfer is gradually being replaced by a pluralistic service system where a variety of stakeholders provide advisory and other services to farmers and rural producers. With the shift towards pluralistic service systems, the role of farmers has also changed, and from being recipients of messages they become pro-active seekers for advice, knowledge, information, and training.

It is assumed that farmers, as users of the services, are capable of identifying and negotiating the services they need, so instead of being just beneficiaries, they are partners in development. In this new institutional and organizational setting, the voice of farmers and accountability of providers to them emerge as objectives (Christoplos, 2010). The main rationale behind the demand-driven RAS is that farmers are served better by RAS organizations in terms of relevance and quality of the services, if they can articulate and negotiate their demands and if they have a voice in the policy-making process, from design to evaluation and in programs formulation. In demand-driven RAS systems and services, organized groups of producers either as interest groups, producer organizations or cooperatives play an important role.

DEFINITIONS

Demand-driven RAS

"Demand" is defined as what people ask for, need and value so much that they are willing to invest their resources, such as time and money, in order to receive the service. In demand-driven rural advisory systems, services are driven by user demand, service providers are accountable to the users and users have a free choice of service providers" (Neuchâtel Initiative, 2007:2). Demand-driven rural services involve clients or users actively identifying which advisory and educational services they need. Hence, demand-led advisory systems need mechanisms through which users of services identify and articulate their demand in a systematic way. In contrast, traditional supply driven extension is defined by policies, research, or others. Demand-driven services require farmers to be empowered to take up their role in a pro-active way and service providers to have the capacity and flexibility to respond to these demands in an environment of increasing specialization and differentiation among farms.

DISCUSSION

The concept of demand-driven services implies making advisory services more responsive to the demands of producers, including women, youth and those who are poor and marginalized and by doing so ensuring relevant and inclusive services among the different categories of farmers (Sulaiman and Blum, 2016). This paradigm emphasizes the need to make service provision accountable to users and to promote transparency and empowerment as essential conditions for increasing the relevance and effectiveness of service provision. Thus, the focus on demand-drive is not limited to RAS, but applies to all types of services producers would need. There are, for instance, efforts to make health care, education, and community water services demand-driven (Birner and Anderson, 2007).

Demand-driven RAS entails a shift from

"a situation where farmers are recipients of extension campaigns planned for them by government, to where farmers demand the services they want from public or private, profit or non-profit service providers" (Lightfoot, 2003).

Demand-driven RAS captures the idea that the information, advice and other services offered by RAS professionals should be tailored in response to the expressed demands of the clients. This means services should not be just designed based on the needs perceived by various stakeholders (government, corporations, scientists, RAS professionals), but based on the demands by farmers and their organizations (Garforth, 2004).

A framework for promoting demand-driven RAS developed by Blum (2008) is given in Box 3.1.

BOX 3.1: Frameworks – Demand-driven advisory RAS

• promoting and organizing demand and demand side actors; • requires needs analysis and priority setting by farmers and their organizations; • representativity of POs; • facilitation of farmer empowerment processes by RAS; and • strengthening of smallholder farmer organizations.
• facilitating linkages to service providers (brokering role of advisors): reinforcing; • right of clients to choose their advisors; and • ensuring relevance and inclusiveness of services.

• enabling dialogue, negotiations and agreements with advisory services, by:
  • developing skills of farmer leaders to engage in negotiation and policy dialogue; and
  • contractualization of services.

• developing demand-side financing:
  • enabling producers to pay for services provided, through;
  • developing co-financing mechanisms, respecting financial capacities of clients;
  • access of poor and disadvantaged clients to advisory funds, vouchers and other subsidies;
  • including budget lines for advisory services into local PO-led projects and grassroots innovation funds; and
  • strengthening POs.

• ensuring high quality services from advisory service providers, i.e. supply-side actors,
• capacity development of RAS providers to enable them to respond to demand; • knowledge management; and • backstopping services for RAS providers.
• managing and organizing delivery of advisory services, i.e. and operational-side entities; • marketing of services – making services and their conditions known to producers; and • organizing continuing feedback and learning for adjusting services to changing producer demand and new challenges in agriculture.
• managing change within RAS through transformative learning; • evaluation of services by clients; • adjusting to client demands and assessments; and • learning from experience.

Source: Blum, M.L. (author), further elaborated based on Blum, 2008.

Demand drive goes beyond the mere use of participatory methods and entails wider institutional arrangements, organizational procedures and financing mechanisms for services. The shift to demand-driven RAS system implies changes at the demand (producer) level as well as at the supply (service) level. These changes can only be effective when financing mechanisms and collaboration are also changed to support demand drive.

Garforth (2004) raises a pertinent question here:

> *"To what extent should extension services be demand-led? The most demand-led situation is one where clients voluntarily pay the full cost of services they receive, whether as individuals or collectively as part of a group or association. In such cases, those providing services must respond to clients' requirements or*

they will soon be out of business. But where governments are contributing to the funding of the services, extension can never be fully demand-led? Governments invest in extension, because they expect it to contribute to the achievement of policy goals, ranging from stimulating the rural economy and enhancing food security, to protecting the environment and alleviating rural poverty. In such contexts, the challenge is to establish institutional arrangements that ensure clients receive advisory and other services that satisfy their own demands within parameters compatible with government policy."

Demand side: roles of producers and POs in achieving demand-led services

Demand-driven service systems are formed around user demand, and rural producers play an active role in:

- identifying which advisory and educational services are needed, and in setting priorities;
- looking for the most appropriate service provider for the services needed;
- negotiating services and concluding service contracts; and
- evaluating the services and providing feedback to RAS.

Given that smallholder farmers are often voiceless in the political arena, collective action and forms of producer organizations (POs) which gather farmer's needs and increase their bargaining power play a crucial role in demand-orientation of RAS (Bitzer *et al.,* 2016).

On the farmer and demand side, demand-led RAS would need to go along with (Blum, 2013):

- *Empowering smallholders:* This entailes to develop and negotiate their priorities and to be able to pay for their services through, for example, fund-raising within POs, subsidies to POs, vouchers for disadvantaged groups, grants/funds managed by POs and grassroots innovation funds.
- *Capacity development for POs* (associations, cooperatives, informal groups, etc.): This is required in order to enhance their managerial capacities, to reflect on their needs and priorities, to formulate their demands and negotiate for the services they want, and to evaluate their own activities as well as the services they receive.
- *Institutionalizing PO participation* in decision-making, planning, implementation and evaluation of RAS: This includes their full representation (not just a symbolic representation) in policies processes and decision-making boards and committees, procedures to evaluate services by farmers (e.g. through Small Message Service (SMS) in Information and Communication Technology (ICT)), mechanisms to develop demand and to link demand with qualified service providers, contracting of RAS based on demand.

POs (associations, cooperatives, informal groups) would need also to strengthen their management capacity and their internal accountability mechanisms, with a specific focus on overcoming problems of elite capture and social exclusion (Chen, 2016).

Supply side: roles of service providers to achieve demand-led services

In demand-driven advisory approaches, it is primarily the users that are setting the RAS agendas. They determine the content and operation of RAS programmes with which they are concerned. These approaches cover a range of transactions on the service side (supply side) (Neuchâtel Initiative, 2007):

- *Advisory services* need to respond to specific client requests for assistance, especially when the client must pay for services received. Thus, commercial RAS is strongly demand-driven, and programmes that require client financing or co-financing of services orient RAS to demand.
- *Facilitation approaches* involve RAS agents working closely with producers and their organizations to assist them in identifying their priority needs and possible actions, and then helping them to implement the identified activities and linking them with relevant support services (brokering role).
- *Participatory RAS methods* can represent a step towards demand drive. However, participation and demand-driven advisory approaches only approximate each other; their aims are not always identical.

The main challenges for providers of agricultural advisory services in demand-driven systems are (Blum, author):

On the producer side:

- facilitation of processes by producers and their organizations for identifying their priority demands, formulating demands and negotiating services;
- responding to the demands of producers and being accountable to them;
- ensuring that services are related to commercially interesting production opportunities; and
- ensuring that services are efficient enough that farmers derive a profit after paying for the cost of the services.

On the service side:

- changing mind-sets and attitudes from supply-driven to demand-led services;
- making services and service conditions known to the producers and their organizations;
- competing with other providers of similar services in the market in terms of price and quality and, at the same time, making a profit from providing the services; and
- creating partnerships and collaboration among service providers to respond to the multiple needs of producers in an inclusive manner.

In demand-led RAS, service providers are accountable to users, and in turn such accountability should ensure relevance and quality of services, whose criteria are defined by the users in the demand formulation process. RAS providers can strengthen accountability also through the recruitment of para-extensionists who have accountability requirements to the local village organizations, or by using financial arrangements such as vouchers and mobile phone payments, in order to allow farmers to choose the service provider.

RAS providers can support demand-orientation through different forms. They can empower small-scale producers. For example POs have the potential to enable famers to articulate and negotiate their priorities. This process of capacity development enables farmers to overcome their sense of powerlessness and lack of influence, and also helps farmers to understand how RAS functions and how they can use their resources to benefit from opportunities. Capacity development within service providers is needed to enable advisers to respond to new demands coming from farmers and it can be done though incorporating soft skills (e.g. gender, brokering, cultural norms, communication) in RAS curricula and in service training (Bitzer *et al.*, 2016).

Monitoring and Evaluation (M&E) is intrinsically linked to accountability and to the quality assurance of services. Producers should be included in the governance of RAS, i.e. among other roles and tasks to be actively involved in design, development of indicators and implementation of M&E procedures. M&E systems should be designed in a way that they look at RAS from the perspective of improved livelihoods, to include issues of rural development, going far beyond RAS' contribution to increasing agricultural yields. This means also considering dynamic and flexible indicators. RAS providers should ensure that client feedback is continuously received and taken into consideration when services are adjusted. China used the 3A indicators (Availability, Acceptance, Adoption) for farmer feedback, using a simple questionnaire answered through mobile phones. Based on this assessment, each responsible agent was eligible to receive a yearly bonus of up to CNY 3 000 to 5 000, depending on the region (Hu, Huang and Chen, 2012). If accountability is to be strengthened, information gathering tools need to be part of a wider capacity development strategy for service providers, which enable them to not only gather and analyse data but also to define indicators with the clients for such M&E system (FAO and KIT, 2016).

How to finance demand-led RAS

In order to achieve a demand-led service system, a change in financing mechanism is required. It is not sufficient to finance only the RAS system, there is a great need to provide financial support for the demand-side by empowering producers and their organizations, and enabling them to take up their roles and responsibilities in the advisory system and its services. Thus, strengthening of POs is an indispensable part of promoting a demand-led advisory system, and RAS can facilitate this process.

Smallholders and their POs need to be able to pay for their services. This changes their relationship with the advisory providers as it is them who command the services, thus resulting in increased relevance of services, with increased downward accountability from the service providers to the farmers. Demand-drive is established through different financing mechanisms (Chipeta and Blum, 2018) such as:

1. financial participation by the users;
   - direct payment for services by the users;
   - indirect payment through membership fees; and
   - indirect through production levies, taxes etc.
2. public funds channelled through the users or their organizations (e.g. vouchers, other subsidies) to pay for services;
3. service provision by producer owned organizations; and
4. a combination of payment by users and third party funds, e.g. co-financing mechanisms, depending on the financing capacity of farmers, their organizations, and expected farmer's benefits due to the advice provided.

A series of case studies are being developed by FAO on demand-side financing mechanisms, particularly direct financial support to POs, user payment of services and co-financing mechanisms. The studies show the link between the mechanisms through which services are financed, farmers' empowerment and more relevant, effective and sustainable services (Chipeta, 2015; Chipeta and Blum, 2018). The Evolution of the Danish advisory service system (see case study

in Module 5 on Financing Mechanisms) provides a successfully example of joint venture of public support and farmers' own contribution, where public funds were used to assist farmers organizations in developing their own national advisory service system. Users' payments complemented public funds and the former were gradually increased to achieve full user payment for the services (Chipeta, 2015).

Innovations in financing mechanisms for advisory services are further discussed in Module 5 on Financing Mechanisms.

The enabling environment and institutional anchorage of demand drive

Preconditions for a successful transition to a demand-driven RAS system are enabling policies and government commitment (Neuchâtel Initiative, 2007). In developing countries in which the public sector is still the main service provider, services have difficulties in terms of demand orientation. Decentralization can be an important strategy to make public agencies more responsive to local demands and to move decision-making closer to farmers. Public sector commitment is fundamental for making the transition towards a demand-led service system smooth and sustainable because this transition is a fundamental change and involves institutional and behavioural change as well new financing mechanisms. Governance of a demand-led system needs to provide space for articulation, decision making and action by the users and also to support strong management of change (also discussed in the module on extension management).

Demand-led systems need to institutionally anchor mechanisms for demand identification, articulation and negotiation as well as for financing mechanisms where farmers pay gradually for services. For example, in Tanzania, farmers have a say in resource allocation and services, whether public or private, through District-level farmer forums. Funding for research and extension has been decoupled from actual implementation, allowing control of resources by users (Maatman *et al.*, 2011). In India, the Agricultural Technology Management Agency (ATMA) model introduced as a pilot project with World Bank funding emphasizes decentralizing decision-making to the local level. The governing board of ATMA comprises the heads of various line departments and research units as well as stakeholders, including a cross section of farmers, women, disadvantaged groups and private sector firms within the District. The Farmer Advisory Block Technology Team (BTT) comprises personnel with extension functions from various departments. Under ATMA, grassroots-level extension is mainly implemented through the involvement of BTTs and Farmer Advisory Committees (FACs). The FAC is a body of farmer representatives (11 to 15 members, representing various enterprises and socio-economic strata). The BTT, in contrast, is a group of technical advisors operating at block level and representing agriculture and allied sectors. The FAC takes the lead in setting extension priorities at the block level, supports preparation of the extension action plan at this level and co-coordinates its implementation. FAC also facilitates formation of Farmer Interest groups (FIGs) at the block level and below.

In Senegal, extension reforms were claimed and driven by POs towards decentralised demand-led services with new structures, procedures and finance for farmer demand and negotiation of services. Public funding is provided to the National Agency for Agricultural and Rural Advisory Services (ANCAR), the main service provider, but also to ASPRODEP, a PO-owned non-profit organization. The fund in ASPRODEP is used for financing the demand process of POs at community level as well as projects proposed and carried out by POs. The services provided are based on contractual arrangements between the farmers/POs and the RAS providers. Most services are provided by ANCAR, or paid for by ANCAR in sub-contractual arrangements when ANCAR cannot provide the services requested (IPAR, 2018) (see case study 3.1 later in this Module).

Introducing or strengthening demand-driven RAS must include appropriate sustainability arrangements in its design. Drawing on experience of demand-led community services from Pakistan, Qamar (2011) observed that:

- Sustainability of a new concept like demand-driven RAS is assured only if a long-term programme rather than short-term projects are prepared, in line with government policy and fully integrated into development programmes institutionally, financially and operationally.
- Active involvement of government departments must be included from the very beginning in any programme designed for introducing demand-driven community services.
- In terms of forming Community Organizations, it is better to start with simple, informal groups of farmers and then gradually develop them over time into formal and more sophisticated organizations through capacity building and legalizing.

The promotion of demand-led services requires policies promoting institutional settings for demand drive (see various country-specific examples) and favouring pluralistic service provision, where services are provided by a multitude of service providers (public and private sector, NGOs, POs) offering a wide range of services. Pluralistic services allow users to choose among providers in order to receive services responding to their demands in terms of what services are provided, the quality of services and their costs. Different services offered can cover the different service needs of farmers (agricultural and marketing advice, financial and investment advice, etc.) in a more inclusive way.

Approaches and methods promoting demand drive

In conventional, top down approaches, farmers have been seen as passive recipients of knowledge and messages. Over the past decades, participatory approaches have been introduced in which producers are more and more in the driving seat of innovation and developmental change, being involved in the whole process from policy conception to evaluation. The emphasis of participatory approaches is on strengthening farmers' problem-solving capacities from the very beginning. Participatory approaches can represent a step towards creating demand-driven RAS and they can also improve the relevance of RAS topics and the learning process for farmers (Neuchâtel Initiative, 2007; Engel, 2011). However, participatory approaches and approaches promoting demand-driven RAS only approximate each other. If farmers need to become the drivers of RAS, they need to articulate and negotiate their demands. Farmer-to-farmer approaches for example have the potential to support the creation of demand-driven, effective and farmer-centered RAS services and to empower farmers. These approaches bring about fuller participation of farmers groups and strengthen their capacity to identify their needs, to set priorities and demand appropriate services, thus promoting the demand orientation of RAS (Christoplos, 2010).

The focus of a Farmer Field Schools (FFS) is on farmer empowerment through developing capabilities to make well informed decisions about farms and crops. Farmers are enabled to demand the types of technologies they want through a process that encourages and facilitates them to conduct their own research and to come up with their own solution. Indeed, from the very beginning of the FFS participants are first taught to prioritize and make decisions about what they want to learn. FFS have the potential to strengthen social capital and individual social skills of farmers, such as problem solving, confidence in public speaking and willingness to collaborate with others, all of which contribute to enhance farmers' voice (FAO, 2016; David and Cofini, 2018; Davis, K. 2009; Duveskog, 2013).

Farmer-to-farmer approaches engage farmers on a voluntary basis in providing advice and training to other peer farmers. Farmer advisers are usually individuals with little formal education, who receive initial training on technical themes, facilitation and communication skills. Through a process of experimentation, learning and practice, they increase their knowledge and become capable of sharing it with others in their role as RAS advisers. Farmer advisers are empowered to become change agents, promoting rural development processes and improving livelihood in their communities. Farmer advisers, by being farmer themselves, are very responsive to what farmers demand, their needs and constraints. Farmer advisers are also in a better position to respond to locally identified priorities of the communities and to determine, and change, the course of their development. In enhancing demand drive, farmer-to-farmer approaches have the potential to improve feedback from farmers to RAS advisers. Farmer-to-farmer approaches are also very suited for engaging with women, youth, and the poor, thus making their voices heard. (Selener et al, 1997; FAO and RELASER, 2015; Franzel *et al.*, 2015; David and Cofini, 2018).

Case studies

CASE 3.1: DECENTRALIZED DEMAND-LED PUBLIC SERVICES WITH STRUCTURES AND PROCEDURES FOR FARMER PARTICIPATION: THE CASE OF PSAOP, SENEGAL

The Agricultural Services and Farmer Organizations Support Programme (PSAOP) provides a unique case of reforms towards decentralized agricultural advisory services with structures and procedures for farmer participation in demand formulation and evaluation of the services. The system is mostly public funded.

The agricultural sector in Senegal is of great importance in the national economy. It contributes 17 percent of GDP and involves approximately 60 percent of the adult population. It is therefore the main driver of the economic as well as of the social development of the country. Development of the agricultural sector in Senegal has many challenges. The major constraint to development is a generally low capacity in the sector. The educational level of producers is very low, there are inadequate service providers with the necessary capacity, and capacity of governmental institutions is equally low. Other challenges are the weak market system and lack of value addition and processing of produce.

Producer organizations in Senegal have a long tradition in rural communities. In the 1990s they played a very important role in advocating the need for reforms towards greater farmer ownership and control. Since then, PSAOP has specifically addressed capacity development of POs by integrating a component to strengthen the demand side of agricultural advisory services.

The reforms have been in process since 1999 and were mainly implemented through the World Bank-funded programme PSAOP. The main drivers for reform were the national producer organizations through the National Council for Rural Concertation (CNCR), who pushed Government, FAO and the World Bank for reforms. The programme is hence the result of tripartite negotiations between the State, the Donors, and CNCR on behalf of the producer organizations. PSAOP promoted a new reform for an agricultural advisory service system by focusing on the development of demand-driven agricultural advisory services and capacity development of POs in order for farmers and their organizations to formulate their requests for advice and to contract a service provider of their choice.

PSAOP has had five components:

- support for research through the Senegalese Agricultural Research Institute (ISRA) and Institute of Food Technology (ITA);
- support for the National Rural and Agricultural Advisory Agency (ANCAR);
- the creation of the National Fund for Agricultural Research and Agrifood (FNRAA);
- support to POs for capacity development through the Senegalese Association for the Promotion of Small Development Projects (ASPRODEP); and
- restructuring and capacity development of human resources of the Ministry of Agriculture.

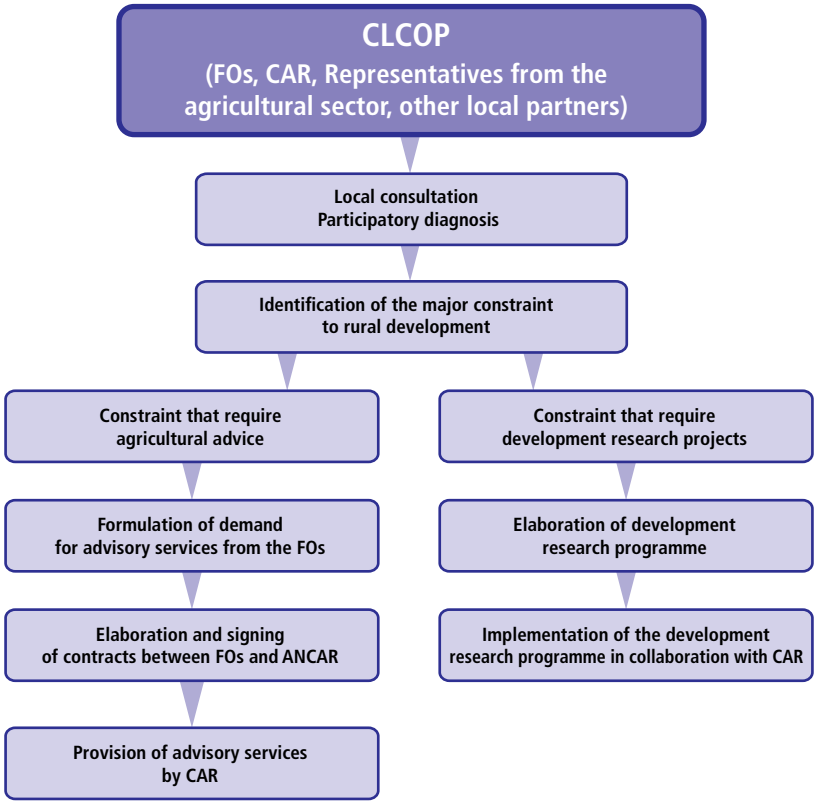
The involvement of the POs was very strong and as noted above, the Programme contained a specific component for strengthening POs and their engagement. This was implemented by the Senegalese Association for the Promotion of Small Development Projects (ASPRODEP). ASPRODEP was created by 29 POs and approved by the Government of Senegal in 1995. It provides organizational and technical capacity development, financial management and advisory support to POs. ASPRODEP manages funds made available by PSAOP for projects and services. At the local level, the implementation is based on The Local Consultation Framework of Producer Organizations (CLCOP). POs identify their priorities and prepare small projects such as training events, adaptive research projects or support for the adoption of various technical innovations. They submit project proposals to the CLCOP. The PO representatives then meet in CLCOP and select among the suggested projects those to be financed. When the CLCOP approves a project, a contract is signed between ASPRODEP and the PO submitting the project and the money is transferred to the account of the PO. The PO is then responsible for the implementation of the project, including selecting the required service providers from a list of providers approved by the Ministry of Agriculture.

The National Rural and Agricultural Advisory Agency (ANCAR) is an agency with multi-stakeholder governance, including Government, POs, private sector and local communities. However, the government has a majority of the overall seats in the Board of Directors. Originally, it was envisaged that the POs would become the main shareholders after a period of three years. Currently, the Government holds 51 percent of the capital, the POs 28 percent, the private sector 7 percent and the local communities 14 percent.

ANCAR is set up as parastatal agency that provides its RAS services through its decentralized structures at community and regional level. However, it also has some other functions, and links farmers with other service providers. Advisory services are provided through contractual arrangements with POs and ANCAR or between POs and other service providers based on the demand formulated by the POs. The services are integrated in the innovation system as the research institutions receive their funds based on how they respond to demands by stakeholders, including ANCAR and POs. The main objective of the services is to increase production, productivity and income for smallholder farmers.

Figure 3.1 illustrates the procedures for diagnosis of constraints, formulation of needs and demands and for negotiation and planning of services and the research programme.

FIGURE 3.1: The formulation and financing of demand-driven advisory services through ANCAR



Source: BA, C.O. *et al.,* 2018.

The demand formulation process for RAS is facilitated by ANCAR, while the process of formulating demands for projects is facilitated by an independent partner, the Agency of Technical Execution (AET), contracted by ASPRODEP. When the demand is formulated and contracts for projects are approved, the POs have in principle a free choice of service providers. However, the services by ANCAR/CAR are free of charge.

ANCAR operates in 144 rural communities, where 105 agricultural advisers assist the POs in formulation and implementation of agricultural development activities. The services in this framework have so far[2] reached 1 460 POs with 24 000 producers as direct beneficiaries and nearly 54,000 as indirect beneficiaries. The empowerment aspects lie in the governance involving the POs in decision making, fund management and formulation of service needs/demands, selection of service providers, contractualization of services and in evaluation of services.

Source

BA, C.O., Faye, A. & Diagne, D. 2018. *Les mécanismes financiers relatifs aux services de conseil agricole pilotés par la demande - De la vulgarisation à l'appui-conseil au Sénégal.* Rome, FAO. (also available at: http://www.fao.org/3/CA0900FR/ca0900fr.pdf).

2 According to Evaluation Reports of PSAOP phases I and II, 2011

CASE 3.2: PARTICIPATORY PROCESS APPROACH FOR DEVELOPING A PLURALISTIC, DEMAND-LED AND MARKET-ORIENTED ADVISORY SYSTEM IN NIGER

Niger's agricultural extension system has declined following the end of the "Training and Visit" Programme funded by the World Bank up to 1998. The review and implementation of an integrated advisory system for rural development was identified as a priority area for public action within the framework of the Rural Development Strategy (Stratégie de Développement Rural, 2006).In response, the Government of Niger requested FAO to assist in this task in collaboration with a national steering committee set up for this purpose.

The core process of reviewing the extension system has three parts:

- analysis and assessment of the present extension system;
- designing a new advisory system; and
- the development of a proposal for implementation.

In Niger, these three phases and the methodology were approved by the National Steering Committee (NSC), which was composed of representatives of all stakeholders (including POs, NGOs and donors). This allowed more effective planning and avoided questioning of next steps. The reports of each phase were reviewed by all stakeholders and approved by the NSC, before continuing the process.

Along with this, a parallel process of strengthening POs was introduced to enable them to understand their roles and responsibilities in an advisory system and to contribute fully to the stakeholder process and the future demand-led advisory system. Consultants from the public sector, NGOs and POs were trained to gather the required data and statistics, to facilitate the core process and to apply the tools developed. FAO supported the national consultants in developing assessment tools, including questionnaires and interview guidelines, to appraise the primary organizational goals, functions, resources, methodologies and linkages of all stakeholders (public and non-public). This core process involved intensive stakeholder consultations and. in particular, regional workshops with farmers for the analysis and gathering of new elements required for the new system. However, the assessment of farmer needs with respect to future advisory services was based on consultation with farmers, but not on a thorough participatory needs assessment. This weakness was partly compensated by using data of the agricultural census.

While reflecting on the process adopted, Blum and Mbaye (2009) noted that the assessment and reorientation of the extension system should be done in the larger framework of agricultural services (research, education and training, RAS) and their institutions. A process is required in which the various stakeholders are involved from the very beginning, meaning from the elaboration of the Terms of References (ToR) of the review process. This allows everybody to express their views and to orient the advisory system based on the capacities in the country and on lessons learned over the past decade. The methodological support by FAO to the process was critical in re-orienting the extension system towards pluralism, demand-led and market-oriented services. In addition, the involvement of the farmer's organizations and support to them in the process was crucial in order to translate the idea of a demand-led system into concrete mechanisms.

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CASE 3.3: DEMAND-DRIVEN EXTENSION APPROACH IN PAKISTAN

This case study was commissioned by FAO in 2009 to consolidate the accomplishments and lessons learned of a technical cooperation project "Strengthening the extension capacities for community demand-driven planning for natural resources management" in the Azad Jammu and Kashmir region in Pakistan from 2003 to 2005. Under the project, a systematic grassroots community-based planning mechanism was introduced and institutionalized, as a part of a demand-driven extension approach, to enable rural communities to demand and access extension and other services.

The essential components of the demand-driven extension approach implemented were:

- a grassroots, community-based process for preparing plans for demanding extension and other services;
- community Organizations (COs) of rural men and women;
- gender-sensitive training modules on key topics related to grassroots planning;
- audio-visual aids to facilitate the use of the training modules;
- institutional mechanism to facilitate, support and coordinate the process of grassroots planning by COs;
- capacity building, training and/or orientation of the stakeholders in grassroots planning, using the training modules and audio-visual aids;
- demand-for-services plans;
- services' delivery plans; and
- participatory monitoring and impact assessment of the delivered services.

Out of this experience, an illustrated guide and eight training modules were elaborated on how to establish grassroots planning mechanisms for rural communities for demanding multidisciplinary extension services from public and private institutions.

The main parameters required for successful implementation were:

- political will and active policy-level support to encourage the involvement of rural communities in decision-making on matters related to their welfare and development, and the provision of adequate human, physical and financial resources;
- availability of public funds at District level to finance the advisory services demanded and the respective training;
- advisors of agricultural extension services and, if available, of other services that are active in rural development activities at grassroots level;
- village-level groups of men and women, along with their informal leaders;
- multi-stakeholder District Development Committees comprising representatives of government line departments, relevant government institutions, NGOs, private sector, and rural community groups of men and women;
- a clear procedure of grassroots planning from the organization of village-level groups to the delivery of extension and other technical services to the rural communities;
- technically sound training modules and materials on those specific conceptual and technical topics most relevant to the process of grassroots planning;
- computer and audio-visual equipment, which are location-specific;
- carefully identified target trainee groups comprising stakeholders who are most relevant to the grassroots planning and decision-making;
- well prepared detailed training plan indicating all relevant information; and
- an established training institution or group of professional trainers willing and able to engage in capacity development of various stakeholders involved in grassroots planning.

Source

Extract from: **Qamar, K.** 2011. *Introducing demand-driven extension approaches in a Traditional region: a case study from Pakistan*. Rome, FAO. (also available at: http://www.fao.org/3/a-i2354e.pdf).

SUMMARY

In re-orienting RAS towards a demand-driven system, different mind sets, organizational and financing procedures, skills and competences need to be developed on both the demand and the supply side of services.

The farmers and their organizations on the demand side will need to change by taking up roles and responsibilities in shaping policies and RAS systems of their country. They will have to be able to:

- self-organize, lobby, advocate and negotiate their interests;
- have visionary and accountable leadership;
- learn and experiment;
- evaluate services received; and
- have entrepreneurial abilities.

They should be ready to contribute to the payment of services, depending on their financial capacities, but also claim for good quality services; hence request value for money spent on RAS services.

The service providers on the supply side will have to be able to:

- respond to users' demands for services and challenges in the agricultural sector, such as climate change;
- change top-down technology transfer to provide tailor-made advice and technologies;
- facilitate linkages among stakeholders for networking and partnership;
- action learning and experimentation;
- enhancing of farmer decision-making capacity;
- brokering information and knowledge exchange; as well as
- supporting empowerment of POs from the local up to the national level.

This requires, on the one hand, advisers to think systemically, develop and work in teams; and on the other hand, RAS providers to enhance RAS enterprise development, including marketing of services, developing contractual arrangements with farmers and their organizations, and develop and manage partnerships with other actors of RAS and the agricultural innovation system (AIS).

Demand-driven reforms need to promote a greater involvement of farmers and other users in policy formulation, programme priority setting and RAS development at the national and local levels. Participatory methods and approaches that promote demand drive like Farmer-to-Farmer approaches, can contribute to make RAS services more responsive to the real needs or demands and priorities of farmers. Operationalizing demand-led services at system level would require structural adjustments, increased capacity for demand formulation and articulation as well as more demand-side financing mechanisms (pull mechanisms) and respective capacity development at all levels. External facilitation of these organizational change processes would help to institutionally anchor the required changes in a sustainable manner. Investing in these structural changes and approaches would definitely enhance the credibility of RAS and develop a much wider constituency of support.

Strategies in the public sector to make services more responsive to farmers' demands include decentralization of agencies, their increased autonomy, systematic approaches to identification and articulation of demand, contracting of RAS services and involving farmers in awarding the service contracts. The use of diverse funding mechanisms such as cost recovery or co-financing mechanisms to encourage farmers to express their demands, and the use of new management practices emphasizing responsiveness to clients and using participatory RAS methods are of great importance to achieve more demand-led RAS. Also a powerful way for enhancing demand led advisory services would be to enable smallholder and their organizations, e.g. through improved access to markets, to pay for the services they want. Transparency on rural advisory services, their quality and costs/prices would clearly enhance the ability of clients to select their advisory services.

While developing a pluralistic, demand-led and market-oriented advisory system, there is a need to consider the specificities of each country regarding:

- the level of institutional and organizational capacities of the POs, but also of other innovation stakeholders;
- the professionalism of public and private sector, NGOs and POs in providing agricultural and rural services;
- the experiences and lessons learned from past policies and development programmes; and
- the economic and social potentials of the country.

A crucial factor in enhancing change towards a pluralistic and demand-led system is certainly the political will of Government in involving POs and other stakeholders in RAS policy formulation and implementation.

Tools

TOOL 3.1: PROCEDURAL STEPS FROM RURAL COMMUNITY GROUPS' ORGANIZATION TO THE DELIVERY OF SERVICES DEMANDED BY THE GROUPS: A CHECK LIST

The following steps need to be followed in logical sequence:

- identification of organization of rural community groups in the villages if there are no groups at present;
- identification of public (government) and non-public (including NGOs and private companies, individual experts, farmers associations, etc.) institutions in each district, that can offer extension services in various technical disciplines to the rural communities;
- creation of a District Development Committee in each District, comprising the men and women representatives of rural communities, public departments and non-public institutions;
- preparation of training modules and audio-visual aids on the topics of:
  - introduction to natural resources and their management (including agriculture, forestry, horticulture, water-management, livestock, fisheries, forestry);
  - grassroots preparation of multi-disciplinary demand-for-services plans;
  - how agricultural extension staff should facilitate the process of grassroots planning by the rural community groups;
- how agricultural extension staff should coordinate among various line departments and non-public institutions;
  - how should line departments and non-public institutions prepare action plans to deliver services to the communities, based on their demand-for-services plans;
  - how outsourcing contracts should be prepared by government departments to be signed with non-public agencies for delivery of specific services to rural communities;
  - how the communities should monitor the quality and progress of the services being delivered by public- and non-public agencies; and
  - how should rural communities assess the impact of the services delivered.
- explanation about natural resources management, including agriculture, horticulture, water-management, livestock, fisheries and forestry by trained rural community leaders to rural men and women groups in their respective villages, based on the training received earlier;
- provision of continuous technical support to agricultural extension staff in the field by the national, district or tehsil-level subject-matter specialists, covering agriculture, horticulture, water-management, livestock, and fisheries;
- provision of training in the above mentioned subjects to the representatives of rural community groups, public departments, and non-public institutions;
- provision of assistance by the trained agricultural extension staff to the rural community groups through facilitating of the process of grassroots planning;
- preparation of village-level multi-disciplinary demand-for-services plans by the male and female rural community groups and their eventual merger to produce cluster demand-for services plans;
- integration of cluster demand-for-services plans into district development plans by the district officials, in collaboration with the District Development Committee;
- decision by relevant government officials regarding which services to the communities will be provided by the line departments and which by the non-public agencies through outsourcing contract arrangements;
- preparation and processing of outsourcing contracts with non-public agencies by relevant government officials for the delivery of services;
- preparation of detailed plans by the public and non-public institutions for the delivery of services to the communities;
- coordination of the preparation of plans covering several disciplines, by the trained extension staff, for delivery of services to the rural communities; and
- delivery of services, and monitoring and impact assessment by the rural communities and relevant public and private service-providers.

Source

Extract from: **Kalim Qamar.** 2011. *Introducing demand driven extension approaches in a traditional region: a case study from Pakistan*. Rome, FAO. (also available at: http://www.fao.org/3/a-i2354e.pdf).

TOOL 3.2: FIVE STEPS FOR DEVELOPING DEMAND-DRIVEN ADVISORY SERVICES

Development of demand-driven advisory services consists in principle of five steps:

1. formulation of demand among farmers;
2. dialogue and negotiations with service providers;
3. preparation of services;
4. provision of services; and
5. evaluation of the services received;

The methodologies involved in supporting the process connected to demand may vary according to the situation, but normally involve the following procedures:

Formulation of demand

- identification of production and market opportunities;
- analyses of the opportunities, involving assessment of economic viability and risks;
- prioritization on the basis of these analyses;
- identification of the advisory services required to realize the opportunities; and
- definition of criteria for desired content and quality of the required advisory services.

Dialogue and negotiations with service providers

The dialogue and negotiations ensure that both users and service providers are fully aware of the kind of services to be delivered, and at what quality and price.

There are three steps in this process:

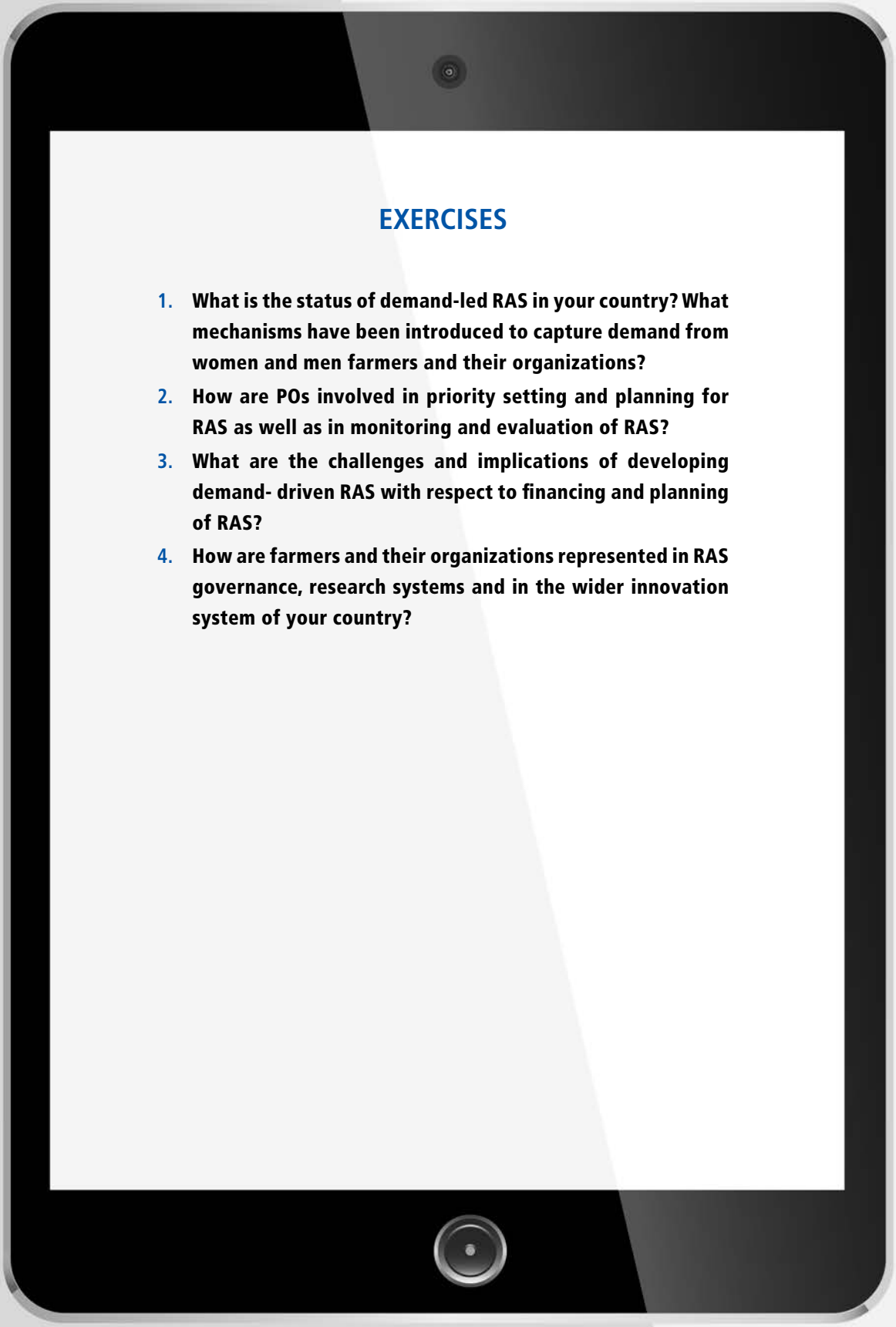
- linking to relevant service providers;
- dialogue with service providers about what is and hat is not available; and
- negotiations and agreements of conditions for delivery, addressing:
  - content;
  - quality;
  - time; and
  - price.

Evaluation of the services received

The advisory services should be evaluated by those who use them according to the criteria defined under the formulation of demand. The most obvious form of evaluation is the farmers' decisions whether or not to use the same advisor in the future. Other more formal evaluation procedures may be required in large, publicly financed programmes.

Source

Extract from: **Neuchâtel Initiative.** 2007. *Demand-driven agricultural advisory services*. Lindau, Switzerland.



EXERCISES

1. **What is the status of demand-led RAS in your country? What mechanisms have been introduced to capture demand from women and men farmers and their organizations?**
2. **How are POs involved in priority setting and planning for RAS as well as in monitoring and evaluation of RAS?**
3. **What are the challenges and implications of developing demand- driven RAS with respect to financing and planning of RAS?**
4. **How are farmers and their organizations represented in RAS governance, research systems and in the wider innovation system of your country?**

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MODULE 4: Linking Farmers to Markets

By Blum, M.L., Sulaiman, V.R. and Cofini, F.

OBJECTIVES

1. to discuss the contemporary issue of linking farmers to markets;
2. to examine the role of market-oriented agricultural advisory services;
3. to discuss the role of producer organizations, agri-business, private sector and NGOs in linking farmers to markets; and
4. to illustrate the importance of value chain orientation, and use of ICTs.

INTRODUCTION

Population growth, urbanization, rising incomes, globalization and market liberalization are changing agriculture, stimulating new demands and changing food production, procurement and distribution. While these changes, on the one hand, are creating new and more remunerative markets (e.g. high value products), opening new opportunities for smallholders to produce food and other products; on the other hand, they are also creating challenges and risks (World Bank, 2008; Wongtschowski *et al.*, 2013).

Agricultural advisory services aim at enhancing the incomes of rural producers, improve their livelihood, by responding to their needs and demands and enabling them to be more competitive on the market (Ferris *et al.*, 2014; Christoplos, 2010; Swanson and Rajalahti, 2010). Increased productivity has traditionally been the objective of agricultural extension. There is now an increasing understanding that production support activities must be linked to market demand and that production activities must be looked at within the context of the whole supply chain and the linkages, or business relations, within that chain.

Thus concepts such as "Linking producers to markets" or "Linking farmers with markets" are very much in vogue (Shepherd, 2007). This module deals with market-oriented strategies for rural advisory systems and services in support of smallholders and their market integration and of producer organizations to support and scale up marketing activities.

DEFINITIONS

Markets

Markets are commonly understood as the interaction of demand and supply. They are a set of arrangements by which buyers and sellers are in contact to exchange goods or services (Springfield Centre, 2015: 56).

Linking farmers to markets

Linking farmers to markets can embrace a whole range of activities, from the very small and localized to the very large and globalized. Types of linkages can be categorized in various ways. It could be: farmer to domestic trader, farmer to retailer, linkages through leading farmers, linkages through co-operatives, farmer or their organizations to agro-processor; farmer or their organizations to exporter and contract farming (Shepherd, 2007). Linkages can be both informal and based on trust and/or formal through contracts. The concept does, however, assume the development of long-term business relationships rather than support for ad hoc sales.

Sustainable value chains

> *"Sustainable value chains are the full range of farms and firms and their successive coordinated value-adding activities that produce particular raw agricultural materials and transform them into particular food products that are sold to final consumers and disposed of after use, in a manner that is profitable throughout, has broad-based benefits for society and does not permanently deplete natural resources. The value-chain stakeholders are all those who have a stake in the performance of the value chain, including farmers, traders, processors, for-profit and not-for-profit service providers, consumers and the government"* (FAO, 2014c).

By joining together, the stakeholders increase competitiveness and are better able to maintain competitiveness through innovation. Value chain development is an approach that seeks to build relationships of active support among chain actors.

Market orientation/market-oriented farming

Market orientation means both a business approach/philosophy that focuses on identifying and meeting the stated or hidden needs or wants of customers, and relates to value chain development as a whole (Christoplos, 2010). Market-oriented farming is farming based on market demand and uses improved production technologies, commercial inputs and provides consistent quantity and quality of farm produce for sale.

Market-oriented agricultural advisory services (MOAAS)

Market-oriented Agricultural Advisory Services (MOAAS) include

> *"a highly diverse range of services from technical know-how, understanding of markets, their requirements and business management, to organizational development, and facilitation of change in value chains. This illustrates the diversity of advisory service needs for creating increased competitiveness among the diverse actors in value chains"* (Chipeta, Christoplos and Katz, 2008:5).

These services might also be called agricultural/rural business development services or value-chain-development advisory services (Wongtschowski *et al.*, 2013).

Contract farming

Eaton and Shepherd (2001:120) define contract farming as

> *"an agreement between farmers and processing and/or marketing firms for the production and supply of agricultural products under forward agreements, frequently at predetermined prices"*

Contracts will typically specify various details regarding the terms of trade (e.g. prices, quantities, delivery dates, payment terms), input provision, and production specifications (i.e. the use of particular production practices).

DISCUSSION

Linking farmers to markets

During the last two decades there has been a transformation in the way food production, processing and distribution systems are organized. Several factors have contributed to this trend. These include:

- increasing income and changing consumption pattern reflected in increasing demand for high value agricultural products (fruits and vegetable, animal products) and convenience foods such as frozen, pre-cut, pre-cooked and ready-to-eat items;
- increasing urbanization leading to expansion in organized retailing in food and groceries;

- tightening of food safety and quality requirements; and
- emergence of supply chain integration in the agri-business sector.

Farmers are under pressure to produce what is required by the consumers and buyers rather than relying on markets to absorb what they produce. However, they are confronted with many challenges. Smallholder farmers, who are predominant in much of sub-Saharan Africa, Latin America and South Asia, generally lack technical knowledge to meet the stringent quality standards of markets. Moreover, they often do not have the relevant knowledge about the value chain, or market information related to demand, quality and prices. Many, therefore, operate largely in poorly developed local markets where the weighing systems are unreliable and the commission agents charge high brokerage. Thus, producers receive only a fraction of what the final consumer pay for their product.

There is an increasing body of evidence to show that farmers can gain a lot, if they could be organized and their capacities enhanced to understand markets and plan their production accordingly (ADB, 2005; FAO, 2009; Singh and Swanson, 2005; Wongtschowski *et al.*, 2013). RAS can and should support farmers in this. For many RAS advisers, however, business management is often a challenge, as their experience and practice have largely been focused on agricultural production and technology transfer. To provide appropriate support, it is critical that RAS advisers understand some of the concepts and practices of farm business management (Kahan, 2013).

Market-oriented advisory services

Advisory services related to markets and prices have traditionally had low priority, particularly with public services focused on production aspects and where production was for home consumption or for limited sale at local and nearby markets. Given the current changes in agricultural economies and increasing market orientation, RAS have to support producers, their organizations and rural entrepreneurs, helping them to respond better to the evolving situation. Advisors need to be in a position to advise farmers not only on how to grow crops but also how to market them, and if required to adjust production to the markets..

Marketing extension does not mean deciding for farmers what they should do or what products to sell, nor any active participation in distribution, marketing and sales (Dixie, 2007). It rather refers to: *marketing education* (creating a better understanding of the process, the market and its demands, prices and requirements in terms of products and service); c*o-ordination and business linkages* (promoting networks between buyers and sellers, facilitating the startup process of new trading relationships).

Swanson and Rajalahti, (2010) state that

> *"in making the transition from a technology-driven extension system to one that is more market driven, extension priorities and procedures will change dramatically. Economic factors will become central to the programme planning process. The first operational principle is that if there isn't a market for a particular crop or product, then farmers should not be encouraged to produce that crop or product. In developing a market-driven RAS system, one of the pre-requisite is for both farmers and field RAS staff to have better access to current and reliable market information".*

Efforts to collect and disseminate market information (arrivals, stocks, prices) for various commodities in different markets have been initiated in several countries. Expansion of ICT infrastructure, especially mobile telephones, computers and internet access, during the last decade has made access to market information much easier and opened up market opportunities internationally. However, the link between availability of market price information and better price realization is not that direct (Lehr, 2007; Mittal, Gandhi and Tripathi, 2010).

> *"While ICTs, and specifically Mobile 2.0-based agricultural applications, do have a role to play in reducing transaction cost s for smallholder farmers to engage more effectively in agricultural markets, other constraints such as access to credit and relevant infrastructure (from transport to storage) need to be met" (Lokanathan and de Silva, 2010).*

Market-oriented RAS refers to the whole value chain, not only farmers, and must respond to the needs and demands of the diverse actors, by providing market-oriented advisory services and contributing to increased competitiveness, developing the rural economy and improving rural livelihoods (Christoplos, 2010; Wongtschowski *et al.*, 2013).

According to Chipeta, Christoplos and Katz (2008), MOAAS may include:

- technical know-how to improve quality, quantity and timing of production etc. (such as selection of products, varieties and animal breeds suitable for the market, good agricultural practices including soil fertility management, plant protection and water management);

- know-how related to economics, business management and markets (not only enterprise analysis, marketing, market analysis, business planning and record keeping, but also advice on legal, regulatory and certification issues);
- know-how to enable value chain actors to meet market or value chain quality requirements (such as post-harvest handling and storage, processing and packing technology, meeting food safety and agricultural practices standards, or consumer rights);
- capacity development for strengthening producers and other value chain actor groups (such as financial management, leadership, situation analysis and action planning, negotiation skills, participatory innovation development);
- facilitating and supporting changes in value chain management (such as coordination of production and establishment of collective marketing, including negotiation of contracts, legal aspects, brand development, and linking producers to supermarket supply chains of fair trade, organic and other specialized markets, with access to certification and accreditation schemes); and
- facilitating linkages among different actors along value chains (such as convening multi-stakeholder forums to understand market trends and drivers, to foster better mutual understanding and trust, to identify bottlenecks along value chains and devise solutions, and to assist traders and processors to link up with reliable producers).

These new sets of services might be provided by different service providers, including:

- producers and commodity organizations;
- processing and trading enterprises;
- independent private service enterprises;
- input suppliers;
- village advisers;
- public advisory service providers; and
- mixed public-private-civil society systems.

Market-oriented RAS need therefore to pay attention to ensuring that both public and private sector service providers have access to adequate and up-to-date back-up services.

Compared with traditional extension, market-oriented RAS involves new tasks and the use of new tools, for which RAS staff are traditionally not well-prepared, because they have generally not been educated and trained for it (Table 4.1). This involves activities like value-chain mapping and analyses, facilitating stakeholder linkages and collaboration, developing and implementing quality standards (e.g. European Good Agricultural Practices or EuroGAP, eco or fair-trade certification), negotiating contracts and quality standards with processors, and finding solutions for logistical problems, including storing, packaging and transporting of produce (AFAAS, 2011).

TABLE 4.1: Comparison of production-oriented services versus market-oriented agricultural advisory services

SERVICES BELOW COMPARISON	PRODUCTION-ORIENTED SERVICES	MARKET-ORIENTED AGRICULTURAL ADVISORY SERVICES
Target group	**Producers**	**All stakeholders in value chain**
Knowledge domain	Farm-related technical production topics	Sector-related economics, trade, marketing, processing, and value-chain management
Skills	Technical competence	Facilitation of collaboration, trust building, communication, finances, group development
Attitude	Market guided by distrust Market as threat	Trust building: Market as opportunity
Production system	Low-value produce	High-value produce
Need for support service	Low	High
Need for supporting infrastructure	Low	High
Need for supporting policy	Low	High

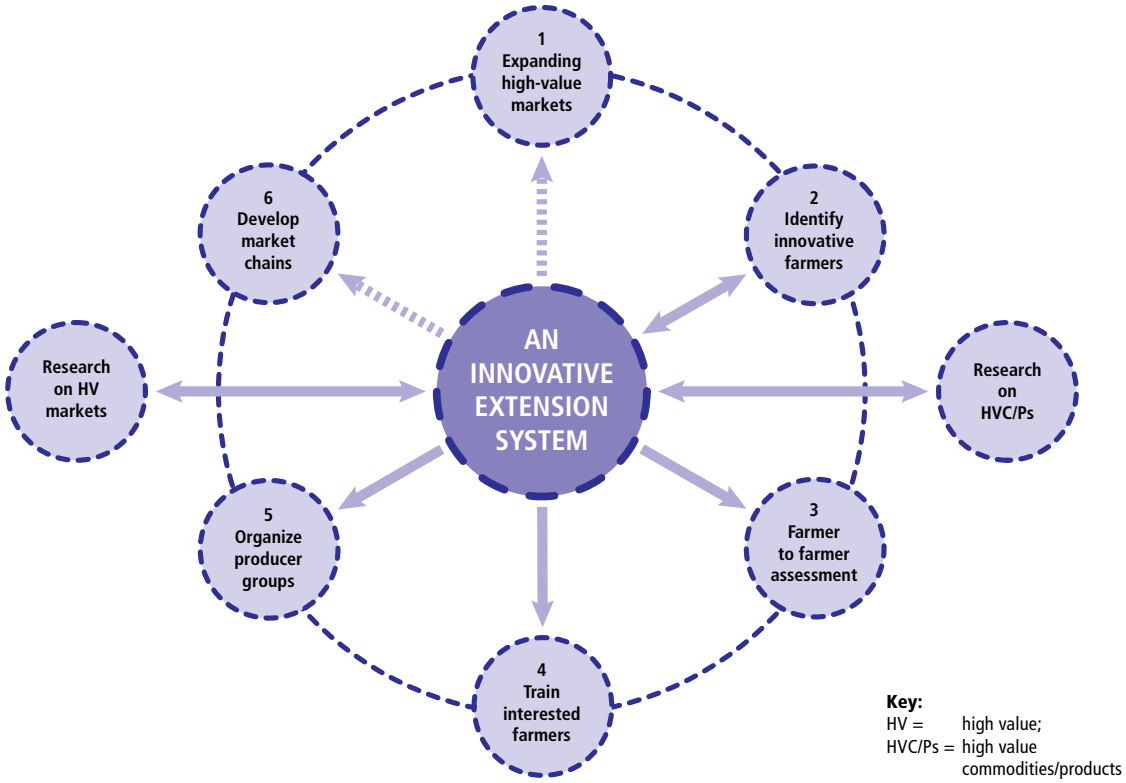
Source: AFAAS, 2011.

Swanson and Rajalahti, (2010: 20) observed that

> *"Under this emerging new extension approach, it is the growing market for high-value products – not research – that controls specific innovations that can be successfully taken up by different farm households within local communities to improve their farm household income. In the process, each farm household must consider its own resources (e.g., land, labour, access to water)*

and access to different markets (e.g., transportation infrastructure; distance to different local, regional, and even global markets). Then, it must determine which enterprises would be most feasible and whether appropriate technologies are easily available for them to successfully produce and market these different crops, livestock, fisheries, or other agricultural products".

FIGURE 4.1: Illustration of key functions of an innovative market-driven extension approach during periods of economic growth and changing consumer demand, especially for high value products



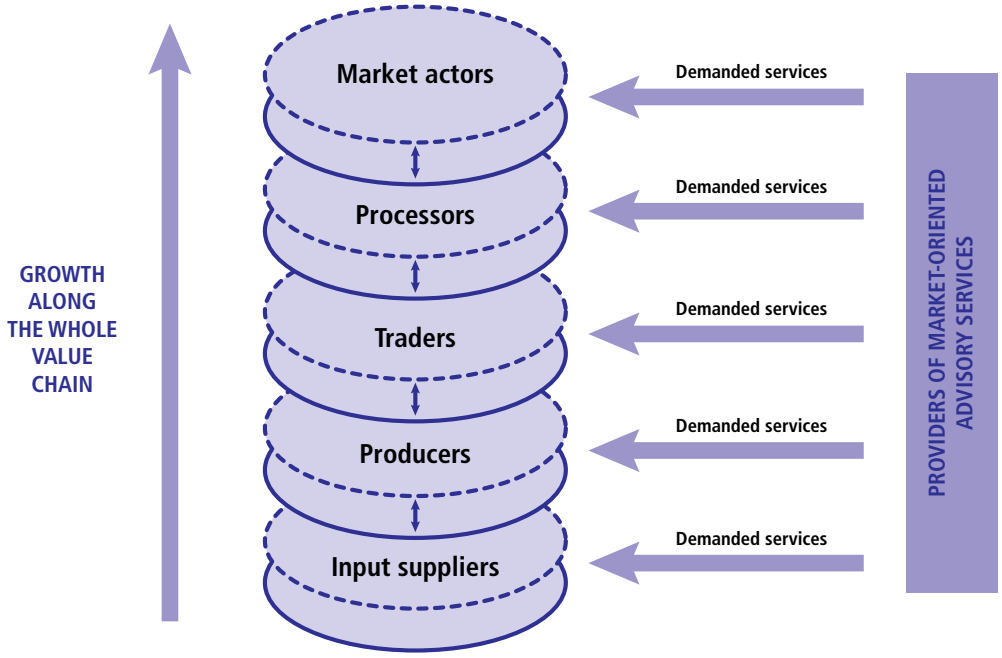
Source: Swanson and Rajalahti, 2010.

Value chain orientation

Market orientation demands a value chain orientation: which in turn implies that RAS must meet the needs of a range of actors - not just farmers (Christoplos, 2010). In effect, market-oriented RAS is about making sure that a range of actors are able to collaborate with one another. A genuine value-chain approach implies the need for facilitation and brokerage efforts to address constraints to and bottlenecks in market access. Merely helping farmers may not provide much support, if the rest of the market chain is dysfunctional. It would entail a greater involvement of RAS in addressing market-chain constraints and bottlenecks by increasing collaboration among actors, facilitating change, and acting as coach and broker for the whole value chain. A MOAAS involves a process of capacity development that enable farmers to be more competitive and be able to benefit from future market opportunities. The services provided include technical know-how, understanding of markets and their requirements, business management, organizational development, and facilitation of change in value chains (Chipeta, Christoplos and Katz, 2008).

> *"Much effort has been made over the past decade to develop more effective market-orientation within advisory services, often in the form of pilot projects. Many such projects are more "marketing-oriented" (consisting of direct support to bring products to markets) rather than "market-oriented" (developing the capacities of value chain actors to deal with their market themselves). Good market-oriented RAS requires looking beyond the immediate market opportunities to focus more on helping farmers prepare to compete in the markets of the future"* (Christoplos, 2010).

FIGURE 4.2: A value-chain approach to advisory services



Source: Chipeta, Christoplos and Katz, 2008.

For instance, in Nepal, the International Development Enterprise (IDE) has used the Participatory Market Chain Approach (PMCA) to strengthen the vegetable value chain and connect smallholder farmers to larger markets. The implementation of the PMCA process is helping to break down misconceptions that stakeholders had about each other, particularly the view that traders were exploiting farmers (Reddy Vamsidhar, Hall and Sulaiman, 2011). It has also increased confidence and trust among collection centres management, farmers and traders (See case study).

While strengthening the existing marketing chain is the best option in certain cases (as discussed above), developing an alternative market chain becomes necessary in other cases. For instance, in India, the National Dairy Development Board (NDDB) had to support dairy co-operatives in setting up a completely new market chain for milk, through producer cooperatives, while it decided to upgrade the dairy sector, starting in the 1960s, as the existing market chain for milk was totally unorganized, inefficient, fully controlled by the milk vendors and exploitative. However, even after four decades of strengthening cooperatives, an estimated 77 percent of the milk marketed in India, reaches the consumer unprocessed, through the traditional milk marketing channels. Raghunathan, Joseph and Kulkarni (2011) highlighted the threats and hazards in terms of health for consumers and income for producers associated with the traditional milk marketing channels, and stressed the importance of capacity development for the milk chain actors in order to be able to secure supply of clean milk.

Diversification towards new products and new markets can generate significant benefits but will usually entail additional costs and risks. Farmers may want to develop a gradual diversification strategy that does not expose them to unacceptable levels of investment and risk. The investment needs and the risks associated with a diversification process will both tend to increase as one moves from Option 1 to Option 4 (Table 4.2). Advisory services can greatly support farmers in assessing the cost and benefits of investments and the risks involved in new markets and new products, so that farmers can make informed decisions.

TABLE 4.2: Investment needs and risks associated with diversification

	EXISTING PRODUCTS	NEW PRODUCTS
Existing markets	1. Market penetration strategy (low investment & risk)	3. Product development strategy
New Markets	2. Market development strategy	4. Diversification strategy (highest investment & risk)

Source: Wandschneider and Yen, 2007

Although most evidence derives from project-based experiences, thus leaving open the question of what can be expected post-project. Some positive examples come from ensuring sustainability and scaling up of commodity chain initiatives:

- Based on experiences from 11 commodity projects spread over Asia and Africa, KIT (2011) lists the following lessons for ensuring their sustainability and scaling up It is important to *plan scaling* up from the start, not as an afterthought. Often it is only near the end that project partners start thinking about the post-project scenario. But efforts to ensure multiplier effects are likely to be effective only if they have been designed in right from the beginning.
- Overprotection and over-investment in pilot initiatives should be avoided. Pilot initiatives need to evolve in realistic situations to allow for later scaling up. Several strategies exist to encourage post-project effectiveness.
- Cofunding is important for long-term take up by different partners. Once project partners contribute themselves, they most probably expect to benefit from the activities.
- Use loans, not grants, to finance buildings and equipment. Loans generally provide more incentive than grants. Providing free facilities may distort the market competitiveness and affect the ownership of the users. Grants are recommended only when credit is not an option.
- Institutionalizing activities – ensuring that organizations adopt them up so that they become standard practice – is the most important strategy to ensure continuing post-project impact. The private sector is a sometimes overlooked partner in this regard. Communication of success supports ownership and institutionalization.

Importance of organizing smallholder farmers

Smallholder farmers often lack access to capital, information, technologies and relevant infrastructure, and so do not benefit from opportunities offered by high value agricultural markets. There is a need to strengthen institutional mechanisms to improve smallholder farmers' access to inputs and output markets and services. Organizing smallholder farmers into viable, effective and inclusive rural producer organizations (POs); and supporting existing POs to develop their capacities, would enable them better to collectively address the challenges facing them (Sulaiman and Blum, 2016). There is an increasing body of evidence to show that farmers can gain a lot if organized and their capacity to understand markets (and plan their production accordingly) can be enhanced (ADB, 2005; FAO, 2009; Singh and Swanson, 2005; Wongtschowski *et al.*, 2013).

POs can act as facilitators for improved market access:

- to inputs and outputs;
- to technologies;
- to information; and
- to financial support (subsidies, credits, etc.);
- for closer cooperation with national research institutes and other actors of the Agriculture Innovation System (AIS);
- as advisory service providers for their members; and information brokers; and, finally,
- they can consolidate the voice of small-holder farmers and represent them in policymaking contexts (Sulaiman and Blum, 2016; GFRAS, 2015; FAO, 2014a & 2014b). POs also have a strong role in demand formulation, articulation and negotiation and can increase the demand-orientation of RAS (GFRAS, 2015) (see module on demand-led advisory systems).

Singh and Swanson (2006) discuss this in detail in their case of setting up the supply chain for medicinal plants at Patna, India. According to them, the crucial factor in setting up the producer groups at the village, block and district levels was to create a framework that could produce a substantial quantity of produce on a sustainable basis, thus making it economically viable for any company to buy products from the same groups of farmers. In addition, a substantial farmer base, that could be mobilized to produce specific crops according to specific requirements, would be highly beneficial in negotiating future contracts and in securing good financial returns for members (for more details see case study). In several countries, NGOs and other development agencies do assist farmers to organize into groups,

link willing suppliers with willing buyers, train farmers to understand markets, and promote trust among companies, traders and farmers (Nyhodo *et al.*, 2009).

Acting collectively is also effective for accessing seeds, fertilizers and other phytosanitary services, as the case for more than 750 input shops in Niger shows (see case study). Input supply shops function on a cooperative basis and are managed by local POs and communities. The unique characteristics of these shops is that inputs are affordable and tailored to their clients' needs in terms of unit quantities and types, e.g. fertilizers are not only sold in sacks, but also in small package of 500 g or 1 kg to encourage fertilizer use by women. Cooperatives and farmers' organizations were trained on how to organize joint fertilizer orders, to manage the agro-input shops, including book-keeping and business management, as well as in new agricultural techniques required to increase productivity, such as the rational and appropriate use of good quality fertilizers. About 200 000 smallholder farmers are clients of such input shops, and yields have increased substantially.

The advantages of collective action also include getting access to international certification for quality and hygiene standards, and getting relevant information on current legal and technical issues in the targeted markets (for instance, limited chemical use), which are normally not affordable in terms of costs and expertise for individual farmers. In addition, transport costs (for the collection of inputs and dispatch of outputs) can be dramatically reduced by synchronizing demand for transport services. Organized farmers have a stronger voice also when articulating the need for new roads, market places and other rural infrastructures. Farmers can also collectively organize for marketing and storage purposes. POs can organize the storage and act as a wholesaler, they can play a commercial role by seeking buyers and negotiating better contractual conditions and arrangements (e.g. guarantee price) for producers (Broutin, Hermelin and Levard, 2014). A very interesting case is represented by the cooperative in Mogtédo (Burkina Faso), where the cooperative does no purchasing, sales, stocking or processing but instead exercises an oversight function by fixing the rules and facilitating transactions (Lothoré and Delmas, 2006).

Market-oriented RAS and contract farming

Private sector agri-business firms provide advisory services to farmers selling their produce to these firms, both based on trust and under contractual arrangements. This largely reflects the scale of operations as, once expanded, requires binding, written contracts to protect the interests of both parties.

A few of the organized retailers involved in direct procurement of fruits and vegetables in India have set up demonstration farms and nurseries, and offer technical support to enhance the producer's capacity for good quality production for the market (Sulaiman *et al.*, 2011). Singh and Singla (2011) report that retail chains have raised quality consciousness among farmers, introduced grading (in primary processing), and have helped cost-cutting through RAS, with training on input use for better yield.

A private-sector mechanism for providing comprehensive services to small farmers is contract farming, or out¬grower schemes. The role of contract farming in facilitating such farm-firm linkages may be important, particularly in an environment where the farming community is fragmenting and the processing and retailing sectors appear to be scaling up quickly (Gulati, Ganguly and Landes, 2008). Under contract farming schemes, buyers of agricultural products may provide advisory services and inputs to ensure an adequate quantity and quality of product. These schemes can be linked with producer organizations as direct participants in the contracts, or as intermediaries assuming varied levels of responsibility for service provision or the supply of product.

Contract farming, if well managed, can represent an opportunity for linking small farms to RAS, mechanization, seed supply, fertilizer and credit, and to guaranteed and profitable markets for produce. According to Eaton and Shepherd (2001) contract farming can also reduce price-risk and uncertainty for both parties and provide opportunities to access new markets usually out of reach, particularly in countries where smallholder agriculture continues to be widespread. However, it also entails some risks and threats for farmers. Gulati, Ganguly and Landes (2008) noted that often in a case of crop failure, farmers may have to bear the loss with no support from processors or retailers. Price volatility and quality standards should also be taken into account to avoid procurement issues detrimental to both farmers and firms. Likewise, potential direct negative impacts of contract farming include that farmers might be controlled and exploited by large-scale agribusinesses as they could not have sufficient bargaining power (ADB, 2005). To avoid this, it is of paramount importance that negotiation directly involve both the producers and their organizations, and that there are clear terms of contract defining the benefits associated with contracting (Mwambi, Oduol and Mshenga, 2016). The public and private sectors need to work together with farmers and their organizations to develop better and transparent guidelines on contract arrangements to reduce risk and ensure profit sharing.

Overall, market-oriented services include rural services linking farmers to input and output market, namely:

- *technical expertise* aimed at generating value by increasing the volume and quality of production and the timing of the supply of raw materials;
- *economics, marketing and business management expertise* (e.g. farm enterprise analysis, marketing information, business planning, etc.);
- post-production expertise aimed at creating value along the value chain through improved post-harvest handling, packaging, storage and distribution, while meeting food safety and quality expectations;
- *support in strengthening producer and other value chain stakeholder* groups through improved collective marketing, [organizational development], business management, financial management, leadership, negotiation skills and linkages with research institutions and other innovation actors;
- *support in facilitating value chain development* and strengthening through improved coordination of production, negotiation of contracts, brand development, linking producers to buyers, as well as providing advice on legal, regulatory and certification issues; and
- *facilitating institutional changes* – forming POs, clusters, networks and linkages among different actors along value chains (e.g. convening multi-stakeholder forums to understand market opportunities and constraints along value chains, develop contractual and trust relations). Information Communication Technology (ICT) has a particular role to play as an instrument for exchange of information amongst smallholder producers and value chain actors more broadly and at scale (FAO, 2017 adapted from Neuchâtel Initiative 2008).

ICTs for market-oriented RAS

Information and communication technologies (ICTs) can be used in various forms to support market orientation of advisory services. The use of ICTs is crucial for access and sharing of information both by farmers and RAS advisors in order to improve marketing. Bell and Payne (2014) identified the most promising tools according to the diverse extension function. For linking farmers to market they found:

- radio to be very good for providing general price reports;
- cell phones (text and voice) and smart devices very good for access to price information (either call in or subscription); and
- computer and smart devices accessing the internet have the potential to bring potential buyers and producers together.

Mobile phone systems appear to be the most flexible technology for improving connections within producer organizations.

There are several successful examples demonstrating that ICTs can help small-holders to connect to markets. For example, Esoko (www.esoko.com), a private initiative based in Ghana, supported by FAO and its different services, delivers market prices via SMS; weather alerts; crop advice; etc. It also sets up call centres to support local languages and address literacy issues. In addition, it links buyers with sellers by providing a virtual marketplace whereby producers have access to inputs and finance, while driving business for input dealers and financial service providers. In Burkina Faso, some of the nearly 2 000 women who work with a shea butter association have become financially independent by learning to use ICTs, including GPS and the Internet, to reach a developed-country market for certified organic shea butter (World Bank, 2017).

Another example is e-Choupal (http://www. e-Choupal.com), an initiative of the Indian Tobacco Corporation (ITC) Limited to link directly with rural farmers for procurement of agricultural produce. Farmers can do the transaction at village meeting places, facilitated by an internet connected computer through the ITC website, directly with a purchaser. They can also access latest local and global information on weather, growing practices as well as market price at the village itself. Both farmer and the processor share the benefits deriving from the elimination in the value chain of the intermediary and from timely information availability (Sharma, 2011).

Technologies that do not depend on literacy (radio, digital photography, video) are extremely effective for sharing information within and between producer organizations, particularly in the poorest areas of developing countries, where infrastructure and literacy are limited. In recent years, there have been increasing offers of educative videos that show agricultural and other good practices in agriculture and rural development, not only on specific websites (for example Agtube, an initiative of Access Agriculture, a new social media platform for rural people in developing countries, where one can upload and share agricultural video clips in many languages), but also on Youtube.

Challenges

Promotion of market-oriented advisory systems and services currently faces two types of challenge, namely limited capacity within the public sector on the topic, and limited consideration of gender and youth issues in value chains. These are discussed below.

Capacity of market-oriented RAS. For market-oriented advisory services to be effectively carried out, capacity development for advisers and management is crucial, particularly in the public sector. Public sector providers are currently ill equipped to take on the challenges of market-oriented RAS. RAS Advisers and managers need a set of hard and soft capacities in both the technical and functional domains to deal with flexibility and adaptation to changing market requirements. RAS managers play a particular important role in establishing partnerships between the public and private sector, including producer cooperatives, in order to successfully achieve marketing of produce of smallholders at scale.

> *"Training, often referred to as capacity building is not a sufficient substitute for the on-going back-up support that extension agents require to maintain their capacities to stay in tune with markets and standards. They need to know what the implications are if a market collapses or if consumers develop a preference for new food products. Most importantly, they need skills in how to develop broad-based capacity among farmers and local entrepreneurs to make informed judgements about whether or not, and how, to engage in markets"* (Christoplos, 2010:31).

Gender and youth. Ensuring that gender issues are taken into consideration in value chain-related interventions is vital for facilitating the development of inclusive value chains that benefit both women and men, and particularly also youth. To make markets work for women there is need for closer engagement of women in the production of cash crops or high value commodities, to increase their income (FOWODE, 2012). To this end, agricultural and rural advisory programmes should design and implement gender-sensitive advisory systems and deliver relevant and demand-driven advisory services (Petrics *et al.,* 2015). Special efforts are also needed to improve women's access to market information services; meeting transport and storage needs to aggregate production and enable producer groups to bargain with buyers or sell in higher-value-added markets. Overall, knowledge among practitioners and policy-makers on the gender aspects of value chain interventions is still limited (Riisgaard *et al.*, 2010)and this needs to be addressed.

Retention of youth in agriculture is only possible if appropriate mechanisms to promote their involvement are put in place. Young farmers often have greater capacity than their older peers for innovation, imagination, initiatives and entrepreneurship, to transform the agricultural sector. Successful marketing and access to market along with other services are essential. RAS should organize more youth-oriented capacity development programmes, including training in farm management and agribusiness, and also promote successful young agri-entrepreneurs (Sulaiman and Blum, 2016). The use of modern technologies, including ICTs, is certainly a motivating factor for young farmers and can help them getting into business.

Case studies

CASE 4.1: BOUTIQUE D'INTRANTS IN NIGER

In Niger, land degradation, depleted soil fertility and widespread poverty in rural areas have led to very low yields and worsening of food security situations in large parts of the country. The efficient use of fertilizers and manure combined with the use of good farming techniques would help in diminishing land degradation, restore soil fertility and increase agricultural production. However, in Niger, as in other countries of the Sahel, the availability of good quality inputs at the right time, right place and in small packages, is one of the main causes of low usage. Producers faces also difficulties related to: the relatively high prices of inputs, especially fertilizers and seeds; poor quality of fertilizers; irregularities in supply; soaring prices; distance between the points of supply of inputs and production areas; limited knowledge of the types of inputs; and use and Non-availability of certain types of inputs.

To address these challenges and improve access by limited-resource farmers to relevant services, the "Projet Intrants" was established between 1999–2008, with the support of FAO and the Belgian Government and in collaboration with the government of Niger. It focused on the promotion of agricultural input supply through input shops and farmer field schools. Then, from 2009 to 2013 a project of Intensification of agriculture through the strengthening of cooperative

input shops (IARBIC) continued the development and the rehabilitation of input shops and enhanced joint fertilizer orders organized through the farmer federations for the supply of the input shops.

The model of agricultural input shops has proven to be very successful in providing inputs tailored to the needs of the resource-poor producers, as inputs are affordable and sold in small packages of 500 g or 1 kg. Input shops are operated as cooperatives:

- selling agricultural inputs (seeds, fertilizers, pesticides and veterinary products); and
- renting small agricultural equipment.

The sales persons also provide advisory services on how to apply fertilizer and other inputs. The input shops are implemented by POs who are also fully responsible for their managements. POs were trained on how to organize joint fertilizer orders, to manage the input shops, including book-keeping and business management, as well as in new agricultural techniques required to increase productivity, such as the rational and appropriate use of good quality fertilizers, with crop rotation.

A recent study from FAO (2016) consolidated a list of key figures for input shops:

- 785 inputs shops were operational in Niger by 2013;
- there were an average of 251 clients (in 2012) per input shop, hence a total of about 190 000 producers having access to fertilizer and other inputs;
- increased fertilizer use. On average, clients of input shops used about 4 kg/ha, while the national average was estimated at 130 g/ha (both below the CEDEAO recommended fertilizer use of 9 kg/ha;
- clients were satisfied with the proximity of input shops and the quality of inputs available;
- they were operated by 12 federations and unions, with 3 000 POs involved, representing almost 200 000 members (and their families), equivalent to 12 percent of farm households; and
- an extensive network of partners had been created with technical and financing partners (research institutes, projects, non-governmental organizations [NGOs], financial institutions, private operators in the "input" chain, radio stations, etc.).

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CASE 4.2: DEVELOPMENT OF SUPPLY CHAINS FOR MEDICINAL AND AROMATIC PLANTS IN INDIA: EXPERIENCE FROM ATMA 2005

When the Agricultural Technology Management Agency (ATMA), Bihar, India, decided to implement a market-driven approach to help farmers diversify into higher-value commodities and products, it first evaluated alternative crops and products within the district. Three criteria were used: first, a continuing market demand for the crop or product; second, suitability of the crop in the existing agro-climatic conditions; and, third, a relatively low-cost production technology to reduce the farmer's risk.

The process adopted is described below.

Conducting a PRA to assess local conditions and potential markets

In order to identify what marketable crops might successfully be introduced into the study area, local conditions were assessed using various Participatory Rural Appraisal (PRA) techniques. During this PRA exercise, more than 40 species of medicinal and aromatic plants (MAPs) were found growing wild in Patna District, some carrying a very high market value. However, most farmers were unaware of the commercial importance of these crops, making it necessary to conduct advisory activities, such as exposure visits, to create farmer awareness about these potential economic

opportunities. In addition, farmers were informed both about the need to conserve the biodiversity of these plants as well as the growing demand for some MAPs by pharmaceutical companies. As a result of these advisory activities, farmers soon became receptive to the idea of cultivating MAPs.

Organizing producers into farmer interest groups and farmer associations

Given the need to scale-up the production of different high-value crops or products, ATMA promptly began organizing producer groups. Organizing these groups was a challenge due to various social and economic issues. Since Indian society is highly fragmented along caste, religious and economic lines (including size of landholdings), it is difficult to bring all these categories together into one organization to carry out a common economic activity. Therefore, the strategy adopted was to organize these Farmer Interest Groups (FIGs) around people from similar social and economic backgrounds and who shared similar goals and objectives. The typical (village-level) FIG had between 10 and 15 farmers.

Assessing the market demand for specific medicinal and aromatic crops

In order to successfully produce MAPs in the district, it was necessary to identify those crops where there was a stable and growing market for the product. As the trade in MAPs has been largely unregulated and carried out through a plethora of smallholder traders, the buyers were not willing to share the source of raw material. Most of the merchants were not interested in entering into a long-term contract, and the amount of raw materials needed depended on market demand for their products. After a number of unsuccessful attempts to identify manufacturing firms that might be interested, the strategy shifted to finding local buyers. Of the companies that were short-listed in Bihar, two companies were found to be receptive to the idea of forming a partnership between the growers/FIGs and the company, namely: Baidyanath Ayurved Bhawan; and Ayurved Shri Herbals Limited.

Assessing the potential for producing vinca rosa in Patna District, Bihar

ATMA, working in close collaboration with the local KVK (Farm Science Centre), was able to establish through field trials that that the cultivation of Vinca Rosa (*Catharanthus roseus*), also known as Periwinkle, was especially well suited for small-holder farmers in Patna as it can provide attractive economic returns with little risk to producers.

Assessing the market demand for vinca rosa

At the same time as ATMA was investigating the technical feasibility of producing Vinca Rosa in the district, it was also entering into discussion with a potential buyer for this crop. The first company to enter into a formal contract with producer groups to produce Vinca Rosa was M/s Ayurveda Shri Herbals Ltd. The leaders of five newly-established FIGs were invited for an open discussion with the Managing Director of this company in the presence of the ATMA leadership. The purpose was to address any question these FIG leaders might have and to discuss the FIGs' concerns regarding production technology, suitability of the crop, production costs, and the post-harvesting handling and marketing of the MAPs. A contract was signed, with the ATMA director becoming the facilitator for both the FIGs and the company. Pricing would be based on a six-month average market price for the material in the Delhi market.

Training FIG members to produce and handle vinca rosa

Training the interested members from the first five FIGs was carried out by a team of experts and scientists in medicinal plants cultivation. The Farm Science Centre (KVK) became a key demonstration and training site for future groups of farmers, who were trained in the technologies of producing and handling these various MAPs. Technical publications were prepared in local languages that explained cultivation practices as well as probable costs and returns from cultivation of this crop. To augment capacity development in each FIG, an effort was made to select farmers who were more responsive to adopting new cultivation techniques. These selected farmers then acted as resource persons within each FIG to provide technical support to the other members. Finally, ATMA facilitated the supply of inputs such as seeds, organic manure and organic plant protection measures.

Monitoring the production and post-harvest handling of vinca rosa

Production of the first vinca rosa crops was carefully monitored by both ATMA and company representatives to ensure that no chemicals were applied at any stage of plant production or post-harvest processing. Quality tests were then performed on samples taken from each lot. The purchase price was USD 40 or Rs 2 000 per quintal (100 kg) which was paid to the FIG after obtaining satisfactory test results. Representatives from ATMA were present at each stage of this process to ensure that the terms of the contract were carefully adhered to by both sides.

Expanding, through Exposure visits, the number of farmers involved in producing MAPs

Following the same procedures that were used with the original group of FIGs, before beginning the cultivation of any new MAP, the leaders of newly organized FIGs were sent to visit other farmers who were currently producing a MAP, either within the district or in another district or state. During these exposure visits, crop management practices were discussed at length and farmers learned about the post-harvest management practices that were necessary to successfully produce the different crops, including drying and packaging of the raw materials. These exposure visits had a very positive impact on the attitudes of these farm leaders about the potential of MAPs. The visits increased their confidence and eliminated any doubts that they might have had regarding the financial viability of such crops. When this activity was launched in 2000, there were five FIGs, with a combined membership of about 60 farmers, who began with the cultivation of vinca rosa in Patna district. Within one year, 10 more FIGs had organized and were interested in participating in this new MAP programme. By April 2003, ATMA had established a network of 50 FIGs active in MAP cultivation.

Source

Singh, K. M & Swanson, B.E. 2005. Development of Supply chains for Medicinal Plants: A Case Study involving the production of vinca rosa by Smallholder Farmers in the Patna District of Bihar, India. Paper presented in the IAMA 2005 Post Workshop: Building New Partnerships in Global Food Chains – Experiences from North Africa, the Near East and Asia, 29–30 June 2005, Chicago, USA.

CASE 4.3: STRENGTHENING THE EXISTING HORTICULTURE VALUE CHAIN IN NEPAL

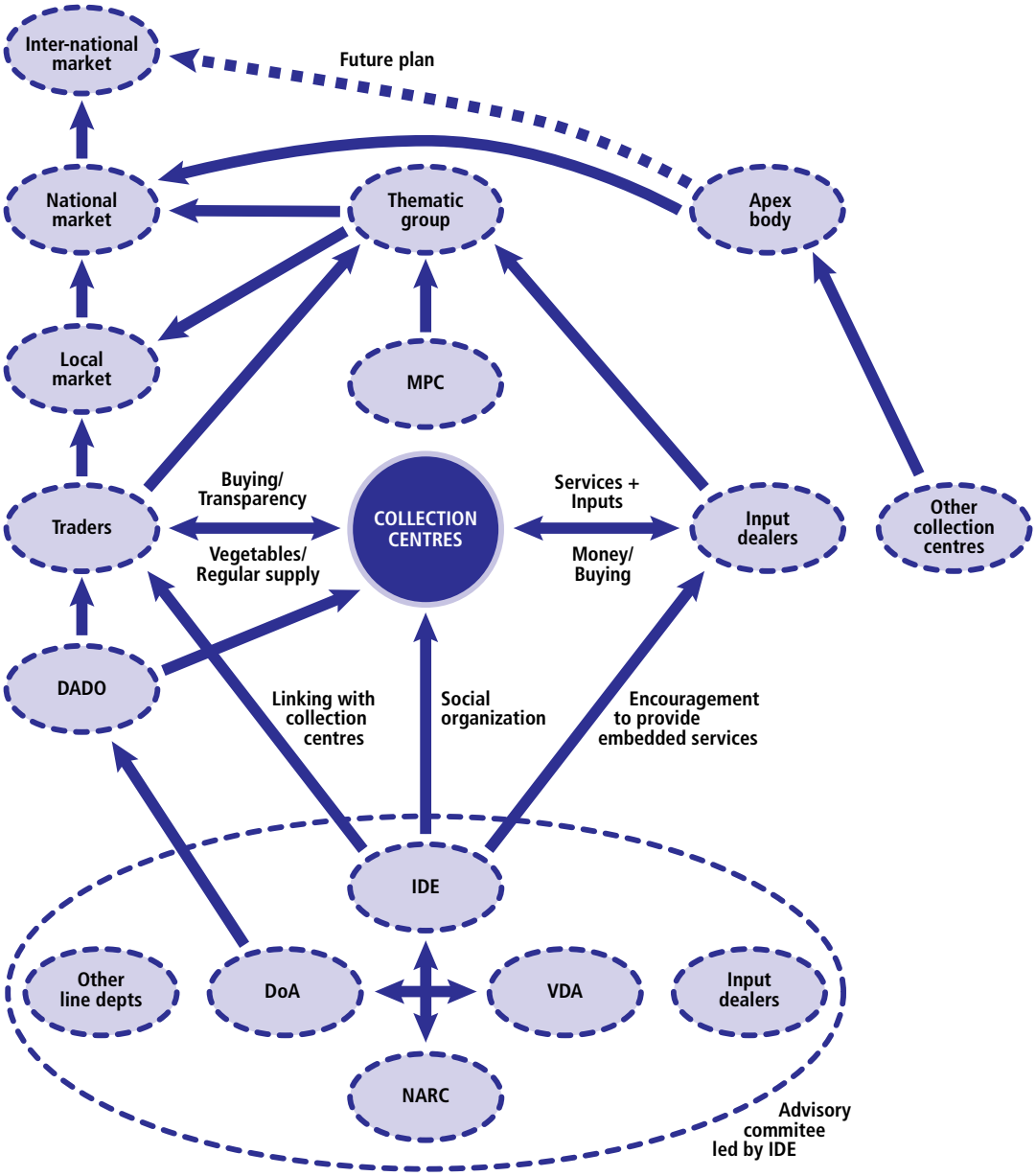
While working with farmers in Nepal, International Development Enterprises (IDE), Nepal, saw opportunities for smallholder farmers to rapidly increase their incomes by supplying agricultural produce, especially vegetables, to larger national and international markets. However, the farmers were unorganized and they produced only small quantities of vegetables. Moreover, there inefficiency in the existing value chains, characterized by missing actors and insufficient connections between existing ones. To address these constraints and connect farmers to markets, IDE facilitated the construction of community-managed collection centres (CCs) in various District blocks, which served as concentration points for vegetables to attract local traders. Individual farmers were organized into farmer groups, supervised by the block collection centre. IDE also appointed an executive body for each centre, called the Marketing and Planning Committee (MPC) to represent the interests of members vis-a-vis the various stakeholders.

Input dealers who operated in the various regions were given resource books on crop production practices and were encouraged to share copies of these with their farmer clients at nominal cost. These input dealers were also encouraged to attend meetings at the collection centres. The MPCs were trained and encouraged to contact the central Department of Agriculture, and village development committees at the local level, to access various programmes and funding schemes. IDE also registered the farmer groups it formed with the Department of Agriculture and the MPCs under the Cooperatives Act in order to formalize and institutionalize these organizational structures and ensure their sustainability.

The creation of this business architecture helped farmers receive better prices, mainly because the MPCs were able to use their bargaining power for the produce at the collection centres. However, despite all efforts, there still existed an element of mistrust between farmers and traders. This translated into traders not openly sharing prices, farmers complaining about exploitation by traders and traders complaining about the lack of regularity in supplies from farmers. The MPCs lacked the requisite skills to address these issues at the time. The linkages among different agencies that IDE created through the collection centres remained structural but not functional. As a result, the impacts of these interventions did not match expectations.

At this stage, IDE felt that the use of Participatory Market Chain Analysis (PMCA) could be a useful tool to address these problems and move current initiatives to the next level of market operation. IDE expected the tool to help them in building management capacities in the MPCs, which in turn would help them respond to different types of market opportunities, and try to build trust among the various actors. It developed a new project, partnering with the Agro-Enterprise Centre (AEC) of the Federation of Nepalese Chambers of Commerce and Industry and CEAPRED, another NGO in Nepal. Given that PMCA was originally developed in a completely different geo-political-cultural-market context, (developed in Latin America by the International Potato Center and applied in Uganda by DFID's Crop Post-Harvest Programme), IDE decided to adapt it to the local context. Various activities were undertaken to strengthen the existing value chain:

FIGURE 4.3: Relevant actors and their relationships in promoting PMCA in Nepal



Notes: DADO = District Agricultural Development Office; DoA = Department of Agriculture; NARC = Nepal Agricultural Research Council; IDE = International Development Enterprise (it is an NGO); MPC = Market Planning Committee; VDA = Village Development Area.

Source: Reddy *et al.*, 2011.

Development of PMCA guidelines in the local language

- orientation training on the new approach and the initiative for MPC executive members and other potential actors in the value chain, namely traders, wholesalers, retailers, consumers and restaurant owners;
- formation of thematic groups at each MPC. With each thematic groups comprising a mixed group of value-chain actors, including MPC Executive Committee members, vegetable producers, wholesalers, retailers, consumers and restaurant owners. This was subsequently expanded to cover input agencies, such as agro-vets;
- in-country market assessment in the five districts: A survey of wholesalers, retailers, vendors, restaurant holders and consumers helped in identifying the major constraints;
- study on potential of vegetable export to major vegetable markets in India (e.g. Gorakhpur in Uttar Pradesh, adjoining Nepal) and meetings with the wholesale traders;

- facilitation of MPCs in training their beneficiary households on post-harvest technology and improved marketing activities;
- support to Vegetable Collection Centers to purchase of new balance scales, weights, crop calendars and packaging materials;
- organizational development and leadership training for MPC executive members and thematic group members.
- training in developing plans for production and marketing for executive members of the MPCs taking into consideration market demands; and
- daily broadcasting through FM radio stations of price information on vegetables in major vegetable markets.

Improved interactions and trust among different actors, created through the application of PMCA, in the 20 MPCs worked with in five districts gave a win-win situation for everyone involved.

For example:

- farmers received better prices, became aware of opportunities in different markets and expanded vegetable growing areas;
- traders accessed graded and good quality vegetables in large quantities and expanded their business frontiers;
- restaurant owners and other consumers accessed vegetables in required quantities and at better prices; and
- input dealers increased their businesses and received feedback on how to improve their operations.

This newly created trust not only helped different actors improve their current operations, but also helped them plan for future activities (expanding activities to organic agriculture, reaching international markets, etc.). In this scenario, each of the participating stakeholders in the initiative was striving to sustain it and further expand it in order to further their own business interests. IDE planned to continue with the thematic groups and other PMCA initiatives beyond the research into use (RIU) project period. IDE Nepal has been successful in mobilizing further donor support to expand the initiative. It has also been successful in efforts to impress upon the Department of Agriculture, whose director-general is the chairman of IDE's advisory board, the need to partner with it in expanding this initiative.

Sources

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SUMMARY

RAS and education related to markets and prices have traditionally had low priority. But this is no longer acceptable as systems related to food production, processing and distribution are undergoing change. Farmers have become more market-oriented, hence rural advisers need to be in a position to provide farmers with information and knowledge not only on how to grow crops but on how to deal with value addition in general and changing markets in particular, how to make informed decisions and how to increase their income from successful marketing strategies.

The focus of advisory services needs to shift from increasing production to enhancing income and rural employment, thus contributing to the broad objectives of improved livelihood and increased food security. Market orientation is about developing the capacities of value chain actors, including farmers, but not alone, to deal with marketing themselves. This includes developing capacities at different levels, including those of advice providers, to stay in tune with changing market requirements and standards.

Market-oriented advisory services and systems imply a value chain orientation, which in turn implies that advisory services respond to the needs of a range of actors, not just farmers. RAS services can increase producers' negotiating power by increasing access to information on alternative markets, giving producers better negotiating skills, helping producers meet quality, quantity, and timing needs of the market, and promoting collaborative action in marketing products. Smallholder farmers, if they are not organized, seldom benefit from markets. A broad set of institutional arrangements need to be promoted to enhance market orientation, such as community-based enterprises, contract farming, special-interest groups to achieve economies of scale in supplying high-value markets, farm business schools, participative market chain assessments and input shops. These arrangements need to facilitate access of smallholder producers and their organizations to productive assets and markets, to opportunities to build social capital and to increase their voice in the policy-making process.

Agri-business firms, organized retailers and other actors in the value chain are important and RAS providers should interact with them to look for opportunities where advisory services can support smallholder producers in realizing greater value from their produce. Contract farming is not a panacea; but, if managed well, it can be an effective mechanism to link farmers to sources of advisory services, inputs and profitable markets. For market-oriented RAS to be effectively carried out, the understanding of advisors on market-related aspects needs to be enhanced through regular capacity development initiatives. The advisors need to improve their skills related to facilitation and brokering relationships with varied actors in the value chain. Moreover, if farmers are to fully gain from this market-oriented advisory services, investments in market infrastructure (rural roads, modern ICT, electricity, warehousing, etc.) by government, local communities and business are also needed.

Tools for market-oriented RAS

TOOL 4.1: PARTICIPATORY MARKET CHAIN ANALYSIS (PMCA)

Guiding questions for PMCA:

1. What are the important criteria for analysing complex systems such as market chains?
2. Why can it be useful to divide market chain actors into differentiated groups to analyze the system?
3. What are some techniques that permit us to generate a common language and understanding around the market chain? What are the advantages and disadvantages of the use of participative tools to this end?
4. What can we better understand by mapping the market chain? Is there additional information that is difficult to capture in this way? Why?
5. Why is understanding of the business development services offered along the market chain important? What important information can we collect in this area?
6. What can we learn by carrying out a historic analysis of market chain development over the last few years? When might this be useful? When is an extensive and formal revision necessary, and when is a rapid analysis sufficient?

Steps in the process of undertaking a PMCA:

1. The first step is to identify the commodity for which the market chain analysis is needed.
2. Identify players in the chain in order to bring them into the discussion.
3. Organize a participatory workshop where they can all contribute.
4. Facilitate the workshop such that the diverse (and often conflicting) opinions and positions are brought out constructively, clearly, and to everyone's satisfaction.

Sources

For detailed information on how to conduct a participatory market chain analysis:

Lundy, M., Gottret, M.V., Ostertag, C., Best, R. & Ferris, S. 2007. P*articipatory Market Chain Analysis for Smallholder Producers*. USAID, CRS & CIAT. Cali, Colombia, CIAT.

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TOOL 4.2: CHECKLIST FOR MAKING MOAAS INTERVENTION DECISIONS

- Is the distance from producer of the product to market too far?
- Are the agro-ecological conditions for the crop of farming activity favourable?
- Will it make the producers dependent on one crop or farming activity? Are enough opportunities available for spreading risk?
- Will the activity saturate the market, driving down prices?
- What will be the impact on the environment?
- Does the activity make a contribution to a (socially, ecologically and economically) sustainable farming system?
- Will it compete with staple crops, increasing prices of staple food, negatively effecting landless people who have to buy food?
- Is there enough capacity among farmers and/ or farmer organisations to defend their interests in the value chain?

- Are women involved in production and is the family benefiting from the proceeds?
- Are poor farmers involved or can they easily participate in the production?
- Is the activity condition s be affected, e.g. more child labour; health effects because of pesticide use?
- Will food security suffer from enhancing cash crop production?

Source

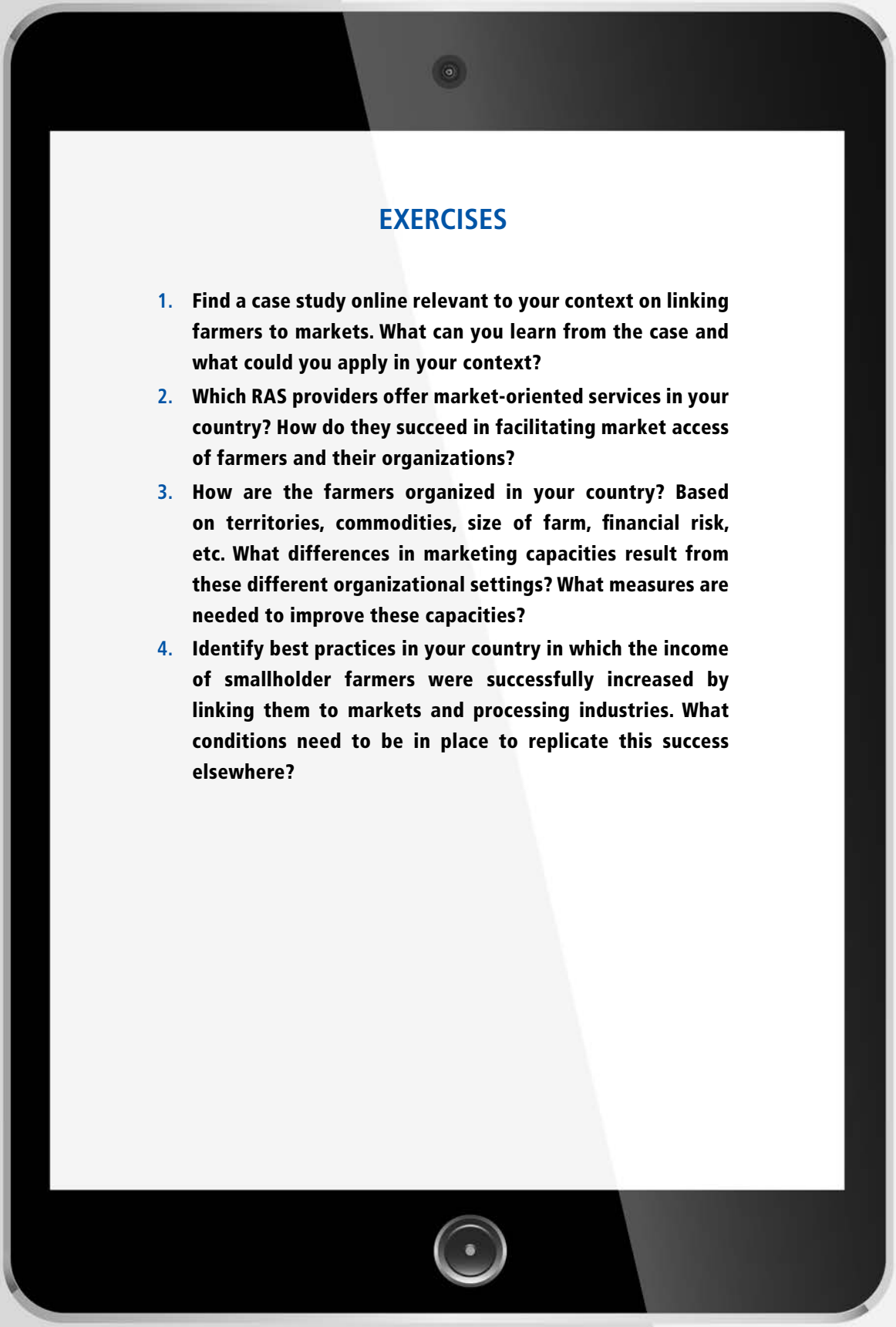
AFAAS. 2011. *Market Oriented Agricultural Advisory Services (MOAAS) – Guidelines for setting up MOAAS pilots.* Study on MOAAS Approaches, commissioned by Forum for Agricultural Research in Africa (FARA).

TOOL 4.3: A CHECKLIST TO ASSIST FARMERS IN SUPPORT OF CONTRACTING

- Has a detailed analysis of the supply chain been carried out? Have proposed linkage activities been based on that analysis?
- What are the buyers' purchase conditions in relation to quality, safety, quantity, packaging, transport and delivery, pricing and payment?
- What is the capacity of farmers to meet these conditions? What training do they require? Are they able to make the necessary investments?
- What difficulties does the location of the farmers present in supplying the market?
- How likely are farmers to fully understand the purchase conditions, particularly in relation to pricing and quality? What steps are needed to ensure they develop anunderstanding?
- What would be the likelihood of side-selling (extra-contractual marketing) for the envisaged crops? How can this be minimized?
- Is a written contract necessary or is a verbal contract sufficient? Who will draft the contract? What steps can be taken to maximize the involvement of farmers in this process and to ensure that they fully understand the conditions of the contract?
- Does the contract allow for renegotiation in situations of extraordinary events or circumstances beyond the control of the parties?
- What costs would farmers incur in meeting buyer conditions? How would these costs affect profitability? Would returns be higher than existing returns? Would returns justify any increase in risks?
- What transport arrangements would be used? What transport is available? Is it suitable for the planned products? What steps are necessary to make suitable transport available? What are the costs and how will they affect profits?
- What arrangements can be made for farmers and buyers to meet? Can buyers visit farms? Can farmers see how their products are marketed and used?
- Is any external certification required for the potential market? What is the cost of certification? What costs would farmers face in meeting required standards? How would these affect profits?
- How long has the potential buyer been in operation? What risks are associated with the business?
- Does development of the market require any support to processors? How can this be done with minimal subsidy to ensure sustainability? Prior to a decision to provide support, has detailed market and business research been carried out to assess the long-term viability of the company?
- Do other actors in the supply chain require technical or financial support in order for linkages to be more efficient?

Source:

Kahan, D. 2013. *The role of the farm management specialist in extension, Farm Management Extension Guide 6.* Rome, FAO. (also available at: http://www.fao.org/uploads/media/6-SpecialistInternLores.pdf).



EXERCISES

1. **Find a case study online relevant to your context on linking farmers to markets. What can you learn from the case and what could you apply in your context?**
2. **Which RAS providers offer market-oriented services in your country? How do they succeed in facilitating market access of farmers and their organizations?**
3. **How are the farmers organized in your country? Based on territories, commodities, size of farm, financial risk, etc. What differences in marketing capacities result from these different organizational settings? What measures are needed to improve these capacities?**
4. **Identify best practices in your country in which the income of smallholder farmers were successfully increased by linking them to markets and processing industries. What conditions need to be in place to replicate this success elsewhere?**

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MODULE 5: Financing mechanisms for pluralistic demand-led RAS systems

By Blum, M.L., Cofini, F. and Sulaiman, V.R.

OBJECTIVES

1. to examine traditional and contemporary methods of funding and financing RAS systems and its services;
2. to review the various cost-recovery strategies for financing RAS;
3. to clarify the advantages and disadvantages of different financing mechanisms for advisory systems and services; and
4. to explain various approaches to financing RAS.

INTRODUCTION

Extension and advisory services deserve both public and private investments. Numerous donors, investors, private companies, farmers and virtually all governments invest in these services. Availability and allocation of financial resources is a critical factor determining the performance of RAS. There are various RAS funding and financing options and they determine how the advisory system will work, hence, in order to move towards a demand-led system, the farmers or their organizations need to be in a position to pay for the services.

Regardless of whether advisory services are financed by farmers, the government or by commercial actors, it is essential to retain an open mind about which service organization should then be contracted to provide the service. The organizational as well as financing mechanisms influence to what extent farmers and their organizations are involved in these decisions. It is also important to note that in a system with pluralistic RAS services and multiple sources for financing, the source of funds should not predetermine who provides the service, as was the case in the former public systems, which were predominantly financed by the public sector and donors.

This module discusses the issues involved in financing RAS. Financial participation by the user is particularly important because it expands resources available for RAS, and also increases the accountability of the service towards the users and ensures that the clients value the services, and also expect good quality services for their money paid. Recovering the full or partial costs depends to a great extent on farmers' willingness and ability to pay, and the influence farmers have in choosing the services they need. The relevance of the service provided will be affected by these aspects.

Outsourcing some of the extension tasks to organizations outside the public sector is critical, as quite often all the skills needed for providing support to farmers are not available within public-sector agencies. The capacities of actors such as producer organizations (POs) to provide their own services have also increased (Rivera and Alex, 2005).

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DEFINITIONS

Funding and financing

These terms may be used interchangeably and there may not necessarily be a difference. Funding, financing and financial assistance could refer to either grants or loans given from one organization or individual to another. Funding is money provided for a specific purpose, often by an organization or the government, a donor or other benefactor. Financing is obtaining or furnishing money or capital for an enterprise or purpose. Hence, funding is more specific: providing funds for a specific project or program, while financing is more general: the raising or providing of financial resources.

Financing mechanisms for pluralistic and demand-led RAS

These are new approaches on how financial resources are raised, channelled and governed. For pluralism, the financing mechanisms would support the emergence of multiple service providers with a wide range of services to better match supply with demand for services. For demand-led RAS, the financial resources would be raised by or made available to the users (or a combination of both) so that they are able to pay for the services they need and want. This is a way to promote empowerment of the users of the services as it enables them to articulate and negotiate their demand for services and hence increases accountability of the services towards the users, leading to increased relevance and effectiveness of RAS.

Cost recovery

Cost recovery is the means by which an organization, e.g. RAS provider, may choose to obtain financial resources in order to cover its costs (direct costs and overhead costs) and possibly generate a surplus. This may occur through income (services, sales, etc.), grants, gifts, fees and other means. Full cost recovery attempts to recover all associated costs. The concept of cost-recovery for advisory services becomes important given reduced public funding for services and the increased capacity of producers and their organizations to contribute to the costs of services.

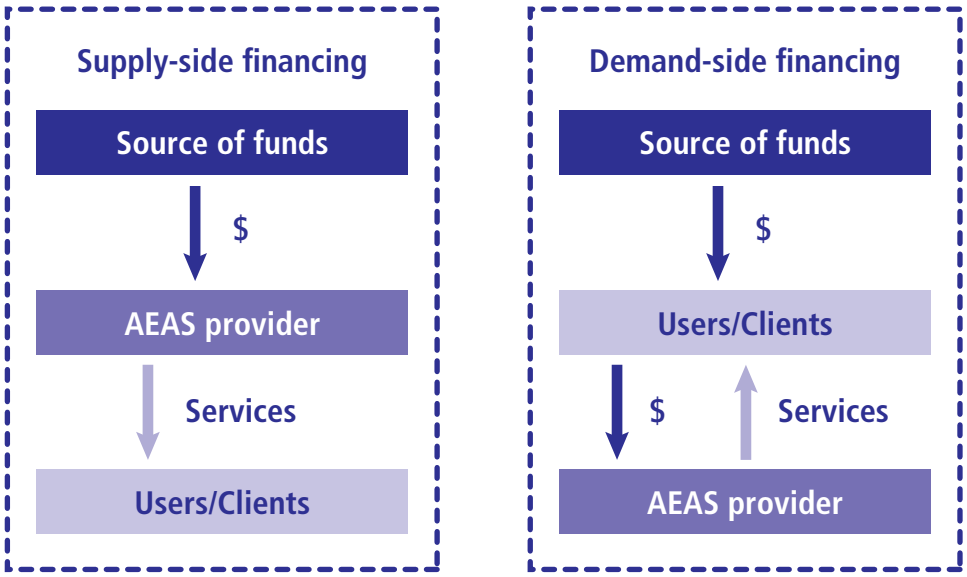
Outsourcing

Outsourcing (*or contracting out)* is the business practice of hiring a party outside your organization to perform services and create goods that traditionally were performed in-house by the organization's own staff. Outsourcing is not new to RAS or other service industries. For example, out-sourcing is practiced by the public sector by contracting out advisory services functions to private companies, NGOs, farmer-based organizations or registered individual consultants. It is usually done as a cost-saving measure, or to take advantage of others' skills and abilities in carrying out a specific advisory mandate. Outsourcing is one mechanism to promote pluralistic service provision.

DISCUSSION

Rural advisory services (RAS) implies very diverse kinds of services provided by a wide range of actors, such as public agencies, input vendors, processing companies, cooperatives, NGOs, producer organisations, media and individual advisers, all funded by different sources. Today's RAS has evolved from the earlier understanding of agricultural producers as beneficiaries of the services, to an understanding that sees producers as clients capable of demanding the services they need. A demand-led pluralistic RAS system would also provide a new set of services for increased competitiveness and improved market linkages, including technical know-how, understanding the markets, their requirement, business management, networking and partnerships, as well as organizational development to facilitate change in value chains. A demand-led, pluralistic and market-oriented RAS requires innovative financing mechanisms that enable farmers, their organisations or communities to take greater responsibility for the advisory services, by identifying their needs, developing priorities and negotiating the services they want from a variety of qualified service providers, and where the service providers are accountable to the farmers. The existing financing mechanisms, which are primarily supporting the supply side, i.e. financing of the advisory system and its services, are not appropriate for this purpose (see Figure 5.1 below).

FIGURE 5.1: Supply- and demand-side financing models



Key:
AEAS = Agricultural Extension and Advisory Services

Financing mechanisms include:

- sources of funds;
- directions in which the funds flow; and
- mode by which the funds are collected.

The design of financing mechanisms is shaped by:

- clients or users of the RAS services;
- RAS services provided;
- context and framework conditions; and
- RAS organizations that provide the services.

Combinations of these elements make up approaches to financing RAS (Katz, 2002).

The Common Framework on Financing Agricultural and Rural Extension (Neuchâtel Initiative, 2002) illustrated and provided policy advice regarding different financing mechanisms that would promote empowerment of the users of the services through increasing accountability of the services towards the users, such as:

Financial participation by the users, through:

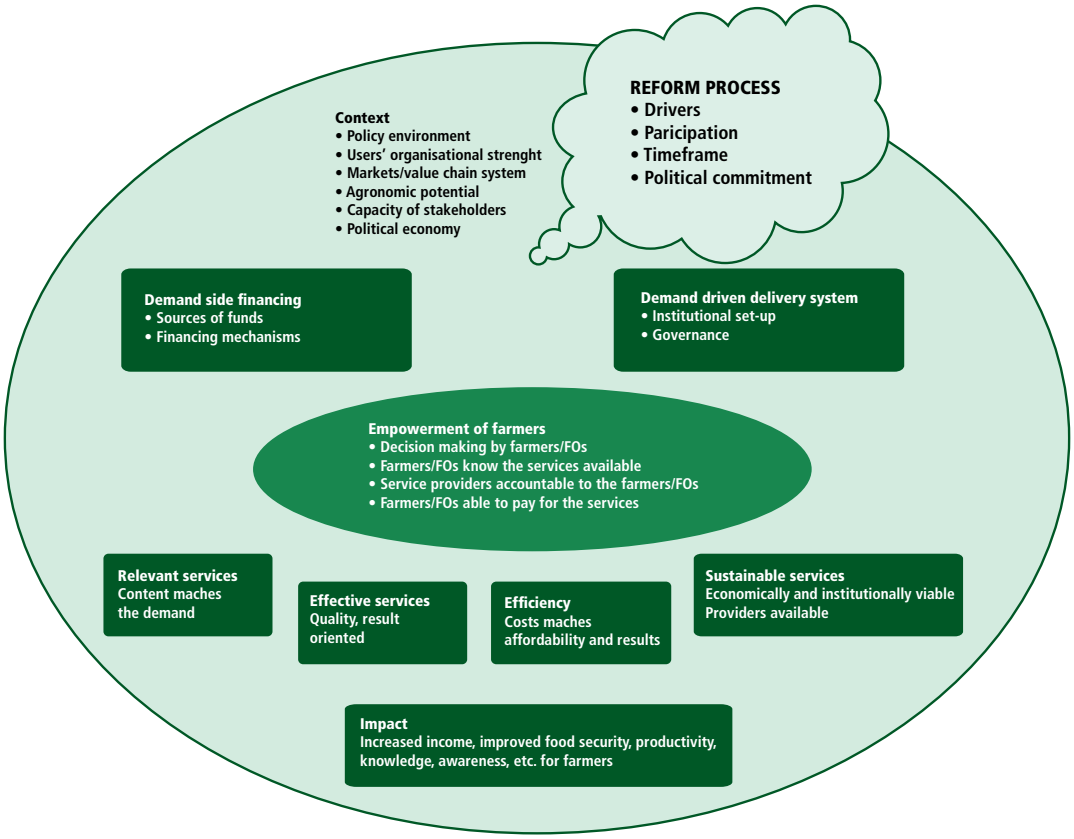
- direct payment for services by the users;
- indirect payment through membership fees;
- indirect through production levies, taxes, etc.
- public funds channelled through the users or their organizations to pay for services; or
- service provision by producer-owned organizations.

Experience indicates that by adopting a financing model where the finances flow through the users of the services, the users will be empowered and enabled to articulate and negotiate their demand for services; and the accountability of the service providers towards the users will also increase, leading to increased relevance and effectiveness of the agricultural advisory services.

Chipeta and Blum (2018) developed a framework for analysing demand-driven RAS and impacts. This describes how reforms in financing are expected to change the impact of RAS and how financing for the demand side will make the service providers more accountable to the users, and empower producers and their organizations. The definition of the financing system is here the combination of various types of sources and mechanisms for financing RAS. Demand side financing alongside demand-driven service systems (defined as an institutional set-up and governance system that promote demand-drive) will empower the users by making them become part of decision making regarding which service providers they want and which knowledge, information or technology they need to improve farm management, sustainable productivity, family welfare, etc. Moreover, the users will have increased knowledge regarding the services

available and the input of funds will increase the financial capacity of users to access the services that they need. The combined effect of this will make the service providers accountable to the users.

FIGURE 5.2: Framework for analysing demand-driven RAS and the impacts



Source: Chipeta and Blum, 2018.

Financing RAS

In the past, extension was seen to be a public good, provided by public-sector agencies and financed by public resources. This is no longer the case, as:

- extension/advisory systems are now recognized as encompassing an assortment of public and private goods;
- public agencies are but one channel by which farmers and other value chain actors access information and services;
- readiness to finance RAS from public resources has been (until recently) decreasing; and
- it has been recognized that the willingness of the clients of extension to pay for services was underestimated in the past (Christoplos, 2010).

Extension investments have been made by donors, various governments, NGOs and the private sector. The type and level of investments varied considerably in the past decades, especially as extension approaches came into vogue or became less popular (Davis and Heemskerk, 2012).

There are quite a number of different traditional ways of financing agricultural extension and advisory organizations (adapted from Van den Ban, 2000):

As a government service:

- paid by taxpayers; or
- paid by a levy on a specific agricultural product.

As a commercial enterprise:

- selling inputs to farmers and/or buying their products, which in its relationship with its customers is also providing advisory services.

As a farmer association:

- which pays for advisory services from its membership fees; or
- which is subsidized by the government.

As a cooperative:

- using levies from members' profits to finance RAS and other services.

As an NGO that is financed by:

- donations from inside or outside the country;
- commercial companies for public relations purposes; or
- subsidies from, or contracts with, the government (either the national or a donor government).

As a consulting firm which:

- charges a fee from the farmers, who are its customers; or
- is paid by government as an outsourced service.

As a publishing firm that:

- sells agricultural journals or other publications to the farmer; or

As various combinations of all the above.

- For example, a government pays the salaries of agricultural advisory agents whilst most of the operational expenses are covered by a producers' association.

The mechanisms through which a RAS organization is financed can affect the decisions it makes and the services it provides. As Van den Ban notes, these decisions may relate to the organization's goals, target groups, advisory methods used and knowledge provided, internal organization and cooperation with other organizations promoting agricultural development (Van den Ban, 2000). Decisions made regarding these issues have implications for the ways in which RAS supports farmers. For example, when public funds are channelled through the users, producers or their organizations, this is found to lead to increased farmer empowerment and accountability of the services towards the users (Chipeta and Blum, 2018) as well as to an increase in number of service providers, hence "pluralism", as the farmers have the choice of selecting which service provider they would prefer.

Hoffman (2011) argues that public funding is important for extension, as extension contributes to public welfare.

Public funding can be directed to resource-poor farmers, disadvantaged groups and remote areas, and can include interventions that need a longer-term perspective (soil fertility, agro-forestry, water catchment management, etc.). These circumstances justify at least partial funding of RAS from public sources (Schmidt and Fischler, 2012). An increasing proportion of RAS services are now being implemented by non-public, service providers (NGOs, POs, private enterprises, etc.). This requires public investment in non-public services when these services address non-profitable poverty and climate change objectives (Blum and Szonyi, 2014).

Increasingly, RAS is provided and financed by the private sector, either by:

- linking the provision of RAS to the supply of inputs or equipment (sometimes called embedded services), whereby the costs of the agricultural inputs (sale of seeds, fertilizers, pesticides, breeding animals, veterinary drugs, etc.) would cover the costs for RAS services; or
- financing RAS from the margin between the procurement price and the sales price (e.g. processors or traders) (Schmidt and Fischler, 2012).

In many countries, services for relatively well-off commercial farmers are increasingly dominated by private advisory services (Christoplos, 2010). Decline of public extension agencies has also stimulated the growth of private advisory services. Private-sector firms and farmer-based organizations are currently establishing their own advisory services, especially for high-value-added products for export. For instance, the Maharashtra State Grape Growers Association in India has a fully-fledged extension facility to advise their member growers (27 000 registered members, with approximately 80 000 ha of land under grape). In Colombia, the Narino Dairy Products Cooperative (COLACTEOS) provides advisory and other services to members as embedded services fully financed through their own processing and marketing activities (Escobar, 2018).

Swanson and Rajalahti (2010) noted that for an extension organization to be fully functional, about 30 percent of the budget should be allocated for programme and operational expenses, another 5 percent for capital costs and not more than 65 percent for salaries and personal emoluments (benefits). However, in many low-income countries, public investment has been almost reduced to paying only salaries of the public extension advisors (Blum and Szonyi, 2014). Cost recovery and cost-sharing helps in these cases, provided the organization is capable of offering services deserving payment by its clients. All farmers, rich or poor, are ready to pay for at least a portion of the cost of services they receive if they really perceive value for the service in question. Successful implementation of such schemes, however, requires understanding of farmers' motivation to pay for services.

Options for financing and service provision

There are various options. Regardless of whether RAS services are financed by farmers, the government or commercial actors, it is essential to retain an open mind about which service provider should then be contracted to provide the service. It is important to note that in a pluralistic RAS system, the source of financial resources does not predetermine who provides the service.

The following combinations of different sources with services provided by various providers –"mixed funding models"– are thinkable and increasingly applied in the real world (Table 5.1).

In summary, the inference from Table 5.1 is that experimenting with a wide range of funding and service provision options is inherent in promoting pluralistic RAS.

In addition to the examples described above, there are a growing number of ways that RAS systems are being mobilized in more sustainable ways through financing reform. These include:

- financing cash crop advisory services by farmers through levies on crops, the levies being then earmarked for re-investment in research and RAS;
- levies on food crop import as taxes to be used for extension/advisory funds managed by POs;
- performance bonuses for extension advisors, paid by small groups of farmers receiving a specific service;
- small in-kind contributions to para-professional community extension advisors;
- financial contributions by POs to access to RAS services; or
- embedding of costs of RAS within indexed-based insurance schemes that are being subsidized as part of climate change adaptation measures based on the assumption that farmers who are able to lower their production risks should receive lower insurance premiums (Christoplos, 2010).

TABLE 5.1: Options for financing and service provision of RAS

SOURCES OF FINANCE FOR SERVICES	SERVICE PROVIDERS (SPs)					
	Public sector	Private Sector			Civil Society	
		Input Suppliers	Processors or traders	Private RAS providers	NGOs	POs
Public	Public-sector services	Publicly funded contracts or subsidies to private SP			Publicly-funded contracts to NGOs; Publicly-funded NGO providing free services	Publicly funded contracts or subsidies to POs
NGOs	Publicly-funded contracts to NGOs; Publicly-funded NGO providing free services	Publicly funded contracts or subsidies to POs			NGOs hire other NGOs as SP	SP hired by NGOs and paid for by PO
Private Companies	Public sector SP hired by private companies	SP hired by companies, often linked to sale of inputs (embedded services)	SP hired by companies, often linked to procurement of agricultural products	SP hired by private companies	Private sector contracts NGOs as SP	Private sector contracts to PO as SP
Producers and other clients	Public sector SP hired by clients or POs	Specialized) services hired and paid for by clients	(Specialized services hired and paid for by clients	SP hired by clients of POs	Farmers hire NGOs for services	PO as SP to own members
POs	Public sector SP hired by POs	Private SP hired and paid by POs			POs contract NGOs for services	SP hired by POs as a free service to farmers

Source: Adapted by authors from Schmidt and Fischler, 2012.

Another way of financing RAS is to use farmer innovation funds – a mechanism through which individual farmers or farmer groups, businesses or other stakeholders who wish to adapt, develop or adopt innovation and business initiatives are provided with direct, simple competitive access to small grants or loan (Triomphe *et al.*, 2012). For instance Local Innovation Support Funds (LISFs) were initiated in the PROLINOVA network to test if and how research and innovation funding could be channelled to, governed by and accessed by small-scale farmers through small grants (typically a few hundred dollars or less) for developing innovation of their own choice (see case study). Another type of farmer innovation funds is competitive grants programmes (CGPs), where the focus is on commercially oriented, small-to-medium size farmer groups and small rural business. CGP Grants are generally much larger than LISF grants (typically USD 10 000 or more) Grants include funding for investments to set up the innovative activity, for external technical assistance, and for advising producers on technology and demonstrating it to other farmers and stakeholders.

Donors are also financing producer organizations to improve their capacity to support producers in accessing RAS and other services. World Bank programmes in West Africa have provided assistance to producer organizations in Senegal, Guinea, Mali and Burkina Faso. Assistance was provided to national, regional and local POs to gain professional and financial knowledge and to enable the provision of services to allow associations to advise members on technologies and know-how (FAO, 2010). In India, the National Bank for Agricultural and Rural Development (NABARD) set up a Producer Organization Development Fund (PODF) in 2011, to support POs. Support in the form of grants, loans or a combination of these is available for capacity development and market interventions.

Experience shows that by adopting a financing model where the finances flow through the users of the services (demand-side), the users will be empowered and better able to articulate and negotiate their demands for services. In the same way, the accountability of the service providers towards the users will also increase, leading to increased relevance and effectiveness of the agricultural advisory services (Chipeta and Blum, 2018). However, practical experience, for example with vouchers, shows that administering vouchers in effective ways – especially ways that avoid fraud – requires a capable public sector and well-informed farmers who can hold service providers and state agencies accountable (Feder, Birner and Anderson, 2011). To avoid corruption, Nigeria introduced a system via mobile phones through which poor farmers receive directly vouchers for fertilizer and seeds.

Cost recovery and cost sharing strategies

Recovery of the cost of advisory services through user charges is seen as having several objectives: easing the burden on public funds, stimulating private sector participation in service provision, and making services accountable to farmers as paying clients (Kidd *et al.*, 2000; Onoh, 2015; Chipeta and Blum, 2018). In this context, cost recovery would depend to an extent on the viability of agricultural markets and the ability of farmers or POs to pay for services. Repartition of costs is seen to be an important development in that it commits stakeholders to share the burden of funding RAS, and thereby encourages them to recognize, appreciate and influence the value of it.

Various cost recovery strategies exist – from systems in which governments and private organizations charge for providing RAS information, to arrangements whereby advisors or technicians work with farmers on the basis of a fee-based contract.

In Denmark, POs were provided with public grants to subsidize the salaries of advisers employed by the POs. The subsidies were combined with farmer/user payments and this has gradually developed to full user payment (see case study). In France, about 7 000 advisors are employed by and work under the direction of the Chambers of Agriculture in each province. Under this arrangement, each farmer pays a flat tax based on the number of hectares farmed, regardless of what crop, livestock or other agricultural products are produced. The Chamber then allocates advisors based on the predominant crop and livestock systems in each area of the province and throughout the country. This approach primarily serves the needs of smaller and medium-scale farmers, while large-scale, commercial farmers get more of their advisory services from private-sector input suppliers (Swanson, 2008).

In Germany, advisory services recover the costs of their services through several means. These include: billing on hourly rates, billing on fixed rates for a certain time frame, provision of advisory packets, payment based on specific advisory topics, membership fees and daily rates (Paul *et al.*, 2014). In the United States of America, the cooperative extension service has developed detailed guidelines on cost recovery, including classification of services under no cost recovery, partial cost recovery and full cost recovery categories. Customized programmes developed for a specific group, individual or business and non-educational costs such as meals and refreshments, are always subject to full cost recovery.

The Chinese Government tested several different approaches to recovering the cost of public extension services from farmers (see Nie *et al.*, 2002). In terms of crop extension services, each county and township extension office established a Commercial Agricultural Store (input supply) adjacent to the Agro-Technical Extension Office, where farmers could get one-on-one technical advice about specific crop varieties and fertilizers, if they bought their inputs from this store. Under this model, most of the cost of extension services was recovered from the sale of production inputs, and the actual number of extension staff increased. In the case of livestock, Chinese farmers were expected to pay for specific services (i.e. artificial insemination, vaccinations). Again, the cost of extension services was largely covered through the sale of these services. The model does confirm that the sale of production inputs can be directly linked to recovering the cost of one-on-one advisory services to farmers (Swanson, 2008). However, where input sales through the private sector is well established and where environmental concerns regarding over-fertilization dominate, preference should be given to other cost-recovery models.

Willingness to Pay

Commercial farmers producing high value crop or livestock products for secured markets presumably are more willing to pay for advice than farmers whose profit margins are small and who operate in uncertain markets (Crowder and Anderson, 2002). Based on an empirical study in Uganda, Ulimwengu and Sanyal (2011) noted that farmers formerly with access to agricultural and extension services are less willing to pay for them. The study also found that without proper access to markets, farmers are less likely to pay for agricultural services. Regardless of the type of agricultural services, land ownership increases farmers' willingness to pay and that the level of farming income plays a major role in the decision of whether to pay for agricultural services.

In a study by Onoh (2015) on willingness to pay for agricultural extension services in southeast Nigeria, it was found that farmers felt that paying for extension services would encourage their involvement in the programme planning process, which improves services provision. The study also showed that farmers are currently paying for extension services in homestead fish production, poultry and animal feed productions: services that are relevant to them. In Bangladesh a study by Uddin, E. Qijie and & Mamun-Ur-Rashid (2016) showed that a paid model can contribute to improve quality of extension services, if coupled with a market-oriented commodity-based approach, accompanied by adequate crop insurance support. Finally, in Pakistan, Ahmad *et al.* (2011) noted that farmers are willing to pay for marketing service, credit service and crop insurance – services that are currently not provided by either the public or private sector.

In other words, the ability and willingness to finance service provision varies according to location, target group, commodity and institutional framework. Hanson and Just (2001) argue that "a universal movement toward paid

extension is not in the public interest, while optimality calls for a mix of public, private and paid extension, including policy support for private extension."

Outsourcing of rural advisory services or RAS programmes

Outsourcing is a business process term that refers to the contracting out of tasks and services that are either not (or no longer) considered to be the core business of a particular enterprise, or that can be achieved more efficiently by contracting specialized agencies. Outsourcing is then an arrangement whereby an enterprise enters into a contract with an external supplier to provide goods and/or services that were previously provided internally.

The contracted freelancer performs a specified task (or tasks) for an organization when that organization does not have the time or expertise to fulfil the task itself, or when the organization recognizes that there are alternative suppliers who can perform the task more effectively, efficiently and/or cheaply. In the case of agricultural advisory services, outsourcing is a way of contracting private expertise (including NGOs and farmers' organizations) into an agricultural advisory services system that mainly deals with public goods (Heemskerk, Nederlof and Wennink, 2008).

Advantages and Disadvantages

Summary, based on Rivera, Zijp and Alex (2000), and expanded by current authors.

Advantages

- reduces permanent staff requirements and allows deployment of resources to high-priority areas;
- allows for using providers with special skills to provide specific services;
- promotes partnerships and working relationships with other providers to create synergies;
- enhances flexibility in responding to special needs of diverse clientele;
- tests innovative and higher risk "new" systems;
- increases provider accountability to the contractor and forces more attention on financial management;
- increases accountability to clients if they have a say as to which service provider will be sub-contracted, or if they can apply for funding and contract the service provider themselves. This results in a more demand-led service provision scenario; and
- enhances the emergence of multiple RAS providers, hence creating or strengthening the pluralistic RAS system.

Disadvantages

- institutional memory may be lost; some private providers may not pass on new skills and lessons learned, if this is not a requirement;
- increases the need for skills of contract negotiation, supervision, and monitoring performance;
- high initial costs (if not offset by staff reductions); and
- contracts tend to be short term and cover rather specific tasks, rather than complex, long-term interventions. Hence continuity over a longer period might not be given and needs to get particular attention.

Advantages and disadvantages needs to be looked at before deciding on outsourcing and the way it would be done.

Considerations for out-sourcing

Procurement, funding and the actual provision of advisory services are key operations in outsourcing (Birner *et al.*, 2006). Three main operational issues need to be addressed with regard to all modalities of outsourcing and advisory service contracting in general (Heemskerk, Nederlof and Wennink, 2008):

- *Performance-based contracting*. Performance needs to be included in contracts by establishing monitorable targets, for both public and private sector providers.
- *Competitive bidding and selection*. Competition can be used to select private service providers. However, negotiation and coordination may be more fruitful when contracting farmers' organizations and public-sector agencies.
- *Inclusion in outsourcing*. One of the major dilemmas is that the users who most urgently need agricultural advisory services are often the weakest stakeholders in the contracting process. These users often cannot prepare good proposals and/or provide co-financing; demand greater social and economic impact; with different contracted projects competing for the same target group. This sometimes leads to situations in which public authorities (have to) act on behalf of the ultimate clients.

A case study by Berdegué commissioned by FAO, shows the experience of outsourcing in Chile. This funding mechanism in Chile has enhanced pluralistic RAS provision with a strong and significant role for the government, who defines the themes for the calls for proposals. It is based on competitive grants for service providers (public extension providers, local government, and private advisory services, including consultants as well as POs). Producers are involved and need to request for the services. The public grants mechanism is in principle combined with a user financial contribution of about 10 percent (Berdegué, 2018).

Outsourcing can serve as an integral part of a longer-term strategic vision for RAS. In developing this vision, RAS will need to consider:

- core functions in which public RAS providers are most competent and hence should continue to perform;
- structure and collaboration of advisory services – roles, operation, management, types of services and competency;
- cost efficiency and effectiveness in reaching specific target groups, especially the poor and disadvantaged groups (e.g. women, youth, etc.), farms in remote areas, and performing roles and services;
- the comparative advantages of all the various players; and
- availability of resources needed to provide effective and responsive services.

Government will also want to examine the options available, including the technical, managerial and operational capacity of various providers. Short- and long-term costs and benefits of using various contractors should be examined and compared. Some other considerations and needed capacities would include:

- developing the expertise and capacity to prepare and negotiate contracts, to monitor the performance of the contractor, and to evaluate performance in terms of cost and achievement of the stated objectives;
- preserving institutional memory with the agency rather than the contractor; and
- ensuring that the work to be done, or service to be provided, is sufficiently specific to allow for a contract to be precise and clear as to the responsibilities of the parties involved and the product(s) expected.

The objectives of any agreement should be clear and, to the extent possible, unambiguous. The parties involved in the agreement should also be capable of verification by the monitoring of verifiable indicators.

Case Studies

CASE 5.1: CHECKLIST FOR CONTRACTING OUT EXTENSION AND ADVISORY SERVICES

The case of DAAS provides a unique example of a long-term (approximately 150 years), farmer led development of agricultural advisory services, where public funds were used to assist producer organizations in developing their own services. These funds were provided directly to POs as subsidies for the agricultural advisers' salaries and thus complemented user payment for services. The case also provides an example of gradual development towards full user payment.

DAAS started back in 1870s. The services were, and are still, provided by POs and cooperatives in a decentralized system, where the local POs employ the advisers in autonomous local advisory centres. When the smallholder farmers established their own Smallholder Farmers' Associations separate from the POs during 1900 to 1914, they also established their own advisory services. The advisory services to farmers have traditionally included all the areas of farm operation: Crop and horticulture production, livestock husbandry, organic farming, farm management and accounting, legal advice and home economics. Recently, a commercial enterprise was created and merged with a Dutch company for provision of horticultural advice. The support services for the autonomous decentralized advisory centres are provided by a central institution, the Knowledge Centre for Agriculture established in 1982, The Knowledge Centre for Agriculture is owned by the farmers' federation "Danish Agriculture and Food Council'.

The focus of the advisory services is to increase productivity. It is a strong principle of the advisory services in Denmark that the services are independent from commercial interests, so institutionally the advisory services are separate from the processing and marketing cooperative. There is, however, strong collaboration between the market actors and the advisers in the sense of working on quality aspects. The agricultural advisory services are well integrated in the innovation system. The Knowledge Centre for Agriculture is responsible for a large programme of adapted research – the farm and field trial system that tests all new technologies on-farm before they are applied. Moreover, the advisory services have a long tradition of collaboration, with the agricultural research and function as a bridge between farmers

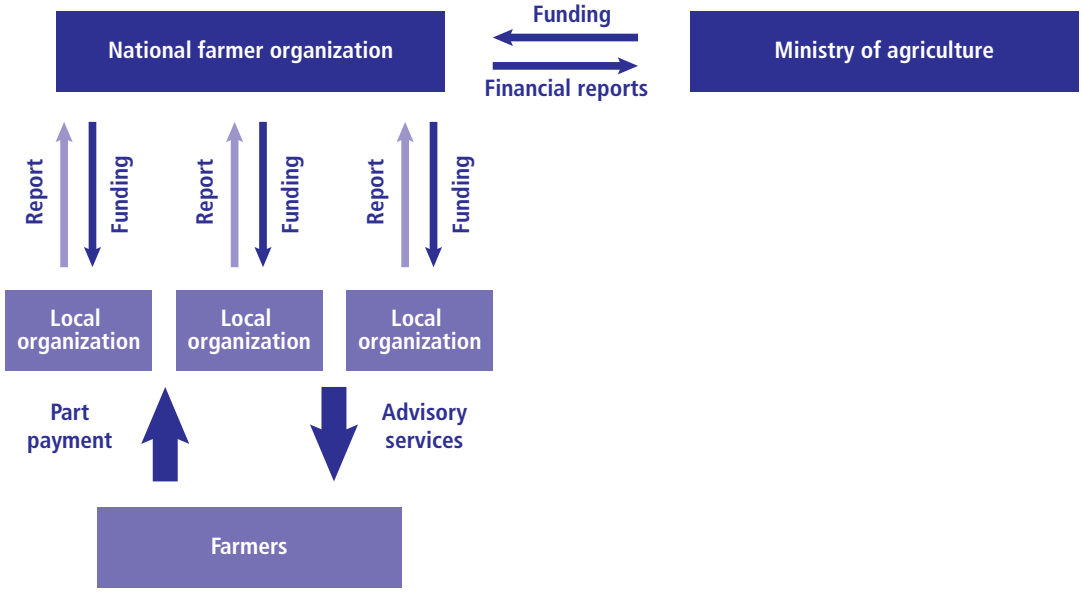
and research, both for dissemination of research results through the advisers, newspaper articles and seminars or providing response from the farms to research through participation in the research governing bodies, or both.

The advisory services have traditionally had a focus on male farmers. Only a few women participated in the training and advisory services. An exception was the smallholder farmers' organizations. The gender roles on smallholders differed from bigger farms as these depended much more on the full participation of the whole family in the farming activities. When the Smallholder Associations started, they had a focus on the entire family and both husband and wife on a farm were voting members by constitution. From the beginning, it became a tradition for husbands and wives to go together for the meetings and specialized courses were organized for women – particularly in livestock production topics such as poultry production and calf rearing.

The accountability of the advisory services to the farmers was, and is still, secured in two ways: First of all the services are fully governed by the POs and the advisers are fully accountable to the farmers' organizations as they are employees of these. Secondly, the farmers always contributed a considerable part, not less than half, of the costs for the service from their own pockets, which also contributes to holding the advisers accountable. During the period of Government subsidy for the advisers' salaries, the Government set educational standards for the advisers. Otherwise, quality assurance has been part of the accountability to the employers of the advisers – the POs and the individual clients.

From 1887 and through to the 1920s, the financing of the advisory services was that half of the advisers' salaries were provided as the government subsidies, and half derived in part from farmers' membership fees to their organizations and part from direct payments for services. Gradually this developed to 100 percent farmer payment (from 2004). Figure 5.3 shows the funding mechanism for advisory services as it was under the Law for Agricultural Advisers. As seen here the system was rather simple. The national farmers' organizations received the funding and were responsible for the administration and reporting to the Government. The funds are distributed to the local organizations as subsidies to the advisers' salaries.

FIGURE 5.3: The funding mechanism for advisory services under the Law for Agricultural Advisers

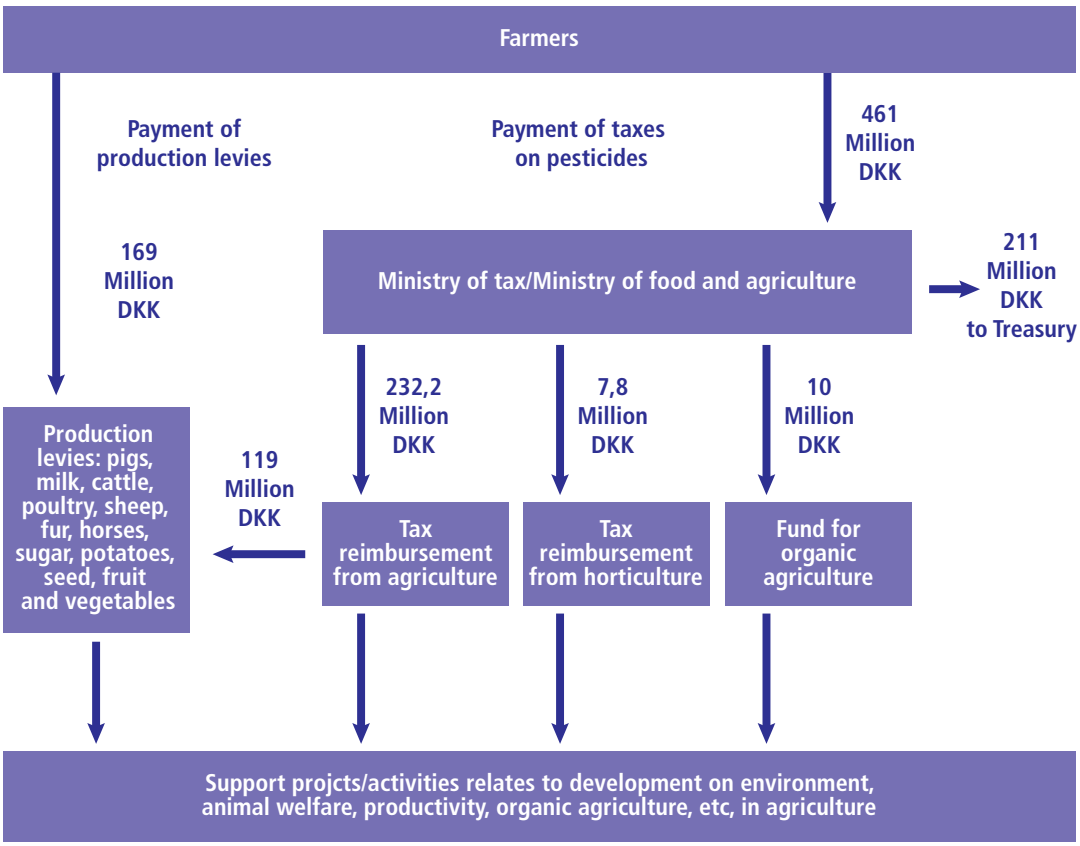


The national support services from the Knowledge Centre for Agriculture are financed partly through users' direct payment of services and partly through funds from chemical taxes and production levies.

The funds from production levies and tax reimbursement represent a grey zone between private and public funds. The Danish agricultural sector has a long history of collecting production levies on its own. The production levies are financing important common development issues for the sector, which the individual producer or company cannot address on their own. When Denmark entered the EEC in 1972, it became necessary to institute the levies by law and the agricultural sector therefore requested the Government to do this and the funds have now its legal framework in the Law on Agricultural Support. Thereby, the funds became public funds, but the agreement was that the sector's own organizations continued to determine the size of the levy and also to administer its use. The funds are used for

common development purposes such as adapted research and development. The funds are provided as competitive grants for development projects to different institutions in the agricultural sector and they are important for financing the common development work in the Knowledge Centre for Agriculture. Figure 5.4 illustrates the flow of funds.

FIGURE 5.4: Flow and distribution of agricultural funds



Source: **Chipeta, S.** 2015. *Innovations in financing mechanisms for demand-driven agricultural advisory services. Evolution of the Danish model*. Rome, FAO. (also available at: www.fao.org/3/a-i5117e.pdf).

CASE 5.2: FARMER-MANAGED INNOVATION FUNDS

The Local Innovation Support Fund (LISF) is a new institutional arrangement for joint learning and innovation by farmers and other key actors in agricultural development. This has been promoted by PROLINOVA (Promoting Local Innovation in ecologically oriented agriculture, and natural resource management (NRM)), an international network spread over 19 countries in Africa, Asia and Latin America. It gives small-scale producers – men and women – the means to design, implement and evaluate their own processes of exploration and development. It supports decentralized farmer-led experiments and sharing of findings, through both farmer-to-farmer and formal advisory channels. It stimulates farmers to identify how other actors – especially agricultural advisers and scientists – can support farmers' efforts to improve their farming systems. PROLINOVA partners hypothesized that this power balance would change if farmers controlled the funds for local experimentation and learning.

The coordinating NGOs facilitate multi-stakeholder learning platforms that guide and reflect on the piloting process. Decisions about use of the funds are usually made at district or zonal level by Fund Management Committees (FMCs). The management committees for LISFs – usually district-based – involve in some cases only farmers, in other cases also other local actors. These local networks are linked through a national PROLINNOVA platform of actors from state and non-state organizations who seek to integrate farmer-led participatory research and extension, based on local innovation, into mainstream research, development and education.

The FMCs, usually with 5 to 10 members, are responsible for making the LISF known, organizing calls for proposals, clarifying funding modalities (grant size, co-funding share, etc.), screening applications, overseeing fund disbursement, and M&E of the activities funded and results. Farmers – individuals or groups – can thus access small grants to further explore ideas that they regard as worthwhile, particularly for resource-poor households. The LISFs are designed to be easily accessible to smallholders through simple application procedures and rapid fund-disbursement modalities.

Grants can be used for various purposes and types of innovation, including technical ones (e.g. improved production or processing of farm produce), organizational ones (e.g. creating better access to input, service and produce markets) or institutional ones (e.g. adjusting local rules for NRM). Grants may be used for small-scale experimentation on one's own farm, joint experimentation by farmers and other actors (extension advisors, researchers, etc.), sharing experiences and results, and other learning events. Besides generating locally relevant innovations, the LISF process is meant to strengthen farmers' individual and collective capacity to innovate and to influence formal research and extension.

Over half of the grants made available to farmers through the LISFs have been spent on farmers' own or farmer-led joint experimentation, covering the costs directly related to the experimentation, e.g. notebooks, measuring equipment, protective clothing and documentation equipment and materials. The other major activities funded have been learning events such as training of farmer innovators, farmer-to-farmer or farmer-to-researchers visits to find out about local innovations and possibilities.

In six of the eight countries, the funds were made available to farmers as grants. In Cambodia and Uganda, the FMCs decided that the funds should be given primarily as loans, to be paid back by the experimenting farmers, if their experiments were successful and brought them financial gains. In Tanzania, the experimenting farmers have made partial repayments in kind.

The topics of innovation and experimentation have been diverse, including issues related to:

- **Crop and animal husbandry:** devising inexpensive animal rations using locally available feed, treating animal disease with local plants, selecting germplasm adapted to local conditions, controlling plant diseases such as bacterial wilt, developing bio-pesticides, devising effective water-harvesting methods;
- **Marketing**: developing niche markets for honeybee feed and hives, and for medicinal plants; ways of raising and selling saplings for on-farm trees;
- **Natural resource management:** increasing biodiversity and combating deforestation through regeneration of endangered native tree species of economic value; and
- **Social innovation:** forming local groups to develop and demonstrate innovations; improving savings and credit schemes; refining locally developed livestock-based social insurance system for children in HIV/AIDS-challenged communities.

Impact. The impact assessments in late 2010 revealed important changes at community level in better producer organization and improved the provision and effectiveness of advisory services. Involvement of different actors in piloting LISFs contributed to:

- stimulating local innovation initiatives and sharing of new ideas among farmers and with outsiders;
- strengthening farmer self-organisation around locally relevant research and development issues, and increasing the capacities of these farmer groups to handle their own innovation and learning funds;
- increasing the capacity of smallholders to access relevant agricultural and NRM information;
- building the farmers' capacities to formulate their own research and extension needs;
- increasing the farmers' confidence to interact with "outsiders" (whether from government or private sector) in joint investigation of new possibilities to improve their farming and livelihoods;
- enhancing community capacities to critically examine external interventions and to make informed decisions as to whether to participate or not; and
- stimulating interest of development agents and researchers to support farmer-led innovation.

LISFs are still being tested: more work is needed to learn from the pilot experiences in the various countries, to adapt the LISF concept to different institutional settings and to embed it in local structures and procedures. Comparative research is needed into how agricultural support services transform themselves to be able to support farmer-led innovation. It will be especially important to work with producer organizations to scale up LISFs countrywide and to mobilize funds from in-country sources, while making sure that the smallholder focus and the farmer-led character of the LISFs are retained.

Source

Waters-Bayer, A., van Veldhuizen, L., Wongtschowski, M., Wettasinha, C., Triomphe, B., Mekonnen, F., Krone, A., Letty, B., Manandhar, S., Tiwari, P., Vitou, S., Mudhara, M., Shezi, N., Donati A., Kaburire, L., Macoloo, C., Kamau, G., Nganga, T., Kirigua, V., Sekate M., Nchor, J., Lambon,J., Araya, H. & Fenta, T. 2011. Farmer-Managed Innovation Funds drive multi-stakeholder learning processes. Paper presented at the International Conference on Innovations in Extension and Advisory Services, Nairobi, 15–18 November 2011.

SUMMARY

Sustainable RAS provision needs government and private sector commitment and effective, multiple forms of financing to meet the diverse needs and demand of farmers. Nearly all governments invest in extension and RAS services, often with the help of donor funds and loans. Global public investments in extension were estimated at USD 6 billion in 1988, but in subsequent decades, public investment generally decreased, while the financing sources and hence the RAS providers became more divers. The recent 2007/08 food crisis and concerns about the ability to sustainably meet growing demand for agricultural products, have contributed to a change in this trend.

Many governments have over the years reduced their investment in extension and advisory services, leaving the services without operational resources and forced to continue providing blanket recommendations promoted through ever-repeated demonstration trials. While there is a case for strengthening public RAS, future investments in RAS should recognize the wide range of client demands and the potential for strengthening the capacities of the diverse RAS providers.

RAS can be financed and provided by a number of organizations in the public, private and NGO sector, including community-based organizations and POs. This diversity of financial sources is important to reach greater sustainability of RAS. New approaches to providing and financing agricultural advisory services include decentralization of public services to lower levels of government, involving POs, cooperatives and NGOs, contracting-out of RAS services, public-private partnerships, embedding advisory services in other types of contracts, and broadening the types of advisory methods applied, including the use of modern ICTs.

Investments in promoting a market for RAS service providers and in developing RAS programmes that benefit smallholders are required. The quality of spending is as important as the overall spending. Additional investments should be focused on the priority investments of information, technology and market access (including infrastructure) and capacity development of RAS to increase efficiency and effectiveness. Investments are also needed for capacity development of POs to enhance demand for RAS, and hence relevance.

The role of financial contribution by users (co-financing mechanisms) should be considered as fundamental. The more directly the users contribute to financing services, the stronger is the potential of ownership and their empowerment. Overall, users should be involved in the governance and management of the funds and financing mechanisms of the supply, as well as the demand, which will make them more relevant to their needs and demands. In particular, the role that POs can play is paramount in providing demand-led and relevant services for their members.

Despite calls for privatization of service provision, government must play a continuing role in financing extension and advisory services. It should play an important role in making sure that RAS are available to subsistence farmers, marginalized communities, the poor and women. At the same time, diverse financial sources are required to make service provision more inclusive and sustainable. Many tasks related to regulation, quality control and coordination can only be handled effectively by the government. Yet, collaboration with the RAS community and POs is crucial. In addition, the governments should also invest in monitoring and evaluation of the overall performance of pluralistic RAS systems and its services. This requires developing capacities for conceptualizing and implementing monitoring systems which can only be done in partnership with the RAS stakeholders and POs and by using modern ICT facilities.

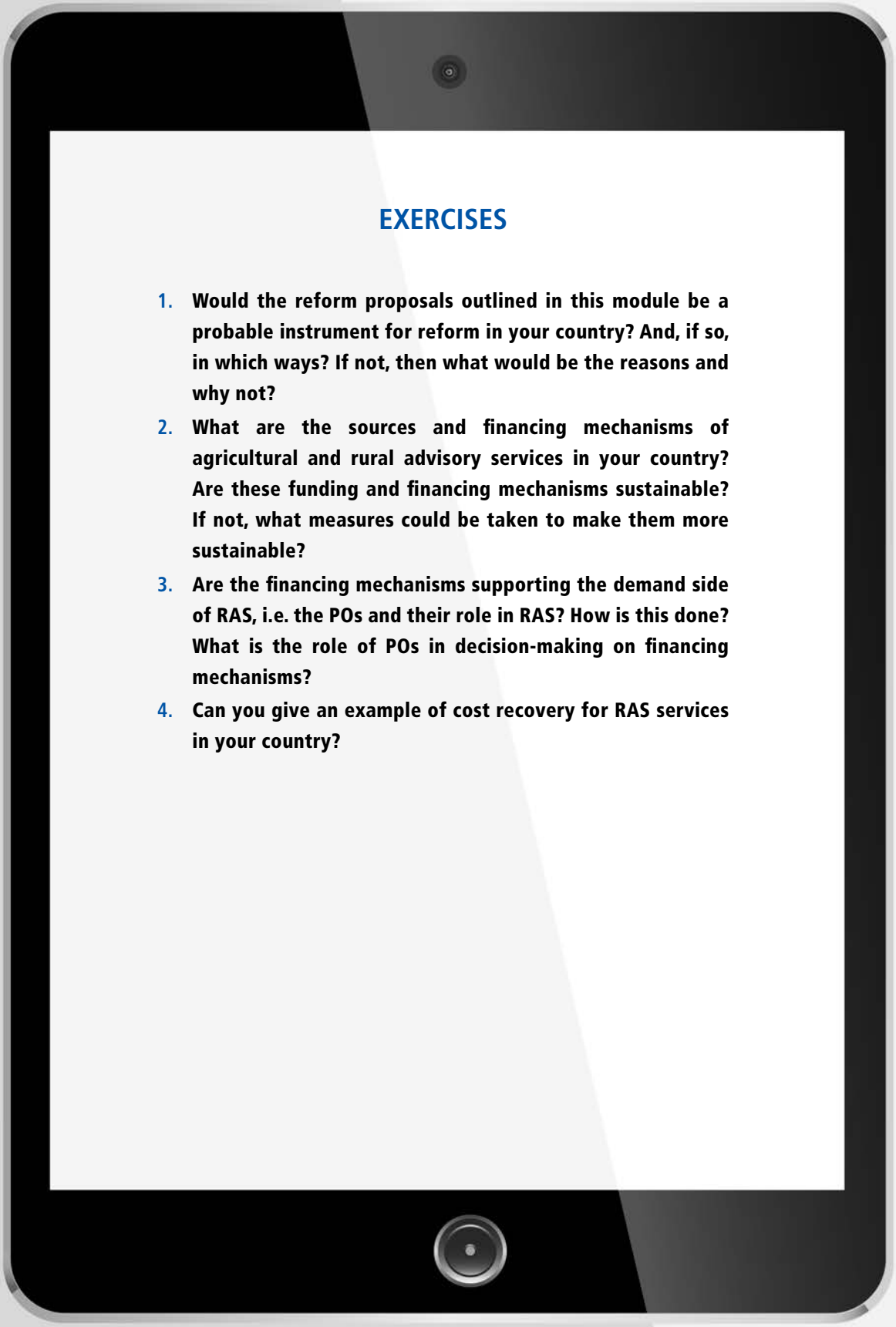
TOOLS

TOOL 5.1: FOR FURTHER STUDY

Checklist for contracting out extension and advisory services

- roles and responsibilities of the parties involved;
- terms of reference, with specific tasks to be performed and results to be achieved;
- objectives and purpose of the contract;
- results or products to be produced;
- costs in total, and by type, of main expenditure. Specify services to be provided and, where applicable, specify the service methodology, staff qualifications and experience, and other inputs;
- the time frame of the contract, with procedure for extension if necessary;
- actions to be taken in case of conflict of interest;
- resolution of disputes;
- names and designations of the officials of the respective parties;
- reporting and other information requirements, including the format, general content and timing of reports;
- specify ownership of information and products;
- liability of the respective parties in cases of accident, loss or damage to property and/or staff of both parties;
- means of monitoring and supervising the work. Specify expected contractor performance. Where applicable, specify incentives for good performance and sanctions for non-performance. Define what constitutes non-performance;
- state the indicators to be used for assessing performance and impact, and clarify responsible person for monitoring performance and impact;
- risks involved, if any, and how they would be mitigated;
- responsibilities for project management, if applicable;
- process and/or actions for termination of the contract;
- geographic areas, products and target group to be covered;
- in the case of staff secondment or attachment, specify terms and conditions of employment including all emoluments and allowances. For cost sharing, state the share and the responsibilities for payment;
- state procedures for cost sharing, and for staff attachment, dismissal or replacement in case of sickness, accident, poor performance or death;
- ensure linkages between contracted extension staff and government research units. Contracted extension staff should be in regular contact with government research organizations and stay updated on new findings. Also, feedback from field staff to research is essential to guide the research focus; and
- omissions, if any; procedure for dealing with situations and developments not covered within the agreement.

Source: Rivera, Zijp and Alex, 2000.



EXERCISES

1. **Would the reform proposals outlined in this module be a probable instrument for reform in your country? And, if so, in which ways? If not, then what would be the reasons and why not?**
2. **What are the sources and financing mechanisms of agricultural and rural advisory services in your country? Are these funding and financing mechanisms sustainable? If not, what measures could be taken to make them more sustainable?**
3. **Are the financing mechanisms supporting the demand side of RAS, i.e. the POs and their role in RAS? How is this done? What is the role of POs in decision-making on financing mechanisms?**
4. **Can you give an example of cost recovery for RAS services in your country?**

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MODULE 6: Role of public actors in RAS governance and service provision

By Blum, M.L., Sulaiman, V.R. and Cofini, F.

OBJECTIVES

1. to review the changing roles and responsibilities of public actors in RAS governance and service provision;
2. to review the institutional arrangements in public RAS systems such as the level of decentralization or privatization, and links to pluralism of RAS;
3. to examine the government's role in (co-)coordinating pluralistic RAS systems; and
4. to examine issues related to partnerships with other sectors, including producers and POs.

INTRODUCTION

The role of public actors in RAS governance and service provision has greatly changed, reflecting the changing institutional landscape in service provision, as well as relating to prevailing global trends, changing development visions and concepts. The linear research-extension-farmer model with focus on technology dissemination moved towards an interactive concept within a pluralistic RAS system and the wider innovation system based on joint learning and innovation in a participatory and inter-disciplinary way. Such an interactive concept embedded in a multi-stakeholder framework implies different visions, interests and capacities of the institutions involved. RAS functions have widened from technology dissemination and non-formal education to include institutional change as well as networking and brokering. All these trends require in turn new and strengthened management capacities of public RAS to govern and (co-)coordinate the pluralistic RAS system and strengthen its collaboration with other innovation actors in order to address complex food security and poverty challenges by using multi-disciplinary teams to find innovative solutions adapted to the different conditions in various territories.

Extension provision has been decentralized and privatized in many countries. Dissatisfaction with public extension services for inadequate services and lack of accountability to farmers, dwindling public resources, and donor pressure in the 1990s to privatize extension services, all influenced this process. This led to an increased importance of local governments and other actors, including private dealers, NGOs, civil society organizations and producer organizations (POs), who came in to provide advice to farmers, and hence a pluralistic advisory service system evolved. While a pluralistic service system may contribute to the development of a new incentive system in which the quality and content of RAS provision are more responsive to farmers' priorities (Chapman and Tripp, 2003), it also requires a strong presence of the national government in ensuring that public goods are provided (food security, poverty reduction, etc.) and nobody is left behind (social equity). As public services need to ensure public goods-related services, RAS services provided by government concentrate often on remote areas, areas which are affected by climate change, natural resource depletion, etc. and target poorer sections of the farming community. As outlined above, a much more integrated approach would be required with joint goals that integrate inter-disciplinary teams and other resources for greater impact.

A key concept to understanding RAS governance in the era of pluralism is the fact that financing sources are separated from the provision of services. Public funds can be used for the provision of services by POs, NGOs or private service providers. Overall, numerous combinations of financing sources and service providers are possible (as discussed in module 2 on pluralism).

The present module will review the changing roles of public actors in RAS and the changes that occurred in public service provision as a result of pluralistic service provision. It will look at certain types of RAS functions that were decentralized and others that remained at national level. It will also examine the pluralistic provision of RAS, and in particular the complementary roles of public and private actors and tasks of the public sector actors in RAS governance.

DEFINITIONS

Government

Government has several meanings. These meanings are those pertinent to this module:

- the governing authority of a political unit;
- the system or form by which a community or other political unit is governed;
- the act of governing;
- exercising authority; and, in politics; and
- the study of government of states and other political units.

Governance in RAS systems

Governance in RAS systems refers to the administrative, institutional and organizational structures, rules and processes within which RAS services are embedded. At the heart of governance lie complex questions of how advisory services are steered, at what level decisions for budget, design, implementation and evaluation of RAS services are made, and how authority is exercised. In pre-dominantly public systems, governance has clear lines of command and is determined by the level of decentralization, privatization and public-private partnerships. Governance of pluralistic systems differ largely and require multi-stakeholder involvement, including civil society, in policy formulation, decision-making and joint responsibility for programmes. Networking and coordination across the different public, private and civil society actors, monitoring and evaluation; as well as accountability and compliance mechanisms need to be jointly defined and adapted based on experience and circumstances.

Administrative decentralization

Administrative decentralization seeks to redistribute authority, responsibility and funding of public services among different statal levels. It is the transfer of responsibility for the planning, financing and management of certain public functions from the central government and its agencies to field units, subordinate levels, semi-autonomous public authorities or corporations, or area-wide, regional or functional authorities. The major forms of administrative decentralization include de-concentration, delegation, devolution and transfer to non-government institutions. (Rondinelli, 1987).

Fiscal decentralization

Financial responsibility is a core component of decentralization. If local governments and private organizations are to carry out decentralized functions effectively, they must have an adequate level of revenues, either raised locally or transferred from the central government, as well as the authority to make decisions about expenditures.

Privatization, and Economic or market decentralization

The most complete forms of decentralization from a government's perspective are privatization and deregulation, because they shift responsibility for functions from the public to the private sector. Privatization and deregulation are usually, but not always, accompanied by economic liberalization and market development policies. They allow functions that had been primarily or exclusively the responsibility of government to be carried out by businesses, community groups, cooperatives, private voluntary associations and other non-governmental organizations (NGOs).

Privatization can range in scope from leaving the provision of goods and services entirely to the free operation of the market, to "public-private partnerships" in which government and the private sector cooperate to provide services or infrastructure. Privatization, broadly conceived, can include:

- allowing private enterprises to perform functions that had previously been monopolized by government;
- promoting cost-recovery agendas; and
- contracting out the provision or management of public services or facilities to commercial enterprises.

Institutional pluralism

Institutional pluralism refers to institutional diversity of advisory providers. In this use of the term 'pluralism', the assumption is that there will be public, private, non-governmental and community involvement in extending knowledge, know-how, information and technologies by professional advisors and para-professionals concerned with the problems and potential of agricultural development and rural transformation.

DISCUSSION

CHANGING ROLES AND TASKS OF PUBLIC RAS

The Role of the Public Sector

The evolving array of RAS providers requires contributors to reconsider policy development for RAS. Such reconsideration may measurably alter the role assigned to public sector RAS. Specifically, in addition to its role as a functional and cooperative agent working with the private sectors, public sector RAS (in order to make informed decisions) is confronted by the following possible tasks:

- to take into account the complexity of advisory services, their purposes and target groups; and in doing so; and
- to assume, or at least consider, its potential role as an instrument for "initiating and (co-)coordinating" the agricultural advisory system as a whole.

If such a "coordinative role" is assumed, then government must re-examine other roles and responsibilities confronting it.

Specifically, then, the larger questions are:

- What should be the role of the public sector vis-à-vis the private sector and the advent of multiple providers of agricultural information?
- Should public RAS target audiences not be served by the private sector?
- To what extend should public agencies coordinate multiple RAS providers? To what extend are new multi-stakeholder platforms required to orient and coordinate service provision?
- Should government serve as the final reference or arbitrator of conflicting information?
- Should government assure accountability of both public and private RAS services to the public?
- Should government facilitate the operation of the RAS system (the multi-institutional array of services) to provide rational regulation and information provision?

The answers to these questions lie in one's socio-political judgment, institutional RAS landscape, technical perspective and the specifics of the situation.

Viewing public sector RAS as only one among many providers of RAS services may actually facilitate analysis and informed decisions on how best to orient, coordinate and provide RAS within the complex of diffused responsibility. Why? Because one sees more clearly that the debate on the role of the public sector is not limited to the context of RAS but encompasses the larger concerns of the role of government, public policy reform, and institutional and organizational strategic development.

Extension has been traditionally associated with a set of functions undertaken by national government agents providing advice and information to farmers. Today advisory services are provided by multiple actors, including POs, NGOs, and private sector entities, and through alternative arrangements such as public-private partnerships, innovation platforms and multi-disciplinary governance bodies. Rural advisory services include private and public goods. In the provision of private goods, such as advice, provided to commercial farmers, many actors (e.g. POs, private sector) emerge to provide services in a more efficient, flexible and timely manner. However, private advisory services often assist a limited clientele, primarily related to high-value products and markets and relatively well-off producers (GFRAS, 2010). Also RAS include many tasks related to public goods, such as natural resource management, climate change adaptation, food security and poverty reduction. Governments – national governments or state/provincial governments in decentralized countries – can assume responsibility for ensuring that RAS services deliver needed public goods that affect the state as a whole (Rivera and Alex, 2004a). Furthermore national governments are well placed to promote increased institutional pluralism in RAS provision and oversee the quality enhancement and assurance necessary for sustainable agricultural growth and

rural transformation. It has to be remarked that the public sector can also delegate the provision of public goods to other actors such as NGOs, POs, and the private sector, while maintaining the oversight responsibility to ensure that services are provided correctly. Multi-stakeholder national RAS platforms as a pluralistic governance system could be spearheaded by government, or could be managed jointly by the various actors represented.

The National Agricultural Sector Extension Policy (June 2012) in Kenya, for example, foresees the following roles and tasks for Government:

- promote pluralism in extension service delivery, and institute mechanisms to coordinate extension services for improved quality of services;
- continue to be involved in providing agricultural extension services either directly (using existing Government institutions) or indirectly (e.g. contracting out to private sector service providers and universities or colleges), mainly in areas where private sector participation is still low (e.g. in arid or semi-arid areas) with special attention to vulnerable groups;
- invest in building capacity of extension service providers (ESPs), extension clientele and relevant institutions; and
- promote decentralized extension service provision through clientele organizations and other grassroot institutions or forums organized at all levels, in line with governmental devolved structures.

Institutional changes and challenges

Public RAS services have undergone a number of institutional changes over the past decades due to structural adjustments, shrinking public budgets, democratization processes and promotion of the private sector, leading to decentralization and privatization of services. Also, the new development concept of innovation through inter-disciplinary arrangements and increased use of information and communication technologies (ICTs) in RAS influences the way public and private services are operating.

An appropriate balance of centralized and decentralized functions needs to be established, depending on the institutional settings and tasks to be performed. Even when national governments decentralize responsibilities, they often retain important policy and supervisory roles. They must create or maintain "enabling conditions" through policies that allow local units of administration, civil society organizations and the private sector to take on more responsibilities. Central ministries often have crucial roles in promoting and sustaining decentralization by developing appropriate and effective national policies and regulations for decentralization and strengthening local institutional capacity to assume responsibility for new functions. The success of decentralization frequently depends heavily on capacity development for both national and local units and its staff. Technical assistance is often required for local governments, private enterprises and local non-governmental groups in the planning, financing and management of decentralized functions.

Also in RAS, the provision of some functions by central government agencies remain justifiable, largely for economies of scale, oversight and equity reasons. Central government has important oversight, co-ordination, supervision and inter-regional distributional roles to play (Cabral, 2011). A centralized knowledge management architecture is critical for knowledge exchange, monitoring and evaluation, learning and innovation and scaling up of good practices. While it is crucial that government initiates and orients such knowledge hubs, it is also vital that all the various knowledge institutions (service providers, research, training institutions, indigenous knowledge institutions, etc.) contribute, not only in terms of content, but also in terms of managing and maintaining such knowledge platforms.

Decentralized structures' roles are not very different, but are performed at the local level. Most importantly, coordination between the various levels as well as horizontal coordination needs to be maintained, otherwise the system becomes fractured and cannot perform. This requires institutional and organizational support to a multi-stakeholder approach in which the stakeholders agree on common goals, results and activities.

Decentralizing RAS functions

Decentralizing RAS functions to grassroot level is considered as a good idea as services work then closely with farmers at the local level and conditions are created for greater accountability to farmers. The national system in most cases does not take into consideration the problems of farmers because it looks at national issues that are affecting the country as a whole. Rivera (1996) observes that extension decentralization has been dominated by three policy directions:

1. to decentralize the burden of extension costs through fiscal system re-design that provides for greater local government participation in financing and managing extension;
2. to decentralize extension through structural reform, with the goal of improving institutional responsiveness and accountability to clients; and
3. to decentralize the management of extension through farmer-participatory involvement in decision-making and responsibility for extension programmes.

BOX 6.1: What and when to decentralize: key issues

Centralization and decentralization are not "either-or" conditions. In most countries an appropriate **balance of centralized and decentralized functions** is essential for effective and efficient policy and programme development and implementation. Each country has a unique set of conditions, needs and challenges that affect what type of decentralization should be implemented. The specific services to be decentralized and the type of decentralization will depend on economies of scale affecting technical efficiency and the degree of spillover effects beyond jurisdictional boundaries. These are issues that need to be taken into account in the design of a decentralized system. In practice, all services do not need to be decentralized in the same way or to the same degree (World Bank, 2000).

Following the **principle of subsidiarity**, a function should not be decentralized to a lower level if it is critical in the achievement of central-level goals and its sustainability at the local level cannot be guaranteed, the capacity to perform the function does not exist or the function at this level is not cost-effective. While decentralization is primarily a political process, it will not be successful unless adequate provision is made to finance the devolved or de-concentrated responsibilities (Work, 2002).

Decentralizing weak states may compound the problems, and small island states may not be ideal candidates. An appropriate balance of centralization and decentralization is essential, and there needs to be complementary attention to central government. Decentralization requires a strong central entity to regulate, to provide an overall framework to manage the re-allocation of responsibilities and resources in a predictable and transparent way and to assist local governments build capacity in the early stages (ODI, 2002)

Decentralization not only gives local government control over personnel and finances, but in theory focuses control closer to the level of farmers. It needs to be applied in such a way that it can improve RAS accountability to farmers. Decentralized extension functions have long been a feature of federal countries such as United States, Canada, Germany, Brazil, India, Republic of South Africa and many others with overlapping financial and administrative responsibility for RAS at federal, state and local levels. Public rural extension in Brazil is characterized by a decentralized model, where state agencies receive federal and/or state funds to provide rural extension and technical assistance to farmers, free of charge. In parallel, private firms and farmer organizations (including cooperatives, foundations and no-till farmer associations) provide technical advice on specific topics (Sette and Ekboir, 2013).

In India, the Directorate of Extension of the Department of Agriculture and Co-operation (DAC) under the Central Ministry of Agriculture provides policy guidelines and operational backstopping to the state level advisory organizations. It also funds selected schemes (e.g. the Agricultural Technology Management Agency) which are implemented through the State Department of Agriculture (DoA). Each state (29 states and 7 Union Territories) has its own Department of Agriculture, which has extension staff up to the District and Block levels, and the state implements several extension programmes with Central and State support. The Agricultural Extension Division of the Indian Council of Agricultural Research (ICAR) funds 638 Krishi Vigyan Kendras (Farm Science Centres) which are located in almost every District with a mandate of promoting technology application through on-farm trials, demonstrations and training (Sulaiman, 2012).

In South Africa, the national-level Department of Agriculture, Forestry and Fisheries (DAFF) plays a policy and supporting role for making advisory services effective, e.g. through a national recovery plan which set norms and standards to improve professionalism. However, the national level does not provide RAS services directly to farmers. South Africa has nine provinces and all of them have their individual departments of agriculture that are responsible for the management and provision of extension and RAS services to subsistence, emerging and smallholder commercial farmers.

The type of decentralized structure is equally critical, as this will determine the quality of services. When transferring or delegating extension/RAS function responsibilities to entities at the lower or grassroots level, a choice is sometimes involved: between shifting authority to local governments, or to decentralized ministry departments, or to local community groups, including POs, or a combination. Important considerations are that economies of scale and scope are not compromised, quality of advisory knowledge and skills is maintained and that all costs and benefits are internalized. For instance administrative units like municipalities often do not have agricultural competence, compared with specialized organizations like the Department of Agriculture. Before decentralizing extension to lower levels of the Government, it would be useful to assess and support the preparedness by officials at lower levels of government and leaders at the institutional level to accommodate new planning and fiscal responsibilities. Giving responsibility for programs to local communities or producer organizations, is an attractive option as it integrates rural actors into programme design and implementation.

Public extension and advisory provision have been decentralized in many countries. However, there are limits to what can be achieved. Not all government functions can or should be decentralized. There should also be a careful

consideration of the types of functions to be decentralized and to which level and organizations functions should be transferred to.

Semi-autonomous RAS agencies

In quite a number of countries, the Government decided in the course of the structural adjustment or revitalization of RAS programmes to delegate the functions of RAS provision to semi-autonomous RAS agencies, specifically created for this purpose. This increased the autonomy and hence flexibility in managing advisory services compared with ministry-based extension departments which have to adhere to the administrative procedures of the Ministry. Examples of such semi-autonomous RAS agencies are: Agence National de Conseil Agricole et Rural (ANCAR) in Senegal; Office National de Conseil Agricole (ONCA) in Morocco; the National Agricultural Services Agency (ANADER) in Cote D'Ivoire; the Agricultural Technology Management Agency (ATMA) in India; among others. Some of these agencies have introduced new institutional arrangements for their governance through multi-stakeholder governance boards that include POs and the private sector. They have also pursued new strategies and approaches, such as bringing in more systematic demand articulation by POs, forming producer groups to facilitate marketing of their produce or emphasizing market-orientation through collaboration with commodity organizations.

Privatization of public advisory services

In the case of privatization, government withdraws from providing public RAS services. This can be fully or only related to certain services, for example in areas where other service providers would have a comparative advantage. The move to privatize agricultural extension services, Qamar (2006) notes, did not start overnight; it has taken years to develop and pick up momentum. He gives several reasons as to how privatization came about. His points include:

- dissatisfaction with public extension services;
- entry of other actors in extension;
- dwindling public funding for extension;
- donor pressure to privatize extension; and
- eagerness for potential profits in agribusiness.

In many developed countries, such as The Netherlands, England, Denmark and Australia, where extension has already been completely privatized or commercialized, the private advisory services appear to be doing well. Each of these services has hundreds, if not thousands, of member farmers who pay fees on a regular basis in return for excellent benefits and advice that enhance their income. In South Tyrol (Northern Italy), the biggest single apple producing area in Europe, cooperatives and other private service providers offer advisory services on quality production of apples, promote learning, keep close contact with research, watch on local weather and issues alerts on a specific radio frequency to its members (de Meyer, 2014). In Denmark, the Danish Agricultural Advisory Service (DAAS) enjoys the membership of thousands of small-scale producers. Farmers pay the salaries of its private advisors operating from advisory centers and get the most profitable farm business plans, tax returns and account sheets prepared by the advisors (Chipeta, 2015).

There is a general belief that the private sector is more efficient and cost effective than the government in running certain public services. Private companies are normally smaller and hence more flexible than government bureaucracies, which helps them to take action more quickly when needed. They also have necessary resources and are better equipped to provide a good quality and timely service at lower cost. Of course, profit making is the ultimate motive of private companies. Sectors like communication, railways, industries, education and health have been privatized in many developed countries. The trend towards privatization is now also expanding in less developed countries. Areas like agricultural advisory services, which involves long-term investment in human behavioural change, are not as attractive to the private sector as are those which give quick and positive returns on their investment. Still, there are components within RAS such as the sale of farm inputs like seed, fertilizer and agrochemicals, and advisory services for the same, which could promise an almost instant gain of profit.

The characteristics of the information service influence whether it is best supplied by the private, voluntary, or public sectors (Umali-Deininger, 1997). Implications are that:

- Information closely associated with market goods (i.e. purchased inputs) is best left to the private sector.
- Information associated with toll goods can be effectively provided by combined public and private sector efforts.
- Information relative to management of common pool goods (water, forests, common grazing lands) is best provided by cooperative or voluntary institutions; and only when market and participation failures are high should public goods information be disseminated by the public sector.

However, what services are best to be performed by which stakeholder can only be decided in a given context and based on what capacities the different RAS providers have that respond to the actual demand of men and women small-scale producers.

In its pure sense, privatization implies full transfer of ownership (usually by way of sale) from government to a private entity, with that entity meeting all costs and receiving any profits (Rivera and Cary, 1997). In most cases, governments have not actually privatized their agricultural extension services in this sense. In developing countries, the push was to be towards toward "partial" privatization whereby the public sector funds and the private sector delivers extension services, usually through outsourcing, i.e. via contracting, arrangements (Rivera and Zijp, 2002).

In many countries, privatization (often undertaken by the mere withdrawal of funding for public sector agencies) resulted in the majority of farmers losing access to advice. This experience showed that creation of a level playing field for private advisory providers is very important, but that this needs to be part of a wider reform process that promotes pluralism while recognizing the need for public financial support (Christoplos, 2010). Cox and Ortegar (2003) noted that after 25 years of implementation, the problems with Chile's privatized extension service are still complex. A very thorough evaluation conducted in 1998 found that the programme had positive economic impacts, but that several severe problems remain. A critical issue has been the lack of a social control mechanism ensuring client satisfaction and ownership.

Even in those countries, with total or complete privatization of extension, such as New Zealand, England and Wales, and The Netherlands, the government is subsidizing indirectly by employing private service providers to meet broad public interests such as environment and food safety-related services (Ghimire, 2003). The United Kingdom has felt the need to re-establish an in-house advisory capacity in the form of the 'Rural Development Service' and to contract private sector providers to deliver this public interest advice (Garforth, 2003) to achieve its policy goals for environment, food safety, and rural development.

Based on privatization experiences from a number of countries, Connolly (2004) noted that privatization policies alone, no matter how worthy, cannot be translated into effective practice without well-conceived and designed systemic change processes (recognizing and fostering holism and interdependence among all actors) and contingent programmes for local human capacity development. There are no models or external prescriptions that are entirely appropriate or applicable to the particular needs of individual countries and therefore, relevant experiences from other countries or regions have to carefully screened, tested, and adapted under local conditions.

If the poor are to attain and retain access to RAS it has now been recognized that public finance is essential. However, this does not mean a return to the free public service approaches of the past. Publicly funded but privately provided RAS can be combined with measures to place resources at the disposal of poor farmers and their organizations. Most importantly, the way these services are contracted can greatly enhance the accountability of RAS to farmers.

Privatization alone is not the solution to all the problems from which government agencies may suffer. Different types of RAS providers exist in most countries and there is an increasing recognition of the need for a pluralistic RAS system to meet the diverse advisory needs of farmers. The debate about whether advisory services should be public or private is ongoing and there is as yet no clear evidence based on experience to favour one side or the other, but there is one point of consensus in favour of a mixed pattern (Hoffman, 2011). Again, with the important growth of ICT and high-tech supported services, new service providers will shape the institutional landscape of RAS in the future.

Global experience has shown that appropriate roles for public sector agencies will differ from place to place and over time, depending to what extent the private and civil society services are developed. This has led to a shift of focus from blanket statements about who should provide advisory services, to a search for better ways to guarantee that all service providers are genuinely accountable to the clients – male and female, poor and rich – that they serve. A major role for the state as enabler of a pluralistic RAS system will be to empower the rural poor to meet their own needs and to make effective demands on providers of RAS, inputs, marketing advice, and other types of services. In this context, it might pursue varying combinations of the following six options (Hess *et al.*, 2007):

- enhancing skills that increase producers' power to negotiate (knowledge of marketing, quality control, certification, etc.);
- improving infrastructure that increases producers' power to negotiate by not having to sell the harvest immediately (storage, processing and other post-harvest technologies);
- building organizations and institutions that increase producers' power to negotiate and demand services;
- encouraging the existence of more than one person for the poor to negotiate with (policies that provide incentives for more competition among traders and a more dynamic service economy);
- shifting control of the production process to producers by strengthening capacity to manage linkages of credit, processing, marketing, quality control and input supply; and
- encouraging diversification to avoid dependence on one crop, buyer or processing structure.

COORDINATION OF PLURALISTIC RAS SYSTEMS

Discussion of pluralism and institutional linkages sets the stage for considering pluralism in partnerships, and partnerships with the private sector.

Pluralism and institutional linkages

Pluralism is central to the reform proposals reviewed in this course. It seeks to ensure cooperation and collaboration between the public and private sectors. Civil society organizations are a part of this pluralistic scenario, and therefore form an important player in the determination of what is "good" in the public (community- and farm-level) interest.

There are multiple systems within the public sector, and often multiple providers of RAS outside the public sector, that are carried out by the private sector. In short, advisory functions are carried out by diverse private enterprises:

- *profit organizations*, including domestic enterprises (large farm estates, domestic firms and cooperatives) and multi-national enterprises and their subsidiaries;
- *membership associations,* e.g. farmer associations or POs; and
- *non-profit organizations, e.g.* NGOs.

Domestic and multi-national firms, despite certain differences, share a common market orientation: they all seek to make a profit by selling goods and services. Membership associations share an interest in profit making, but are not set up for that purpose. NGOs, in general, are non-profit. Different providers will tend to emphasize different functions – whether information or technology transfer, education by way of farm-management training, or problem solving through on-farm and office consultation. This complexity of provision and purpose is, in large part, what makes discussion of RAS difficult and sometimes confusing or seemingly contradictory. In fact,

- One cannot make informed decisions about RAS systems without understanding the pluralism of RAS providers and their purposes, etc.
- The public sector has an important role to play, not only in developing a public sector advisory service or set of services, particularly in areas with an comparative advantage, but also in coordinating and cooperating with the RAS "pluri-system".
- There are different roles and responsibilities that have been traditionally associated with the public sector which however have changed over time.

These might, at least in certain contexts, include:

- a direct role, attending targeted clientele, particularly disadvantaged groups or remote and areas;
- a (co-)coordinating role;
- a preferred information role (final referee or arbitrator role);
- an accountability and regulatory role; and
- perhaps still other roles.

Pluralism is a basic principle that implies coordination and sometimes partnerships with farmer organizations and private venture companies. In a pluralistic RAS arrangement, government will need to facilitate national and regional platforms, multi-stakeholder processes and partnerships to discuss and determine with major stakeholders the value and importance of RAS, and how best to organize in a systematic fashion the varied RAS activities, recognizing the various providers of such services, namely public and private companies, farmer associations, cooperatives, NGOs and (possibly) community-based associations. Common answers must be found to questions such as: Who will be responsible for which areas, on which topic and for what purposes? Which complex problems require the effort of complementary competences and services? Commitment to pluralism is central to enhancing extension reform.

BOX 6.2: Continuing public sector roles within a pluralistic system of advisory services

- Funding of advisory services
- Promoting advisory services of private sector and civil society
- Delivery of advisory services related to public goods
  - Poverty reduction, Sustainable Development Goals (SDGs) and food security
  - Environment and climate change
  - Areas with comparative advantages
- Shared coordination of advisory services
  - Identification of gaps, creating synergies, avoiding duplications
  - Representation of service provider
- Monitoring and evaluation
  - Identification of advisory needs and gaps
  - Mapping of service providers
  - Audits (out-sourcing, etc.)
  - Outcome and impact of advisory services for policy formulation

Source: **Blum, M.L.** 2008. Trends, frameworks and requirements for a comprehensive approach to advisory services in Africa. Presentation at the FAO/ADB 6th Thematic Meeting. Rome, 8 January 2008.

From pluralism to partnerships

Pluralism, like other subjects related to agriculture and extension, provokes debate and cautionary notes. For example, in referring to Bolivia, Bebbington and Kopp (1998) state

> *"...the increasing tendency of government to engage in contractual arrangements with NGOs, under which the NGOs merely implemented government programmes, has often served to weaken the identity and legitimacy of NGOs, although it did provide them with much-needed funding."*

Similarly, Anderson and Crowder, in discussing public-private partnerships, argue that "contracting out tends to be an administrative or technocratic approach where governments and/or donors promote contracting for a variety of fairly economic rationales. They note that government may try and keep methodological and conceptual control, which can limit learning and flexibility. In fact they state, "While often advocating the existence of several partners, these approaches do little to encourage pluralistic partnerships..." (Anderson and Crowder, 2000). These comments emphasize that no single reform measure can be considered a panacea, rather, all are works in progress dependent on the context, commitment, resources, capacity, attitudes and motivations of the stakeholders at the various levels.

Certainly there is nothing particularly new about having multiple providers (public, private and non-governmental) of advisory services in a country, or even in a region. The critical question that remains then, is whether public sector funding of private providers, and the apparent pluralism inherent therein, will actually result in viable and meaningful pluralistic partnerships among the various service providers? Though subject to criticism, government-led pluralism remains one means for developing countries to expand and improve RAS's range and effectiveness. However, financing of RAS needs to have multiple sources and co-financing mechanisms in order to develop equal partnerships and a market for service provision responding in a more efficient and effective way to service demand. Institutional and financial pluralism promises, particularly combined with more systematic service demand, an increased accountability to users and more inclusive services.

A partnership implies reciprocal equal input by the various parties involved. In some countries (e.g. South Korea and Taiwan), farmer associations are equal partners with decentralized government authorities. In other countries (e.g. Israel), farmers may contract in for services, ensuring an equal partnership since decisions regarding the provision of field services are made by the farmer associations. More recently, other forms of public sector partnership have emerged involving government funding (e.g. Chile, Hungary and Venezuela). Where government funds private providers for field services, however, the question remains as to the equality of the partnership.

The basic principles of partnerships are usually the establishment and operation of field services including budget sharing, joint management of services. The involved parties will provide complementary advisory and other services, engage in technology development, provide knowledge and information and act as the authoritative professional

bodies in the technical, social or other fields and services covered in the partnership agreement. Transparency and sharing of experiences are key to successful partnerships.

While contractual institutional partnerships may be disputed as to their authenticity as partnerships, they nonetheless appear to be needed in some cases to meet the growing demand for food, and to sustain the natural resource base during a period of declining public investment in research and extension (Swanson, 1997). Swanson argues that new institutional partnerships allow for cooperation with, rather than competition against, private agricultural development firms. He notes that private sector firms have the resources and comparative advantage to produce and distribute various types of proprietary technology, such as improved cultivars and agrochemicals. In the process, both the technology development and transfer costs of these proprietary technologies are passed along to farmers, and ultimately to consumers. By associating the private sector component with a national technology system, Swanson claims that the system becomes more sustainable (Swanson, 1997).

Interdependency of Government and pluralistic RAS

The role of government in coordinating pluralistic RAS systems may involve a number of complementary functions and mutual benefits on the part of RAS as well as government. Table 6.1 lists a number of interdependencies between government and pluralistic extension systems.

TABLE 6.1: Interdependencies of government and pluralistic extension systems

	FUNCTION	RATIONALE
Government needs extension for:	Public policy implementation	Implementation of public policies that enhance the public good often requires the education and mobilization of rural people to change behaviour - an objective for which extension may be the best or only tool available to national governments.
	Information collection	Information on agricultural conditions and rural populations can often be collected most easily and accurately by extension agents already active in the field and knowledgeable about the rural areas.
	Dealing with emerging concerns	Diverse new issues emerge on the extension agenda as a result of Government having to address new socio-economic, political and technical developments, such as environment impacts of non-source pollution, animal welfare, fair business and employment practices, HIV/AIDS, and other human health issues.
	Responding to emergencies	Only higher levels of government, with the concerted help of local government, can respond effectively to many emergencies, including natural and man-made disasters; and extension (or knowledge advisory) services are often the only widespread network of external – governmental or non-governmental – presence in rural areas
Extension services need government for:	Risk bearing and sharing	Since government has the ability to bear the burden of risk more easily than individual agents, government support may be essential in introducing new Knowledge Advisory System services, which include and promote the institutional capacity of private providers to assume some, if not all, of these services.
	Information provision	Extension services are key users of information on producers, social conditions, production systems, markets and technologies for planning and implementing extension programs; government endorsement enhances the credibility and reliability of information.
	Oversight and regulation	Even when funding and delivery of extension services is left to the private sector, public sector oversight and regulation is important to protect the public. A regulatory function implies a basic set of rules and regulations to define conditions under which extension activities can take place, and to set some standards for service delivery.
	Quality control and enhancement	Extension services rely on key support services, especially the education and training of extension agents and technical support from research and other sources of innovation. Government can bring important economics of scope and scale to extension support activities that other extension service providers lack.
	System coordination	The government's convening authority enables it to bring different service providers together to exchange information, develop new partnerships and collaborative mechanisms and establish acceptable division of labour. This government coordination can improve overall efficiency and effectiveness of pluralistic extension services.
	Promoting reform	Extension reform requires a policy vision and a national strategy for implementation, whether it involves decentralization, privatization, new contractual arrangements or user financing. Government must take the lead in defining new approaches and promoting changes in institutional capacity and interrelationships, in order to achieve problem-solving, demand-driven systems of knowledge formation.

Source: Rivera and Alex, 2004b.

Government interdependence with, and need for, extension and RAS, underscores the continuing importance of government (at all levels) to carry out certain functions that only government may be willing to perform. Table 6.1 illustrates how national agricultural advisory systems can be strengthened through policy and good practices that recognize each area of interdependency, its function and rationale.

Other areas of interdependency exist, not least of which is the role of government in developing new paradigms that use advisory services to link farmers and markets. Discussion of the government's role in taking a lead in defining new approaches and promoting changes in institutional and organizational capacity relate as much to multi-stakeholder processes and partnerships, coordination of pluralistic service provision, ICT development and the task of linking farmers to markets, as to advisory content, service operations and monitoring and evaluation of the overall performance (see other Modules).

Case studies

CASE 6.1: DECENTRALIZATION OF EXTENSION IN BRAZIL

During the 1990's, Brazil abolished federal funding for the national rural extension service, placing the responsibility for agricultural extension services on state governments. With the closure of EMBRATER (Brazilian National Rural Extension and Technical Assistance Cooperation) several state rural extension agencies, which were dependent on federal funds (mainly from EMBRATER), closed down. As a result, Brazil's extension services became uneven, as many states in the northeast were either unable or unwilling to financially or logistically support government extension. However, the lack of extension services in the early 1990s provided space for national and international NGOs and private contractors that provided mixed services, especially in the case of dispersed family farms. The decentralized system allowed for the creation of several progressive NGOs but removed the potential for the government to have a national mechanism for directing extension.

In 2003, a new phase of Technical Assistance and Rural Extension (ATER) was initiated. In 2004, the National Policy of Technical Assistance and Rural Extension (PNATER) was established, with participation from both governmental and non-governmental personnel. Under this arrangement, ATER services were carried out by state agencies and NGOs with private contracts. However, since 2003 this form of management and financing has experienced many limitations in terms of bureaucratic inefficiencies, accountability, funding continuity and quality of assistance. These inadequacies have resulted in the limited implementation of the goals and principles of PNATER. In 2010, the government enacted Law No. 12.188, which consolidated PNATER and established the National Programme for Technical Assistance and Rural Extension (PRONATER).

The budget allocation for ATER has increased from just R$46 million in 2003 to R$657 million in 2012 – a 14-fold increase in nine years. Even given this scale-up, the 2012–2013 ATER budget aims to only provide assistance to 480 000 farmers, which is just under 11 percent of the total number of family farmers registered with DAP. The state agencies involved in ATER have set up an association called ASBRAER (Brazilian Association of State Entities for Technical Assistance and Rural Extension) and it co-ordinates with the National Agency for Technical Assistance and Rural Extension (ANATER).

Source

McKay, B. and Nehring, R. 2014. Sustainable agriculture: An Assessment of Brazil's family farm programmes in scaling up agro-ecological food production, Working Paper 1 23. Brasilia, International Policy Centre for Inclusive Growth (IPC-IG).

CASE 6.2: OUTSOURCING OF RAS IN CHILE

As part of an overall neoliberal policy aimed at drastically limiting the participation of the government in any activity that could be conducted by the private sector, extension services were privatized in Chile in 1978. Since then and in particular since the 1990s, many other Latin American Countries have designed extension services based on the so-called "Chilean Model"; a system where services are delivered by private extension agents, financed by the state.

During 1978-1983, the Ministry of Agriculture through the Agricultural and Livestock Development Institute (INDAP), implemented the Entrepreneur Technical Assistance Program (ATE). In this programme, individual small- and medium-scale farmers could obtain fully subsidized, government-issued vouchers with which they could pay for technical assistance provided by an independent agronomist or veterinary doctor. The individual farmer was responsible for

selecting the professional that would provide the services. The farmer could terminate the contract at any time. The system failed completely and was totally discarded. The main reason for the failure of ATE was the false assumption that there was a functional market for technical assistance services in the rural areas of Chile, including adequate supply of competent technical professionals.

This system was replaced in 1983 by an Integral Technology Transfer Programme (PTTI) and subsequently the Basic Technology Transfer Program (PTTB), whereby the government (INDAP-Agricultural Development Institute) decided which private Technology Transfer Consultant firm (CTT) would provide the service in a given area, using a system of public bidding. The majority of the contracts were held by small for-profit consultant firms, constituted by one or two university-level professionals who were the owners of the firm and also acted as field-level advisors to farmers. All aspects of the service were regulated in great detail, including the farmer-to-extensionist ratio and the types, number and frequency of activities. These approaches had a significant impact in raising farm level productivity of the beneficiaries, but its coverage was limited.

In 1993, as part of the improvement plan, the coverage of the programme was doubled to include a large number of farmers from poorer regions. The focus of the programme shifted from increasing productivity to diversification and intensification. The system became more diversified in terms of the types of service providers. NGOs and farmer's organizations became important providers of technical assistance services under contract with the government. Starting in 1997, INDAP implemented a new set of reforms that included shifting the decision on choosing, contracting and evaluating, and also removing the service provider if needed. However a large number of farmer organizations failed to consolidate as a viable self-sustained and self-managed entity. From 2000, a number of changes were implemented, which included INDAP directly funding local governments to establish technical teams to support farmers; implementing specific programmes for indigenous communities; and providing specific technical assistance to improve the competencies of family farms through consultants selected by INDAP.

Source

Berdegué, J. 2018. *Innovations in financing mechanisms for demand driven agricultural advisory services. The Chile case*. Rome, FAO. (also available at: http://www.fao.org/3/CA0423EN/ca0423en.pdf).

CASE 6.3: PRIVATIZATION OF EXTENSION IN MEXICO

Mexico dismantled its national extension service (which once consisted of approximately 25 000 employees) in 1994, and it implemented incentives for the creation of a private extension market founded upon outsourcing and funded through public assistance programs for farmers. A dedicated extension service as such does not exist in Mexico. Instead technical assistance is available to farmers accessing the different support programmes through the private sector contractors, prestadores de servicios profesionales (PSPs) whose role is to implement programmes at the farm level (McMahon and Valdes, 2011). Professional Services, as defined for these purposes, include strategic planning, project formulation, accessing public resources, technical advice, commercial strategies, training, etc., with the goal of helping farmers to increase efficiency and facilitating their incorporation into value chains.

This situation has led to one of the most obvious problems with the system. The driving force behind demand for these services is access to government programmes, eligibility for which requires some element of technical assistance or extension service. Because of this, the PSPs are seen as merely brokers for Federal Support programmes. The professional service organisation is very often the agent that initiates the project but the incentives are for rent-seeking rather than to follow the project to completion and assessment of its impact.

In response to the incentives to create a market for private extension, there has been a proliferation of small companies (despachos) or single individuals offering their services. As of 2010, there were an estimated 8 000 private contractors working under this system However many PSPs are not professionals, which presents a major challenge since they are isolated from the sources of technology and are alone in their interpretation of information. On the demand side, the PSPs are limited in their knowledge and require constant updating to develop professionally but there is no programme to do this. On the supply side, the research institutes, research centres and universities do not have organized programmes for technology transfer, as a result of which the institutions at the field level are not at all connected with one another (McMahon, 2012).

1996, Mexico created Fundaciones Produce – civil society organizations managed by farmers – to manage public funds for research and extension at the state level. They are an important stakeholder in the agricultural sector of Mexico, influencing the design and implementation of agricultural policies, including scientific, technological, and innovation policies, as well as the transformation of public research institutions (Ekboir *et al.*, 2009).

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SUMMARY

Efforts to reform the governance and service provision of existing RAS systems are not new, reflecting governmental need to reduce pressure on public funding, increase RAS performance and improve RAS accountability towards farmers. Decentralization reforms implemented in many countries offered opportunities for fundamental changes in the way in which rural extension services are provided. Transferring programme governance, administration, and management to the local level facilitates user participation and financing, enhances response to local problems and opportunities, increases accountability to clients, and increases programme efficiency. Likewise, privatization was primarily introduced as a measure to improve effectiveness and efficiency of extension and advisory services. However, in many countries, privatization (often undertaken simply by the withdrawal of funding for public sector agencies) resulted in the majority of farmers losing access to impartial and independent advice. Decentralization and privatization processes showed that while efforts are needed to overcome the governance failures inherent in the traditional public sector extension system, they need to be part of a wider reform process promoting pluralism while recognizing the indispensable role of the public sector.

Fully-fledged institutional and operational reforms are required to enable the national advisory system and its services, irrespective of its being public or private, to serve the challenging and changing learning needs of farmers. The public sector still has a number of roles and responsibility related to advisory services. However, these roles have changed over time and the primary role is no longer the delivery of advisory services, but a policy, regulatory, financing and monitoring role ensuring that these services are of good quality, relevant and accessible for the small-scale farmers who constitute a majority and contribute substantially to agricultural production and commodity markets in most developing countries. A weak state will not provide the necessary base for effective reform. Strong, but lean central institutions taking care of core public functions are needed to create a robust framework, within which it is easier for local governments and other actors to operate. Similarly, responsiveness to farmer demands may not automatically result from decentralization, but require a systematic approach with POs to identify and summarize demand.

The identification of service gaps, particularly for small-scale producers, is important and needs to be addressed by the public sector. This does not mean that the public sector has to provide these services, but by contributing to the necessary funding, establishing public private partnerships or sub-contracting arrangements, etc., depending on the local circumstances and institutional options. Furthermore, the provision of certain information through mass media (e.g. consumer rights) and surveillance of public goods (e.g. environmental protection, eradication of hunger, and food security) are public roles, as well as the creation of an enabling environment for non-public service providers. However, programmes to provide public goods services can also be delegated, but require support for private or civil society organizations taking care of these public goods services.

The role of government remains central to the question of agriculture, rural transformation and extension reform. Fundamental questions are raised and need to be addressed by the very process of extension reform:

- What are the purposes and how best to address them?
- What needs to be done first (infrastructure, enabling environment, institutional reform, partnerships and networking, etc.)?
- What will be the government's goals and priorities:
  - sustainable agricultural productivity, rural transformation, market-orientation?
  - provision of knowledge and new technologies, sharing and learning, promotion of innovation, etc.?
  - promoting farmer organizations, linking farmers to markets, helping farmers to organize around marketable products?
- What will government do to improve coordination among stakeholders that provide advisory services?

- What will be the role of government and other stakeholders with regard to governance, service provision and monitoring and evaluation?

Certainly, increased public-private partnerships and multi-stakeholder processes are required to address the complex challenges of agricultural and rural development in the context of climate change, digitalisation, global trade, etc.. The roles of public and private stakeholders will largely depend on the institutional landscape in place and under development as well as on their capacities to respond to the challenges and opportunities and to jointly come up with new innovative approaches and solutions.

With decentralization and privatization combined with pluralistic service provision, most extension and advisory system have undergone substantial transformation. However, with digital services expanding rapidly, new service providers will come in and change the way advisory services are governed, provided and monitored. Hence, further changes are ahead affecting the roles of government, service providers and users. The role of government will go beyond the role it had and still has with respect to advisory services - it needs to take care of legal (e.g. protection of privacy), social (e.g. equal access) and other aspects linked to digital technologies which cannot just be solved at national level, but which also require international alliances.

Tools

TOOLS 6.1: EXAMPLES OF DECENTRALIZED RAS IN DIFFERENT COUNTRIES

China shifted the administrative responsibility (including personnel and financing) for extension from county agricultural bureaus to township governments towards the end of 1990s (Hu, Huang and Chen, 2012). Since 1999, Indonesia has decentralized almost all sectors, including agricultural sectors, to Province and District levels (Lubis, 2012). In South Korea, the status of extension officials changed from a central government position to local government positions after 1997 (Kim, Kong and Ju, 2009). The same is the case in Pakistan where, since 2001, the District is the focal point for planning and implementation of extension programmes.

In India, extension planning has been decentralized to the District and Block level through the formation of ATMA at the District level (Glendenning and Babu, 2011; Government of India, 2010). ATMA has the freedom to decide on the extension priorities it should address at the district level with the funds earmarked for ATMA. However, a large number of other programmes designed at the centre and state levels are also implemented at the district level by different line departments and this has diluted the spirit of decentralized planning for extension envisaged through ATMA.

In The Philippines, The Local Government Code that devolved extension service to the local government unit level, was enacted in 1991.

> *"The Philippine experience was that the experienced and knowledgeable extension advisors of the Department of Agriculture were eventually given non-agricultural assignments by the local governments. The Government is considering amending the law that devolved extension services to local government units, and return the mandate to the Department of Agriculture"* (Carating, Fernando and Tejada, 2010).

Most decentralization that has taken place in the Latin American and Caribbean region during the past 10 to 15 years is of the delegation type. Typical of this form of decentralization is that sub-national governments have some freedom on how to implement services, but financing depends mainly on the central government. Decentralisation of the central government's responsibility for agricultural extension and advisory services to lower tiers of government has been widely adopted in the Latin America and the Caribbean region. However, the level of decentralization varies widely from states (e.g. Brazil and Mexico) to regions (e.g. Bolivia and Nicaragua), to municipalities (e.g. Colombia and Venezuela).

In Tanzania, the entire field extension staff was transferred to local government authorities as part of the local government reform act, 1999 (Mvuna, 2010). The Ministry of Food and Agriculture (MOFA) in Ghana decentralized its extension services in 1997. With decentralization leading to a transfer of power to the district level offices, MOFA also transferred resources, including staff, to District offices. This transfer reduced the level of involvement of the ministries and the number of technical staff for coordination activities (Okorley *et al.*, 2010).

Kenya, decentralized its agricultural extension system as part of the 'District Focus Development' Policy during the 1980s and 1990s. Then, a system of bottom-up planning was set up, whereby staff in the divisions (the lowest administrative level) are requested to develop operational budgets that are then consolidated at the District and

provincial levels. At the moment of planning, the divisional as well as the district teams have a certain freedom to allocate resources across various activities (and budget lines) according to local priorities and as they deem fit (van't Lend, Steffensen and Naitore, 2008). Nambiro, Omiti and Mugunieri (2006) observed that there is improved access to RAS services with increasing levels of decentralization in Kenya. The National Agricultural Sector Extension Policy (June 2012) continues to support decentralized services, including the empowerment of POs in providing services and the facilitation of a favourable environment for private sector service provision.

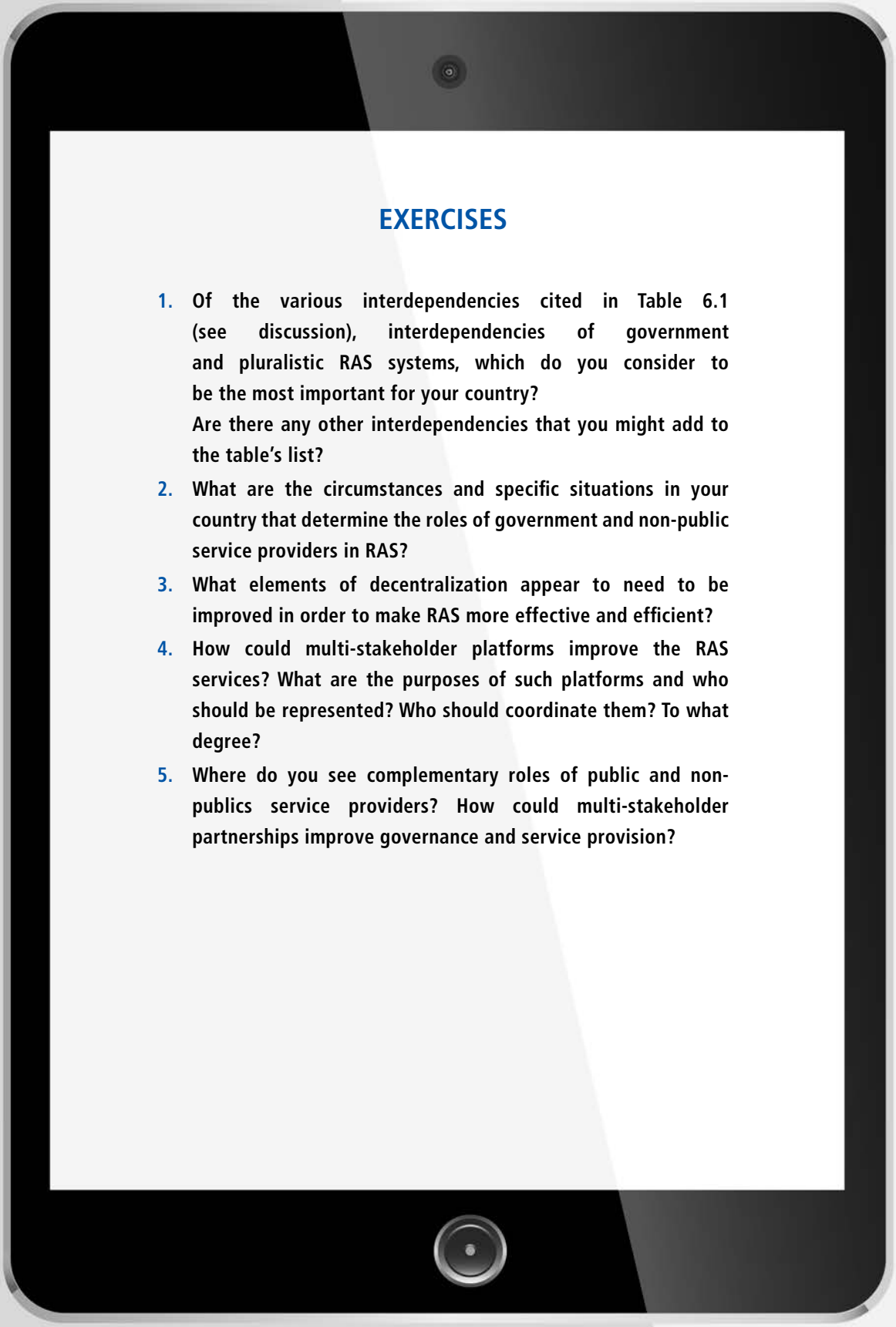
TOOL 6.2: EXAMPLES OF PRIVATIZED RAS

In Latin America, the national extension systems in most countries were dismantled by the mid 1980s (Roseboom, 2006). Mexico dismantled its national extension services (which once comprised approximately 25 000 employees) in 1994, and it implemented incentives for creation of a private extension market (McMahon and Valdes, 2011). In the early 1990s the Peruvian Government reduced its direct involvement in agricultural extension, and extension was left to the private sector and civil society. Public withdrawal from funding and delivery of extension resulted in a shift of authority towards NGOs and farmer organizations. Public extension became limited to specific areas and programmes. The gap left was partly filled by donor-funded NGOs. Integrated service packages around commodities or crops offered by agri-enterprises and sometime producer organizations became more widespread, as well as services linked to credit and input sales. Better-off producers found their service needs largely satisfied, whereas small- and medium-scale producers only sometimes obtain what they need (Heredia, 1999).

In Honduras, the public extension and the research system were dismantled in 1997. Many former government employees have been engaged by NGOs or have even founded their own NGOs, and are now implementing donor-financed research and extension activities. Chile adopted outsourcing (public funding and private delivery) of its extension services as early as 1978. In Guatemala, public extension was dismantled in the second half of the1990s. The dismissed local extension advisors continued to act as informal sources of information for their own community. In some places, NGOs, municipalities and local farmer organizations have taken up the extension role. But technical planning and orientation of their work was constrained due to less guidance by and contact with professionals and external sources of information. In 2010, the Government re-established a national agricultural extension service (Sistema Nacional de Extension Agricola – SNEA) as a component of the department of agriculture, MAGA (Ministerio de Agricultura, Ganaderia y Alimentacion) (Smith, 2011).

In New Zealand, in 1987, there was a complete sell off of the single government extension services which now operates under user-pay commercial criteria. This affected the effectiveness of the Research Development and Extension systems in New Zealand owing insufficient linkages between agricultural consultants and the research sector (Botha, Coutts and Roth, 2008). In Australia, the state public sector agencies are withdrawing completely from the provision of some services or charging for private good services in line with their moves towards encouraging the adoption of their user-pay philosophy (Marsh and Pannel, 2000). In Australia, in irrigated areas and in regions where farmer populations are greater, significant advisory service businesses have arisen (AHRSCAFF, 2006). Beginning in the early 1990s, in all EU countries, states disengaged from the funding, implementation and programming of agricultural extension services on a national scale (Labarthe and Laurant, 2013).

In Uganda, the NAADS provided funds to farmer groups to contract with private sector firms. In Latin America and Uganda, inadequate training resources to upgrade the skills and knowledge of advisory staff resulted in poor quality of advisory services (Roseboom, 2006, Swanson, 2008). Most private consulting services are too small and lack specialists. Moreover the poor and most vulnerable members of the society and those engaged in small-scale and family farming having limited or no resource to buy extension services were less serviced by the private-sector consultants unless special public funding was provided to support such groups.



EXERCISES

1. Of the various interdependencies cited in Table 6.1 (see discussion), interdependencies of government and pluralistic RAS systems, which do you consider to be the most important for your country?
   Are there any other interdependencies that you might add to the table's list?
2. What are the circumstances and specific situations in your country that determine the roles of government and non-public service providers in RAS?
3. What elements of decentralization appear to need to be improved in order to make RAS more effective and efficient?
4. How could multi-stakeholder platforms improve the RAS services? What are the purposes of such platforms and who should be represented? Who should coordinate them? To what degree?
5. Where do you see complementary roles of public and non-publics service providers? How could multi-stakeholder partnerships improve governance and service provision?

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MODULE 7: ICTs in Rural Advisory Systems and Services

By Blum, M.L., Cofini, F. and Sulaiman, V.R.

OBJECTIVES

1. to examine the role and potential of Information and Communication Technologies (ICTs) in Rural Advisory Systems and Services;
2. to review the experience of using ICTs in agriculture and rural development; and
3. to appraise the limitations of ICTs and the role of complementary support and service to utilize the full potential of ICTs.

INTRODUCTION

Many development initiatives have clearly revealed the huge potential and benefits of ICTs for improving efficiency, effectiveness and outreach in rural (as well as urban) service provision and shown how these technologies could ensure much-needed information flow, knowledge management, and transparency in public and civil society institutions, as well as for business.

The role of ICTs in the fight against poverty was already recognized in Millennium Development Goal No. 8 (MDG8), and, recently, ICTs have been distinguished as a key catalyst for achieving the Sustainable Development Goals (SDGs) (ITU, 2017; Ericsson *et al.*, 2017). "With a 10 percent increase in high-speed internet connections, economic growth increases by 1.3 percent," observed a recent World Bank report on Information and Communication for Development (World Bank, 2009). The same report also observed that

> *"Connectivity, whether the Internet or mobile phones, is increasingly bringing market information, financial services, health services to remote areas, and is helping to change people's lives in unprecedented ways."*

ICT projects show enough evidence to suggest that targeted applications could help to increase or protect livelihood assets of the poor by mitigating their vulnerabilities (de Silva, 2008). This module examines the role of ICTs and their functions in agriculture in general, and in advisory services in particular.

DEFINITION

Information and Communication Technologies (ICTs)

ICTs generally refer to an expanding assembly of technologies that are used to handle information and aid communication. These include hardware, software, media for collection, storage, processing, transmission and presentation of information in any format (i.e., voice, data, text and image) through computers, the Internet, CD-ROMs, email, telephone, radio, television, video, digital cameras, etc. Radio, television and the print media were the primary tools to support communication earlier, and are now being regarded as traditional ICTs. The new ICTs are commonly referred to as "evolving applications" or technologies that rely on the Internet, telecommunication networks, mobile phones, personal computers and databases.

DISCUSSION

Potential of ICTs

ICTs have a broad potential to enhance rural livelihoods through different forms, and this is confirmed by a growing body of literature. They can improve communication among people, access to and use of information for farmers and other actors of the Agriculture Innovation System (AIS). Managing, gathering and sharing information have been widely acknowledged as key areas for the use of ICTs, as well as creating linkages for partnerships in information sharing (mutual, two-way or participatory) (Chapman, 2002) but many other applications are found in relevant rural development literature. ICTs offer opportunities for youth involvement in rural development (Samsuddin *et al.*, 2016), inclusive value chain development (FAO, 2013), sustainable agribusiness models (GeSi, 2016) and they offer enormous support in combating hunger and malnutrition, building resilience and reducing food waste and losses (FAO, 2015b).

The main potential of ICT applications in rural advisory systems and services have been summarized by Saravanan *et al.* (2015) in relation to:

- offering localized and customized information, advisory and other services;
- helping to create, document, store, retrieve, share and manage information;
- enabling collaboration, sharing and partnership for innovation among extension actors and facilitating capacity development among farmers, extension professionals and other AIS actors; and
- enabling farmers and others to gain a voice.

Finally, Bell and Payne (Bell, 2015) also explored the potential of ICTs for behavioural change among resource-poor farmers that could lead to improved livelihoods.

The potential in terms of information outreach is tremendous. While RAS services can reach a limited number of people – in the range of hundreds or thousands – ICTs allow reaching millions across borders and almost instantaneously. They are hence more cost-effective in terms of providing information, exchange, etc. However, 'transfer' of knowledge is not an only a matter of receiving information, but needs an active role of the receiver in order to be put it into use. Providing knowledge is only one part, but when it comes to the exchange of experiences or the application of knowledge, skills, etc., the orientation and advice of RAS is still crucial in order to achieve impact.

A common criticism of ICT for development projects is that they fail to build on existing systems of work in a participatory manner and therefore do not achieve local participation and ownership. There is a broad range of ICTs available, each with its strengths and weaknesses with respect to the context in which it is used. It is the context that determines the range of tools that are relevant, and the context is dynamic – although opportunities for converging different tools exist. In other words, there is no ideal ICT application that fits all situations. Keniston and Kumar (2003) indicate that there has been a tendency for well-meaning government officials, international agencies and NGOs to think narrowly when it comes to ICT applications and their use – for example, in terms of "a computer in every village", a scattering of "information kiosks' throughout the country or for "universal computer-based education". If the true potential of ICTs is to be fully realized, this mindset has to be challenged.

ICTs in Rural Advisory Services

Extension reforms are underway and integration of new ICTs are rapidly transforming the way services are provided and how the overall system is working (Saravanan, 2010). The following paragraphs will address some of the different uses extension and advisory services can make of ICTs.

ICT tools and ICT-based approaches are often used to improve access by RAS advisors and farmers to information, knowledge and technologies. Communication is an important function of advisory services, one that seeks to provide knowledge and information for rural people to enhance development and modify behaviour in ways that provide sustainable benefits to them and to society in general. New technologies, such as PowerPoint™ for presentations; digital images; and low-cost audio-visual hardware have helped service providers to communicate information and knowledge. Disseminating information on agriculture through mass media (radio initially, television later, mobile application by now) has been considered as a means to reach the widely dispersed farm households in rural areas. Print media were also used, although the low rural literacy levels in many developing countries constrains its wider use. Media were largely used to promote knowledge about new technologies: better cultivars improved seed quality, importance of fertilizer application, use of pesticides, etc. ICTs such as telecentres, web-portals, call centres, mobile phones, community radio, video and digital photography are being increasingly used for access to information and knowledge, communication and exchange. These new ICTs have the potential of providing vast amounts of information to a huge number of rural people in a timely, comprehensive, cost-effective and interactive manner.

With this in mind, private enterprises, donors and national governments have started to invest in deployment of ICTs for rural development. The penetration of ICTs and the improvement of information content have progressed remarkably in recent years. The diversity of information sought by farmers has accelerated their use of the Internet and even more so of mobile 'phones. RAS services place more and more emphasis on information provision through the Internet and mobile 'phones. In Japan, for instance, many prefectures have started an e-Portal that provides cultivation management advice, research results, and weather information, and some prefectures offer technical support by e-mail (Saravanan, 2008). In most developing countries, where internet connection is still problematic and internet cafés are too expensive for small-scale producers, mobile 'phones are currently the easiest option for farmers to get access to information – such as market information services, weather reports and to contact farmers call centres (Vignare, 2013). Depending on ICT infrastructure, social structure and literacy, the frequency of use or the type of mobile 'phone may vary, but it has become a necessity and is no longer a luxury. It is now an integral part of everyday lives as shown by the number of subscriptions in 2013, near seven billion, corresponding almost to the world's population (Saravanan, 2014).

Table 7.1 shows (from Bell, 2015) the main applications of ICTs (radio, TV and videos; cell phones (text and voice) features; and smart devices, computers and the internet) in agricultural extension related to its functions of identifying farmers' problems and opportunities, promoting behaviour change, and collecting feedback.

Several authors and institutions have contributed to increase the body of knowledge on the use of ICTs in agriculture and beyond. In the past two decades, South Asia has been a major hub for rural ICT experiments. Sulaiman *et al.* (2011) provide an overview of various ICT applications employed in South Asian countries. The World Bank and the African Development Bank, with the support of the African Union, identified best practice in the use of ICTs in key sectors of the African economy, including agriculture, and climate change adaptation. (World Bank, 2012). Recently FAO (2015b) shared success stories in the Asia and Pacific on the use of ICTs for agriculture and rural development, mainly focused on ICT innovation for improving agricultural production and enhancing value chains.

There are numerous reports on how ICTs have been helping rural communities to access a wide range of information and knowledge. Nevertheless, there is now an increasing need to undertake research in order to fully understand the developmental and empowerment implications of ICTs. Three case studies on use of ICTs in Costa Rica, India and the Philippines are included at the end of this module.

ICTs can broadly support agriculture and RAS, farmers and other innovation stakeholders and fulfil the following main functions:

- sharing knowledge and experiences, and cross learning;
- improving access to information, knowledge and technologies and other innovations;
- providing timely and relevant information and advisory services;
- establishing links to markets;
- improving links and networking to enhance collaboration and partnerships;
- collecting data, Monitoring and Evaluation of RAS; and
- developing human resource capacities.

TABLE 7.1: Information communication technology and tools

EXTENSION FUNCTIONS	RADIO	TV AND VIDEOS	CELL PHONES	FEATURE AND SMART DEVICE	COMPUTER AND INTERNET
Identifying farmers' problems and opportunities					
Diagnose problems	Some potential if dealing with general problems, or if capacity for interaction and if expertise is available	Visuals are very helpful as "seeing is believing." Even better if combined with ways to receive feedback.	Some potential if farmers can call or text in and if sufficient expertise is available.	Additional potential to a simple cell phone as it enables web or App access to special diagnostic tools.	Good comprehensive diagnostic tools are available
Collect information	Some potential if capacity for interaction		Can be used for data collection.	Good for data collection with GPS	Some potential if internet available
Promoting behavioral change					
Raise aware of general opportunities or needs ; convince farmers to try something new	Very good especially with persuasive programming	Visuals are usually very helpful as "seeing is believing"	Is an option if users are registered to receive such messages (SMS)	Is an option if users are registered to receive such messages (SMS, email)	Is an option if users are registered to receive such messages (email)
Provide specific information needed for change. What is involved? What are the benefits/ Demonstrate or train?	Some potential – but limited information delivered. Can be enhanced with call in.	Good option as "seeing is believing"	Potential if farmers can call or text in and sufficient expertise is available	Additional potential to a simple cell phone as it enables web access and plays videos.	Good option for intermediaries to seek information and videos.
Facilitate access to credit and inputs	Can be used to inform of available services, but one-way communication	Can be used to inform of available services, but one-way communication	Mobile banking and negotiate directly with the suppliers	Mobile banking and negotiate directly with the suppliers	Online banking
Link farmers to markets	Good for providing general price reports		Access to price information (call in, subscription)	Can bring potential buyers and producers together; access price information	Can bring potential buyers and producers together; price info.
Collecting feedback					
Collect and respond to farmer feedback	Good if producers can call or text and sufficient expertise is available	Good if producers can call or text and sufficient expertise is available	Some potential if farmers can call or text in and sufficient expertise is available	Good option for intermediaries to seek information (if optimized for smart devices)	Good option for intermediaries to seek information

Source: Adapted by authors from Schmidt and Fischler, 2012.

Sharing knowledge and experiences, and cross-learning

ICTs can enhance the exchange of experiences and knowledge, and facilitate cross-learning between RAS providers, farmers and other AIS actors in the same and different locations.

Communities of practice (CoPs), such as the "Cooperative CoP" enabled by the e-network eExtension supported by the USDA National Institute of Food and Agriculture, New Technologies for Ag Extension project, are virtual environments that offer to professional peers a space for interaction, learning, collaboration and networking around a specific topic (Kelsey and Stafne, 2012). CoPs are often facilitated by Dgroups [3], which are online platforms targeted primarily at low-bandwidth users and that allow discussion through e-mail and offer automatic online archive of discussions.

Also, databases, website and discussion forums allow online consultation and sharing of knowledge and experiences. The interactive platform – Technologies And Practices For Small Agricultural Producers (TECA) [4]- launched in 2002 by

3 https://dgroups.org
4 http://teca.fao.org

FAO provides information on proven technologies and good agricultural practices, in simple and easy-to-understand language for small-scale producers. TECA is not only a database of applied and validated technologies and practices for various rural activities, but it also provides room for exchange and sharing among practitioners, farmer associations, advisory services, NGOs, universities and the private sector through its thematic exchange groups.

Another example of ICTs for cross-learning and sharing of information among different actors is offered by PLATICAR (see case study), a knowledge platform developed by producers, extension advisers and researchers from Costa Rica. It promotes the creation of CoPs where rural leaders train themselves as knowledge managers and then train others, in a self-managed dissemination process.

Improving access to information, knowledge and technologies and other innovations

ICTs have the potential to make information and knowledge directly available to users in a timely manner and from differ locations. However, factors, such as high cost of ICTs and limited knowledge on how to use certain ICT technologies, can hinder access to ICT-based information and knowledge. Mobile 'phones have revolutionized the communication process and have become all-in-one magical devices to create, gather, access and share information and knowledge anytime and anywhere. Extension is found to be good for working with low literacy populations, mainly in case of interactive voice response systems, but only moderate for working with women, as they generally have less access than men to mobile phones and have lower literacy rates (David and Cofini, 2017).

Farmers can call telecentres (see case study on telecentres in India) or e-kiosks (facilities equipped with computers, internet, telephone, fax and printers) to obtain technical, weather and market information by 'phone or text message (SMS). They can subscribe to SMS alerts, e.g. for pest outbreaks or other disaster warnings (sometimes for a fee) to get regular advice on topics of their choice. They can get information through Interactive Voice Response (IVR), a system that allows a computer to provide messages over the 'phone using voice and tone input. In the same way, RAS advisers can call farmers to provide information and advice. Mobile 'phones, both conventional and smart 'phones, can be used with other communication tools such as web portals, mobile apps, videos, radio, images and animated images. Some RAS organizations involve local farmers to provide information and advice through mobile 'phones and other e-tools. Farmer advisers are equipped with laptops connected to the internet, mobile 'phones preloaded with applications that they can be used to search for information on topics requested by their peer farmers. (David and Cofini, 2017).

PROVIDING TIMELY AND RELEVANT INFORMATION AND ADVISORY SERVICES

ICTs can help RAS providers to deliver relevant services to producers, corresponding to user needs and demands. This is possible only if a two-way communication flow is available and providers help farmers to identify problems and opportunities. Mobile 'phones and smart devices are quite promising in fulfilling this function (Bell, 2015). Indeed, farmers can call or text in to diagnose problems, or, if internet connection is available, use diagnostic tools in the form of APPs, such as Plantix[5], a plant damage diagnostic APP developed by Progressive Environmental and Agricultural technologies (PEAT), a startup using geodata and crowdsourcing to provide ecological information in order to recognize plant diseases and pests just by sending a picture.

The use of ICTs is particularly crucial for more timely, relevant and effective market-oriented advisory services:

- allowing easier and better marketing by producers;
- providing market information;
- communicating information on products available at decentralized places;
- on request from traders and other buyers, facilitating access to certification services; and
- providing linkages to agribusiness.

From 2007 to 2010, Farm Radio International conducted a project called the African Farm Radio Research Initiative (AFRRI). The project was strongly participatory, in part because it asked farmers to identify those issues which were most important to them. Many farming practices became the focus of a Participatory Radio Campaign (PRC). Farmers also indicated that they were very interested in Marketing Information Services (MIS). In response, AFRRI worked with five radio stations in four countries to broadcast enhanced MIS (Cuddeford, 2011). MIS programmes tell farmers the current prices in the markets, so that they can start the bargaining process equipped with up-to-date knowledge on prices and market conditions. Thus equipped, farmers may decide to take their produce to the local market, or they may buy in a nearby market that offers better prices (Cuddeford, 2011).

5 For more information, see the Plantix website: http://plantix.net

Another example in the South of India is the experience of Tamil Nadu Agricultural University, presented by Saravan, Kathiresan and Devi, 2011. Six market analysts were assigned different markets to collect the market prices, both wholesale and retail. All the market analysts were instructed to live locally in the assigned market town, making it easy for them to provide the service and to be around in order to collect exact prices as needed. The database is created in PHP (Personal Home Page) format. The on-line market information data base is linked with each farmers' association for easy reach. At the same time, mobile-based delivery of information was also explored.

ICT has a strong potential to facilitate access to certification services, as demonstrated by nearly 2 000 women who work with a shea butter association in Burkina Faso. They have become financially independent by learning to use ICTs, including GPS and the Internet, in order to reach a developed-country market for certified organic shea butter (World Bank, 2011).

Improving links between farmer organizations and their grassroots members, and providing voice to farmers

The challenge of improving links between farmer organizations and their grassroots members can be tackled using ICTs, but in the poorest areas of developing countries where infrastructure is lacking and many farmers are illiterate, the technology must be simple and cheap. Technologies that do not depend on literacy (digital photography and video clips) are extremely effective for sharing information within and between farmer organizations. Despite the digital poverty in rural areas, evidence suggests that farmers, both men and women, are well able to learn to use relevant technology if they are taught in the local language and can see clear benefits from new ways of doing things (Senyo and Addom, 2017).

ICT such as radio have been particularly effective in providing a voice to farmers. The FAO 'Dimitra listeners club' – single or mixed-sex groups that meet regularly to bring about changes in their communities – uses club-owned solar-powered radios to discuss the challenges they face in their daily lives, make decisions and take action to resolve their problems. The project contributed to improving the visibility of rural populations, women in particular, by making their voices heard. Listeners are often invited to call or text the programme with specific questions; thus real issues raised by the farmers themselves are discussed (FAO, 2015c). As with the Dimitra listeners club, other community radios can play a very important role in articulating the demands of farmers and addressing community-specific needs for information and knowledge.

Furthermore, farmer organizations may use ICTs to create a database on crops and productivity, and establish projections of possible future yields for better planning of investments and accessing credit for its members (Senyo and Addom, 2017).

Collecting data, Monitoring and Evaluation of RAS

Extension and advisory systems can use ICTs for a wide array of monitoring and evaluation (M&E) purposes at different levels (Saravanan *et al.*, 2015; Vignare, 2013). These functions are paramount for improving extension and advisory services, given the current limited evidence on RAS providers, their programmes, outcomes and impact. ICTs have a huge potential in facilitating data collection for increased evidence, in monitoring progress of result-based planning and in evaluating in a participatory manner the services provided. ICTs are tools that allow capture of the pluralistic nature of current RAS systems and their complexity. However, it takes also considerable effort to establish and to maintain these monitoring systems.

At service level, ICTs can serve to create more evidence on farm-level outcomes through RAS. At farmer level, ICTs allow farmers to not only request services, but also to send their feedback on the degree of satisfaction with services, and suggestions for improvements. The involvement of farmers in monitoring of RAS is hence also enhancing accountability of RAS towards farmers. In the Republic of South Africa for example, multifunctional ICTs using smart pen, GPS functions of smartphones and information systems, have been implemented by management to monitor the quantity and the quality of advisory services to farmers, and to receive feedback from farmers (Swanepoel, Blum and van Niekerk, 2016).

At system level, ICTs could facilitate the identification of the current supply of and gaps in service provision (mapping of providers, types of services provided, human resources and their specializations, fees for services), the recording of investments, identifying good practices for up-scaling, etc. ICT monitoring at system level also allows aggregating data on RAS outcomes and impact at regional and national level, based on data provided by the main service providers; these data and information can then be compared with other national macro-indicators such as production growth or economic development. RAS country forums or platforms have a major role to play in setting up and continuously adapting such monitoring systems for pluralistic RAS.

Developing human resource capacities

Agricultural RAS systems would benefit greatly from having adequate ICT capacity, if their field staff were are able to access information electronically. This includes online modules or open access courses for education and training of RAS advisors, potentially of easy access even in decentralized or remote areas (Swanson and Rajalahti, 2010).

The case of e-learning in the Philippines (see case study) clearly shows this potential. The e-Learning for Agriculture and Fisheries is a major component of the Philippines Department of Agriculture's e-Extension Programme, provided by the Agricultural Training Institute as the lead implementing agency, in collaboration with other government agencies, state universities, colleges and NGOs. It provides e-learning courses on crops, livestock, fisheries and sustainable agriculture but also on agriculture marketing extension, training management, effective human communication and grant proposal writing. Similarly, GFRAS developed a learning kit with modules for individual field staff, managers, lecturers, NGOs, and training institutions. The modules include topics such as Approaches and methods, Extension in the value chain, Farmer organization development, and Agricultural entrepreneurship, among others[6]. Finally, several websites, such as eXtension[7], E-agriculture[8] and study.com[9] offer, alongside knowledge exchange, a selection of e-learning courses, some of them open access, related to agriculture, rural development and related issues. Other interesting e-learning opportunities, also beyond the mere agricultural domain, are offered by FAO[10], The World Bank (Open Learning Campus)[11], Coursera[12] that provide universal access to online courses by the world's best universities and education institutes. However, websites also target male and female farmers, youth, etc. by offering videos (Agtube, www.accessagriculture.org, etc.) with visual demonstrations of good practices.

CURRENT LIMITATIONS IN USING ICTS

Limited locally relevant content

The value of information provided by ICT applications greatly depends on its local relevance, whether it can be customized to a farmer's resource situation, as well astheir capacity to use that information. Initiatives that use ICTs have also tended to focus on the issue of connectivity, with not enough attention paid to the generation of relevant content corresponding to farmers' needs and demands, or to efforts to build capacity. ICTs are currently used mostly for disseminating information, and much of this information is generic. Repackaging and adding value to information (downloading, simplifying, translating and adapting information into local languages and environments) as well as documenting and uploading local information are all critical steps toward enhancing relevance (Gurumurthy, 2006; FAO, 2014).

Based on a review of ICT projects in South Asia, de Silva (2008) reported that:

> *"ICT projects that successfully facilitate the information needs of the rural poor generally use participatory approaches with target communities, not just to articulate their information needs but often to generate and disseminate the content locally."*

> *"Quite often, public sector research and extension organizations simply have not documented locally relevant or location-specific knowledge. How can they then support initiatives that are trying to generate locally relevant content? All these are issues that are yet to be resolved. To generate locally relevant information, knowledge and technologies, takes time, has cost implications and requires often the contributions of various actors. It is not a one-time event, but entails continuous efforts in generating, adapting and exchanging knowledge."*

Does the information disseminated through ICTs reflect the information needs and the demands of the diverse categories of family farms, or more specifically of women and youth? This is not always the case. Studies have shown that a

> *"majority of women in rural areas are engaged in agricultural labour and livestock rearing and there is a need for information for small-holding livestock, small business ventures, value addition, marketing products, and ways of improving remuneration and conditions of unskilled and migrant labourers"* (CRISP, GCU and CMS, 2009).

6 http://www.g-fras.org/en/knowledge/new-extensionist-learning-kit-nelk.html
7 https://extension.org
8 http://www.fao.org/e-agriculture/e-agriculture
9 http://study.com/articles/List_of_Free_Online_Agriculture_Courses.html
10 http://www.fao.org/elearning/#/elc/en/home
11 https://olc.worldbank.org
12 https://www.coursera.org

However, this kind of information is often scarce and women are often not able to make use of it, due to lack of access to technology or complementary sources of support and services (Sulaiman *et al.*, 2011). Relevant content for women goes along with a process where women and men farmers and their organizations identify their needs, set priorities and negotiate effectively the services they want with the provider (Petrics *et al.,* 2015).

The same is the case with youth. Young farmers have often more innovation and creativity than their older peers and can benefit more by the use of ICTs. Youth are interested in farm management, agribusiness and agri-entrepreneurship. Furthermore, they need orientation on where get advice on access to land and credit, among others Also it has to be noted that more young people in developing countries are designing innovative solutions to agricultural challenges through Apps. However, this is constrained by insufficient capacity in e-agriculture entrepreneurship, non-existent or weak linkages with investors and weak support from the national public and private sectors (ARDYIS, 2017).

Sustainability of ICT initiatives

Beardon (2005) argues that the impact of ICT-based projects has generally fallen well below the optimistic expectations generated by their protagonists. More people have now started to question the sustainability, scalability and impact of such ICT pilots and experiments (Jhunjunwala and Aiyar, 2006; Prasad, 2008). Reluctance to commercialize and scale these projects has led to their collapse as soon as the intervening agencies move out.

An e-forum on how to use ICT to improve agricultural productivity and raise smallholder incomes was held by World Bank in collaboration with the e-Agriculture community and FAO in 2012. It grouped the discussion around sustainable models for establishing ICT-based advisory services into three cases:

- a successful business model, where the service costs are covered by revenue (user payment, third-party fees for advertisements, data, etc. (private sector);
- successful service model, where the service is taken on as part of the mandate of a government office (public sector); or
- an innovation/technology model being taken on by the target and continuing after the project (World Bank, 2012).

An example of a sustainable business model for ICT applications is found in the e-Krishock experience, a service brand launched in 2009 by the Bangladesh Institute of ICT in Development (BIID). This includes: partnerships with multi-stakeholders, a private-sector driven approach, and a bundling of services (extension to market linkages). (BIID, n.d.).

Investments related to ICT applications, especially Internet-enabled computers, have been a matter of great concern because of the high costs associated, which limits its up-take and use. However, the wider availability of cheaper mobile 'phones, newer applications associated with them (Mobile 2.0) and cheaper network charges, have offset this concern to some extent. Many trends show that the future of ICTs lies in mobile phones and small devices in general. There is a lot of hyperbole around the provision of a range of information, especially market information, through mobile 'phones these days. However, the link between availability of market price information and better price realization by farmers is not that direct (Lehr, 2007; Mittal, Gandhi and Tripathi, 2010). If farmers have to really benefit from market information communicated through ICTs, other constraints such as access to credit and relevant infrastructure (from transport to storage) need also to be met (Lokanathan and de Silva, 2010).

Under-utilization of the potential

Sulaiman *et al.* (2011) noted that ICTs are mostly used to support traditional communication tasks such as information dissemination and training at the cost of a wide range of other communication-intermediation tasks. Even in the few instances where they do support new communication-intermediation tasks, this is mainly because of the vision of the entities deploying these ICTs and the working relationships they have with communities and other actors in the agricultural innovation system. The authors argue that this under-utilization of the potential of ICTs could have three causes:

- limited appreciation of the real nature of the communication-intermediation tasks required for innovation;
- underestimation of the roles of intermediaries and their capacities for innovation; or
- limited availability of networks and complementary services needed by communities to make use of the information provided through ICTs.

Digital divide

The concept of digital divide has changed over time. There is increasing realization that the digital divide is not merely technological. There is a social divide between the information-rich and -poor in societies, and there is also a digital gender gap between women and men in society (Huyer and Mitter, 2003). Initially it was considered as an access or

connectivity problem, but during the last few years, understanding of the concept has broadened to include capacities and skills required to use ICTs (Singh, 2010). The digital divide currently is seen as having four gaps:

- access to use ICTs;
- ability to use ICTs;
- actual use; and
- impact of use.

Box 7.1 has more details.

BOX 7.1: Digital Divide

ICT statistics from the International Telecommunication Union (ITU, 2017) provides an interesting comparison of ICT access among regions of the worlds (i.e. developed, developing, least developed countries (LDCs) and globally), namely:

> *"Close to one out of two people (47 percent) in the world are using the Internet but only one out of seven people in the LDCs. Developed regions are home to one billion Internet users, compared to 2.5 billion users in the developing world... Almost two-thirds of households in the Americas are connected, compared with half of all households globally."*

Almost 1 billion households in the world have Internet access, of which 230 million are in China, 60 million in India and 20 million in the world's 48 LDCs…"; and finally, on fixed and mobile-broadband subscriptions:

> *"In developing countries, the number of mobile-broadband subscriptions continues to grow at double digit rates, reaching a penetration rate of close to 41 percent. The total number of mobile- broadband subscriptions is expected to reach 3.6 billion by end 2016. Fixed-broadband penetration remains at below 1 percent in Africa and the LDCs. Strong growth in China is driving fixed broadband in Asia and the Pacific, where fixed-broadband penetration is expected to surpass 10 percent by end 2016."*

These data confirm the strong correlation between per capita income and internet access (Poushter, 2016).

Though ICTs offer considerable potential for reaching women with relevant information and services, women's ownership and access to ICTs is low, as in most other sectors. Internet penetration rates are higher for men than for women in all regions of the world (ITU, 2017). ICT use by women continues to be governed by existing power relations whereby women frequently experience relative disadvantage (Gurumurthy, 2006). Rural women face significant disadvantages in information, communication, transactions, access to services, access to skills and education, access to earning and employment opportunities and "voice". Despite much support for the diffusion of ICTs in rural areas, gender disparity in access to ICT services continues (World Bank, FAO and IFAD, 2009). There is a growing agreement that the impact of ICTs in developing countries is not gender neutral, necessitating an engendered approach (affirmative direction to include gender concerns and realities) to ICT-based projects (Arun, Heeks and Morgan, 2004).

Case studies

CASE 7.1: PLATICAR - THE RURAL AND AGRICULTURAL PLATFORM FOR TECHNOLOGY, INFORMATION AND COMMUNICATION

Plataforma de Tecnología, Información y Comunicación Agropecuaria y Rural (PLATICAR) in Costa Rica was built on the experience of the Virtual Extension and Research Communication Network (VERCON). VERCON is a conceptual model developed by FAO to strengthen linkages among extension, research, farmers and other stakeholders of agricultural and rural development systems. It aims at improving access to agricultural information, with knowledge sharing and supporting linkages among all the stakeholders, using new Information and Communication Technologies (ICTs) and creating opportunities for collaborative work. The VERCON model was first implemented as pilot project Egypt and then in Bhutan, Costa Rica, Uganda and elsewhere.

PLATICAR was implemented over a period of 4 years from 2004 to 2007, and is one of few pilot projects that after the end of the external support still performs its functions and is regularly maintained and updated. It is a platform specialized in providing information services and communication on farming technology through interaction, exchange, and capacity development programmes, including trainings, thereby assisting in the supply and demand of information at national and local levels.

The strategy of the platform is to encourage interaction among producers, researchers and outreach specialists in order to identify technology needs in information and communication and to develop collaborative efforts to exchange knowledge. Partnerships are fundamental for the functioning of the platform: Alliances between national

and international strategic partners such as producer organizations (POs), research institutes, academic centres, outreach services, NGOs and others are encouraged. The main stakeholders involved are the National Institute for Agriculture Innovation and Technology Transfer (INTA), farmers and farmers' organizations (FOs), as well as other agencies of the National Extension Service of the Ministry of Agriculture and Livestock (MAG). At local level, INTA's Experimental Station "Los diamantes" in Guápiles and the Brunca Regional Bureau of the Ministry of Agriculture and Livestock are involved. There are three main types of users: small-scale farmers, especially those grouped in associations; extension agents; and researchers. All of them benefit from the system's facilities even when farmers are the primary beneficiaries; they all act indirectly as generators and users of information.

PLATICAR has four main components, which are closely interlinked:

1. *Centres for knowledge management*: these centres are located in 4 pilot regions of the country; Central, South Central, Brunca and Huetar Atlantic. The knowledge facilitator encourages the diagnosis of information and communication needs of producers and technicians, measures the applicability of content, retrieves local intelligence and facilitates processes for exchanging information.
2. *Local Plans for Information and Communication*: these are done by local agricultural organizations and PLATICAR strategic partners. This includes processes like the identification of information and communication needs in forestry and agriculture, as well as the measures required to respond and resolve those needs.
3. *Software Development Platform PLATICAR* (www.platicar.go.cr): to assure its sustainable and future growth, the platform was developed with the use of freeware and operates under LINUX. Its primary role is one of supporting consolidation of information and communication processes.
4. *Exchange Sessions*: these sessions encourage dialogue and debate of experiences online, with the exchange of information, knowledge and technologies as a collaborative effort through which all participants may enhance their own skills.

The PLATICAR pilot project was widely viewed as successful by its stakeholders and outside organizations. In October 2013, PLATICAR won the 2013 prize by the Chamber of Information and Communication Technologies (CAMTIC) in the category called "Green and Smart". This success may be the result of several factors. The country had favourable conditions for the development of online systems such as rural connectivity and qualified human resources. However, an IT system allowing producers, researchers and extension agents to access easily and timely available agricultural and livestock technological and other information, officially certified, did not exist. The most important investments were made in capacity development: training of local personnel, national and international technical assistance, equipment and supplies and local contracts for the development of the software (applications and components). Capacities were also developed for organizing and systematizing experiences and information; adapting for easy access and disseminating.

Sources

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CASE 7.2: DIFFERENT CONCEPTS OF TELECENTRES IN INDIA

Village knowledge centres and e-choupal

Village Knowledge Centres of MSSRF

Village Knowledge Centres (VKC) are an initiative of the M.S. Swaminathan Research Foundation (MSSRF), who developed the concept of a Community Managed Knowledge System for Sustainable Food Security. The main aim of the ICT programme of MSSRF is to empower largely unskilled, resource-poor rural farming and fishing communities towards making better choices and achieving greater control of their own development through skills and capacity development for improved livelihoods. VKCs have a few computers, printers and connectivity is provided through the integrated application of the Internet and cell 'phones or community radio. Knowledge workers (KWs) are selected from the village residents to run the VKCs, and are usually young people, often women, educated to secondary level. KWs are provided with initial training in operating a computer and managing a centre, and also receive a monthly honorarium from MSSRF.

The VKCs are networked to a hub centre (Village Resource Centre). The hub provides links to external information sources and they manage the database of the local intranet. In response to villager's specific requests for information,

the hub staff will find the appropriate information and if needed, translate it and reformat it to make it accessible to the villagers. Where connectivity is suitable, video-conferencing links have been set up so that villagers can ask questions direct and verbally to the experts in MSSRF. Each VKC is managed by one or two knowledge agents, who are village volunteers, mostly women, trained by MSSRF in operating the computer and the Internet. The VKCs also use other media, notice boards, public address systems, community newspapers, cable TV, telephone meetings, mobile 'phones and the Internet website for dissemination of locally relevant information in local languages.

The two core components of the VKC model are locally-relevant content and appropriate network connectivity (Swindell, 2006). Information provided in the VKCs is local-specific. For instance at Pondicherry, information provided include prices of agricultural inputs (such as seed, fertilizers, pesticides), outputs (rice, vegetables, sugarcane), market entitlement (the multitude of schemes of the government), health care (availability of doctors and paramedics in nearby hospitals, women's diseases), cattle diseases, transport (road conditions, cancellation of bus trips) and weather-related agricultural information (appropriate time for sowing, areas of abundant fish catch, wave heights in the sea). Most of the information is collected and fed into the system by volunteers from the local community itself. As of September 2009, 18 VRCs and 101 VKCs had been set up by MSSRF in India. The MSSRF has brought out a toolkit for setting up Rural Knowledge Centres based on its learning from setting up such initiatives in India (MSSRF, 2004).

E-Choupal of ITC

Another major internet-enabled computer initiative is the "e-Choupal" of ITC Limited (a large multi-business conglomerate in India), which was initiated in June 2000. A personal computer (PC) and Internet access was provided by ITC at the sanchalak's (a trained farmer working for ITC and facilitating procurement for ITC) location, enabling farmers to obtain information on market (mandi) prices and information on good agricultural practices. The farmers do pay nothing for the services and there is also no government investment in e- Choupal. For ITC, its investment in e-Choupal is part of its business investment, where it benefits from the lower net cost of procurement (despite offering better prices to the farmer) having eliminated costs in the supply chain that do not add value.

Salient features

E-Choupal of ITC is perhaps the single project that has proved to be financially sustainable. However, the e-Choupals are distinct from other telecentre projects in that the value added is not in providing ICT infrastructure alone, but rather, in enabling efficiencies in the agricultural sector through greater information exchange and creation of an alternative market structure (Kumar, 2004). The VKCs of MSSRF have been successful in localizing content and involving the poorest of the poor, women and members of backward groups. But as the project neither aspired to nor attained financial sustainability, it would be listed as a failure, were financial sustainability considered a criterion for success (IITB, 2005). Gender concerns and social inclusion are core principles underlying the MSSRF project. Financial sustainability is neither the underlying nor over-riding principle of the knowledge centre initiatives. MSSRF clearly believes that the knowledge centre exists to serve poor citizens for whom a price cannot be put on accessing knowledge (Vaidyanathan, 2008).

Sources

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CASE 7.3: E-LEARNING IN THE PHILIPPINES

e-Learning for Agriculture and Fisheries is a major component of the Philippines Department of Agriculture's e-Extension Programme, with the Agricultural Training Institute (ATI) as the lead implementing agency, in collaboration with other government agencies, state universities and colleges and NGOs. The ATI, the extension and training arm of the Department of Agriculture, has been recognized by the Government Quality Management Committee for successfully establishing its Quality Management System to ISO 9001:2008 standards. Moreover, the first set of ATI Training Centres have been certified with ISO 9001:2008 as well after passing the recent surveillance audit covering development and provision of trainings, knowledge products and services, accreditation of extension service providers, scholarships, alliance building, national extension system planning, and monitoring and evaluation.

The e-learning component offers to its users, courses, forums, technokits (printable production guides in the form of leaflets and brochures) and agricultural videos accessible to everyone though a YouTube channel. Registering in the e-learning site (only registered users can access resources) gives you the privilege to post in the forums and participate in online discussions, as well as to download digital resources that are reserved for registered users and that can be used for farmer training and other local extension activities.

At the time of writing, it contained more than 152 courses plus learning resources not only on crops, livestock, marine fisheries and sustainable agriculture, but also on agriculture marketing extension, training management, effective human communication and grant proposal writing. Each course consists of two to seven modules, containing lessons of about 20 minutes each. The positive completion of all modules provides users with certification recognized officially by the Ministry of Agriculture. Courses are designed for extension advisors, agricultural students and farmers. Each course has an on-call expert available for real-time expert consultation or interaction via a message board or e-mail. Users can contact the expert directly though their published contact details, or can ask the nearest ATI Regional Centre to facilitate and arrange for a meeting depending on the expert's availability.

As of 2017, over 44 000 registered users had made use the e-learning platform, and this has grown constantly over time. In addition, the Youtube channel had over 2 000 subscriptions along with an unknown number of unregistered participants who only watch the videos. Videos are divided into thematic playlists and are also included in e-learning modules. At the time of writing a total of 860 000 visualization had been logged.

Sources

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SUMMARY

There are no blueprint approaches for ICTs or magic bullet ICTs that will automatically improve rural livelihoods. Countries have their own specific agricultural and rural development constraints and opportunities, as well as those related to ICT. Regardless of country specificities, the skills and resources of stakeholders need to be harnessed to determine, plan, implement and sustain appropriate ICT interventions to improve rural livelihoods.

The main functions of ICTs related to RAS and agriculture are:

- sharing knowledge and experiences, and cross-learning among RAS providers, farmers and AIS actors, whether in the same or different location;
- improving access to information, knowledge, technologies and other innovations for RAS advisors (e.g. online access to statistics, research, information and up-to-date knowledge, mobile 'phones, monitoring and reporting systems) and for producers (e.g. call centres, access to information systems, applications and mobile 'phones, videos on agricultural practices, and exchange groups among farmers);
- providing timely and relevant information and advisory services; for market-oriented advisory services: easier and better marketing by producers, market information (prices, trader demand, etc.),
- facilitating access to certification services;
- providing linkages to agribusiness, for information services: weather forecasts, pest outbreak news, and other disaster warnings, etc.;
- improving linkages and networking to enhance collaboration and partnerships:
  - between farmer organizations and their grassroots members;
  - providing a voice to farmers;
  - between RAS providers at local, national and international levels; and
  - between actors of the agricultural innovation system.
- collecting data, Monitoring and Evaluation of RAS:
  - at service level for increased evidence on farm level outcomes and monitoring of progress towards results planned;

  - at farmer level to receive feedback on their satisfaction with services and suggestions for improvements, as well as to record impact of RAS, investments, etc.;
  - at farm level to observe the overall evolution of farms; and
  - at RAS system level for identifying the portfolio and gaps in service provision; recording investments, identifying good practices for up-scaling, etc., as well as aggregating RAS results at national level and relating them to other national indicators such as agricultural growth or economic development; and
- developing human resource capacities:
  - online training and distant learning of RAS providers, men and women farmers and youth, from which remote areas can also benefit.

However, if ICTs are to contribute meaningfully to innovation, there has to be a fundamental re-thinking of the approach to agricultural and rural development. There is a need to shift the discussion around ICTs from a technological focus, with one-way information delivery and extended coverage, towards that of better and more meaningful use of ICTs for innovation by providing more information-sharing opportunities, improving ease of access, transparency and accountability, as well as control over information and knowledge, all in support of empowering the rural poor.

Lack of empirical evidence on the contribution of ICTs – and a reluctance to report and learn from failures in ICT experiments – has led to disillusionment about the role of ICTs among the development community. ICTs are clearly not a substitute for human intermediation and the limits of stand-alone ICT initiative should be clearly understood in order to match ICTs with appropriate complementary services to enhance their full potential.

ICTs cannot solve the underlying institutional bottlenecks that constrain organizations from interacting with each other. Addressing these issues is important, if the full potential of ICTs is to be realized. The use of ICTs by itself require organizations to adjust the way they are set up, managed and organized. Institutionalizing the use of ICTs in RAS or producer organizations needs therefore investment, training and behavioral change. It will take time as it also affects habits and the culture of the organizations. However, information and knowledge alone are not enough to ensure behavioral change or to develop knowledge, skills and competencies. There is always a need for complementary services, face-to-face orientation, dialogue and exchange, particularly for complex issues like decision-making, networking and partnering, or taking advantage of market opportunities, be it at farmer, RAS service or system level.

Although recognizing that communication, knowledge management and innovation in advisory services have changed substantially in the past two decades, there is still a big gap between theory and practice. Furthermore, regional, gender and wealth gaps exist regarding access and use of ICTs. The gaps need to be bridged, if ICTs are to effectively contribute to putting new knowledge into use. ICTs have a unique role to play in this and it should be fully exploited. Partnerships are needed in order to create and accelerate innovative ICT solutions. Governments needs to put the necessary ICT infrastructure in place, support the up-take by addressing affordability, availability and ease of use (including free access to public information), and enhance ICT applications, as well as ICT literacy. Such an enabling environment for ICTs for agriculture and rural development will speed up also the use of these technologies by RAS and producers.

The technological revolution of ICTs is still continuing with the enhancement of drones, satellite systems for information and farm management, as well as artificial intelligence. With technology constantly and rapidly advancing, the implications of these technologies are not yet fully predictable. These technologies have huge potential in surveying soil, irrigation, crop and animal production, providing real-time data, and in improving farm management, leading to reduced costs of labour, pesticides and other inputs. At the same time, specific measures are needed to ensure access and benefits for smallholder producers. For advisory services, it means that new players will come into the advisory business, and existing RAS would need to link up and participate in shaping new information systems.

Tools

TOOL 7.1: STEPS FOR PRODUCING A VIDEO FOR ADVISING FARMERS

Who plays the lead role in each step will depend on what type of video you want to develop, but all videos for agricultural extension and learning will involve scientific organizations, partner organizations (e.g. non-governmental organizations (NGOs), extension services, farmer organizations), farmers, and other rural stakeholders.

Step 1. Conceive a topic

Step 2. Plan for the video

Before you produce a video, think about how you plan to disseminate and use it.

Step 3. Produce the video.

Videos can be produced by film professionals or by farmers themselves. Scientists, extension staff and film professionals should always listen carefully to farmers so that the finished video reflects their perspectives and conveys a message that is technically accurate. Focus each video on a single topic. Prepare for filming by writing a story board or a draft script based on what you know and what you learn in the field. Videos can be just a few minutes long, and shouldn't be longer than 20 minutes. Ensure that a diversity of farmers (women, men, the poor, youth, etc.) and related rural people (landless, market sellers, etc.) appear in the video. After filming, edit the clips and arrange them according to your story board or script. Then you can add narration, music, titles, and end credits. Keep text to a minimum.

Step 4. Validate the video

Once you have a first draft of the video, show it to farmers, extension advisors, scientists, etc. to ensure that farmers can understand the message, that it includes logical and scientific explanations, and that the visuals help explain the content. If required, make corrections based on the feedback received.

Step 5. Distribute the video

Once a video is finalized, it can be translated into local and international languages and printed onto a DVD. Videos may also be distributed on USB sticks, tablets, mobile 'phones (not just smart 'phones), pico-projectors (pocket-sized projectors that can be run from smart 'phones or tablets), and smart projectors. Videos can be distributed in many ways: directly to farmers, or through extension services, value chain actors (e.g. buyers or processors), as well as POs and rural communities (through group meetings, village shows, video shacks, etc.). Video viewing clubs, which bring together a group of farmers led by a facilitator, are a structured approach for video-based training. When screening videos for the public, you will need to identify a suitable venue and have the necessary equipment such as a power source, video playing equipment, and some sort of screen.

Step 6. Monitor and Evaluate

Continuous monitoring and impact assessment of videos are important functions that can be carried out in many ways (field studies, surveys, or by software that monitors viewing).

Source

Bentley, J., Chowdhury, A. & David, S. 2015. Videos for Agricultural Extension. GFRAS Good Practice Notes for Extension and Advisory Services. Global Good Pratice Note 6. Lindau, Switzerland, GFRAS. (also available at: http://www.fao.org/uploads/media/GlobalGoodPracticeNote_FAO-Gfras.pdf).

TOOL 7.2: SEVEN CS OF EFFECTIVE COMMUNICATION

This tool is used by radio broadcasters and other communications professionals to create more effective communications. Below is an adaptation of the Seven Cs as used by Farm Radio International:

- **Command attention**: Your programme should command the attention of your listeners by using formats, topics, and information that will appeal to them. It should also be fresh and relevant to your audience so that it piques their interest. It should also enable listeners to imagine the scenes, so that they feel as if they have been transported into the programme.
- **Cater to the heart and head**: Connect to your audience on both intellectual and emotional levels. Your listeners should understand why the content you are presenting is important, but also feel something after they listen. By emotionally connecting with your listeners, you will be likely to increase their ability to remember the intellectual pitch you are making.
- **Clarify your message**: Unlike written content, which can be read and re-read to understand, your audience will probably not have a chance to immediately replay your programme. For this reason it is very important that your message is clear enough to be understood from just one encounter. There are a few different ways that you can do this:
  - **Be natural:** Write in the same way that you would speak. Avoid being overly formal.
  - **Repeat key messages:** You should repeat your key messages at least twice, if not three times, during your radio programme to ensure they are noted by your audience.
  - **Be direct and concise:** Prefer the active voice and clearly link your subject to your verb.
- **Help the listener visualize:** Your audience cannot see what is happening, so make sure to help them visualize each scene. You can do this by adding sound effects (such as birds chirping to represent being outdoors) or mentioning actions in your dialogue (such as having one character say "Emanuel, why did you run here?" to let us know he ran).

BAD	BAD
Broad beans and maize are the main crops grown by farmers in this village.	Maria Lon, who is the leader of the Chimoio farmers association, says the harvest was good this year.

GOOD	GOOD
Farmers in this village mainly grow broad beans and maize.	Chimoio farmers' association leader Maria Lon says the harvest was good this year.

- **Communicate a benefit**: Given the small margins they work with, many small-scale producers are risk averse unless they see clear benefit in change. Make sure that your script demonstrates tangible benefit from whatever you are trying to promote, either through real-life testimonials or realistic dramatizations.
- **Create trust**: Try to use individuals who are already known and trusted — or hold known and trusted positions — by your target audience. Communicating an accurate message that leads to concrete benefits is another way to build audience trust over time. Conversely, it is very easy to lose the trust of your audience by providing them with inaccurate information. Make sure that you always fact check your script for accuracy before finalizing it.
- **Call to action**: Your programme should not only make people want to listen, but it should also encourage them to take some action consistent with your learning objective. By the end of the programme they should know where to go for additional information or how to try something on their own.
- **Convey a consistent message**: This refers to your messaging over time. Make sure that you are not presenting confusing or contradictory messages in your different scripts. In other words, do not promote the use of chemical pesticides in one script and then praise the benefits of organic farming in other. Also make sure that your messaging is consistent with the mandate of your local radio station partners.

Source

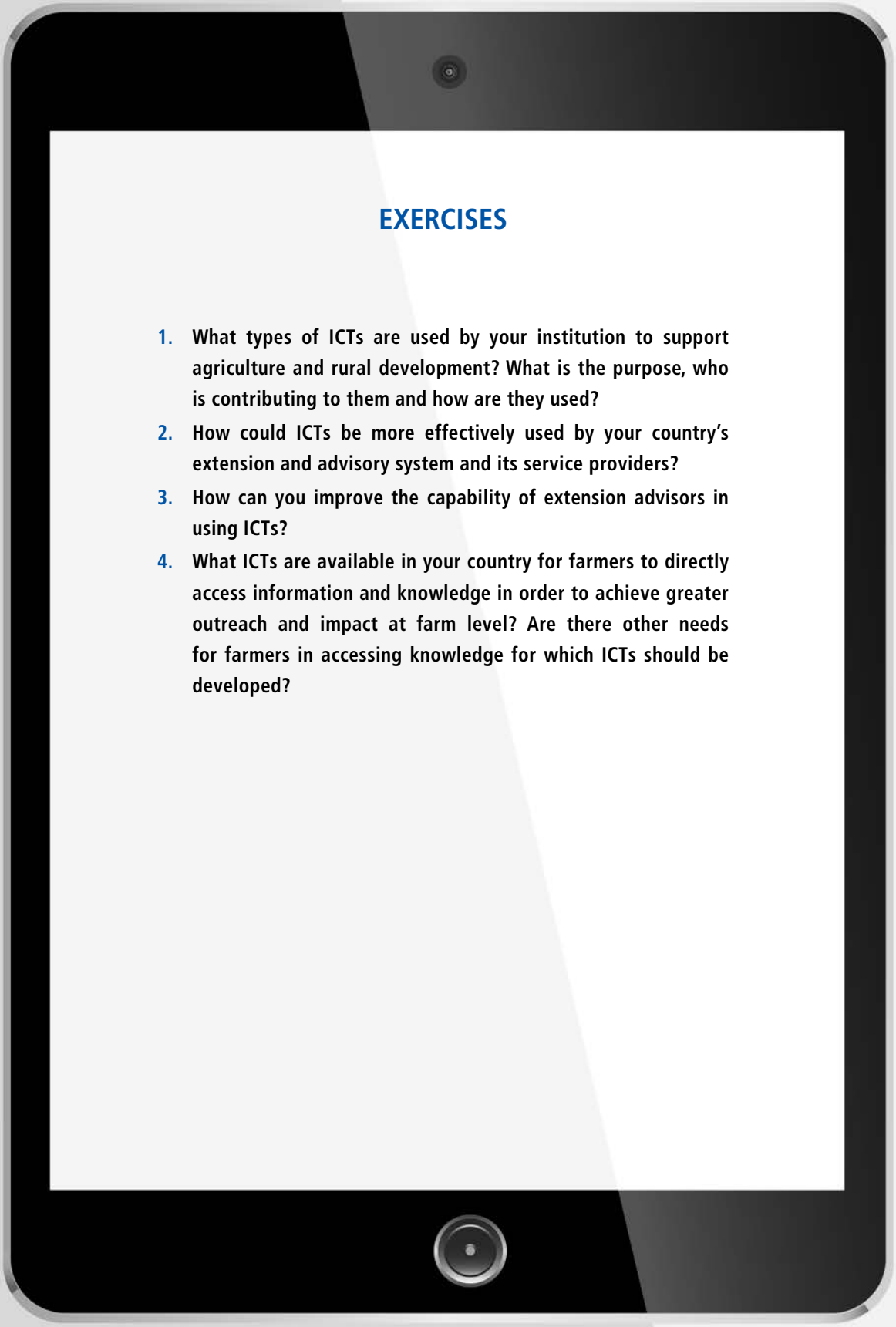
FHI 360. 2012. *Interactive radio for Agricultural Development Projects*. A toolkit for Practitioners. Durham, USA, FHI. (also available at: http://ictforag.org/toolkits/radio/downloads/InteractiveRadioToolkit_full.pdf).

TOOL 7.3: ICT-BASED EXTENSION ENHANCERS

ICT ENHANCED SERVICE	EXAMPLES OF ICT-BASED EXTENSION SERVICE PROVIDERS
Radio	Mali community radio, Farm Radio International
Call centers	KenCall, Ghana Call, Mali Shambani
Websites linked to innovation	Google Farmer's Friend, FAO
Videos to share ideas	Digital Green, Purdue phone videos
Distance learning	Brainhoney, Moodle, Lingos, Udemy
Digital forms	IFormBuilder, Do Forms
Mapping	ESRI, Google Earth, Poi mapper
Financial services	MPESA, Opportunity bank
Performance monitoring	Kimetrica, COSA
Market information	Reuters Lite, Esoko, KIT-Uganda, RATIN
Marketing links	E-Choupals
Farmer group business tools	Farmbook, icow, Farmforce
Community agents	Grameen – Community Knowledge Worker

Source

Ferris, S., Robbins, P., Best, R., Seville, D., Buxton, A., Shriver, J. & Wei, E. 2014. Linking smallholders to markets and the implications for extension and advisory services. *MEAS Discussion Paper Series* on Good Practices and Best Fit Approaches in Extension and Advisory Service Provision, May 2014.



EXERCISES

1. What types of ICTs are used by your institution to support agriculture and rural development? What is the purpose, who is contributing to them and how are they used?
2. How could ICTs be more effectively used by your country's extension and advisory system and its service providers?
3. How can you improve the capability of extension advisors in using ICTs?
4. What ICTs are available in your country for farmers to directly access information and knowledge in order to achieve greater outreach and impact at farm level? Are there other needs for farmers in accessing knowledge for which ICTs should be developed?

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WEBSITES

WEBSITES WITH DATABASES, KNOWLEDGE EXCHANGE AND DISCUSSION FORUMS	
Centre for Science, Development and Media Studies (CSDMS) - Knowledge for chance	http://www.csdms.in
e-agriculture - Posts on extension-advisory services - Posts on extensionists	http://www.fao.org/e-agriculture/category/e-agriculture-taxonomy/icts-agriculture-e-agricultural-related-technology/applied-icts-5 http://www.fao.org/e-agriculture/category/e-agriculture-taxonomy/audiences/extensionists
Equals Global Partnership – Digital gender equality	https://www.equals.org
eExtension Issues-Innovation-Impact	https://extension.org
FAO TECA	http://teca.fao.org
ICTworks – empowered by Inveneo and FHI 360's TechLab	https://www.ictworks.org
IT for change, India. Bridging Development Realities and Technological Possibilities	http://www.itforchange.net
ITU {International Telecommunications Union} ICTs for a Sustainable World #ICT4SDG.	http://www.itu.int/en/sustainable-world/Pages/default.aspx)
New Media and Development Communication by the Columbia School of International and Public Affairs	http://www.columbia.edu/itc/sipa/nelson/newmediadev/Table%20of%20Contents.html
Platicar Costa Rica	http://www.platicar.go.cr
The Technical Centre for Agricultural and Rural Cooperation (CTA) - ICT Up-date	http://ictupdate.cta.int
The World Bank Main report on eTransform Africa as well as sectoral reports	http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTINFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/0,,contentMDK:23262578~pagePK:210058~piPK:210062~theSitePK:282823,00.html
Vercon	http://km.fao.org/vercon/
NETWORKING TOOLS	
Dgroups	https://dgroups.org/
e-Ag Community of practice	http://www.fao.org/e-agriculture/e-ag-community-practice
APP FOR AGRICULTURAL DIAGNOSIS	
Plant Village	https://plantvillage.psu.edu/
Plantix	http://plantix.net/
COLLECTION OF AGRICULTURAL VIDEOS	
Access agriculture (agricultural training videos in local languages)	http://www.accessagriculture.org
Agtube (to upload and share your videos)	http://www.agtube.org/en
EXAMPLES OF E-LEARNING	
AGRICOLLEGES International, South Africa	https://agricolleges.com
Agricultural Training Institute in the Philippines	http://ati.da.gov.ph
Coursera	https://www.coursera.org
e-Extension Philippines	http://www2.e-extension.gov.ph/elearning
FAO e-learning courses	http://www.fao.org/elearning/#/elc/en/home
GFRAS Learning kit NELK modules	http://www.g-fras.org/en/knowledge/new-extensionist-learning-kit-nelk.html
Study.com	http://study.com/articles/List_of_Free_Online_Agriculture_Courses.html
World Bank Open Learning Campus (e-learning courses)	https://olc.worldbank.org
PUBLICATIONS WITH FURTHER LINKS	
Apps4Ag database	**CTA & e-agriculture.** 2017. Applications for Agriculture. ICT Update. Issue 85, June 2017. (also available at: https://publications.cta.int/media/publications/downloads/ICT085E_PDF.pdf)
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MODULE 8: Role of producer organizations in rural advisory systems and services

By Blum, M.L., Sulaiman, V.R. and Cofini, F.

OBJECTIVES

1. to examine the importance of organizing producers and illustrate different kinds of producer organizations (POs);
2. to review the challenges in strengthening POs;
3. to discuss the role of POs in governance and provision of RAS;
4. to identify the capacity development needed for POs to perform their roles in RAS; and
5. to examine the role of RAS in establishing and strengthening POs.

INTRODUCTION

One of the common aspects one has to highlight in participatory, demand-led and market-oriented rural advisory systems and services (RAS) is the importance of producer organizations (POs) in experimenting, reflecting, learning, communicating and in articulating demand (Module 3). POs are also crucial for linking producers to markets (Module 4). Globally, POs are also increasingly recognized as an important actor within the Agricultural Innovation System (Module 12) (Heemskerk and Wennink, 2006; Rondot and Collion, 2005; FAO, 2010, 2014a).

POs vary in their composition, objectives, purpose and the levels at which they operate. Many of these advocate for producer's interest, promote profitable economic activities for their members and provide advisory services to them. In several countries, RAS are increasingly channeled through POs. However, the problem is that smallholder producers, in particular women and other marginalized producers, very often lack the skills and resources to develop strong POs that can provide or access the services demanded by their members, influence policy decisions that affect their future, and compete in the market. To succeed, POs need a wide range of support services to increase their capacities. RAS have a key role in establishing and strengthening POs, though their capabilities to perform this role varies widely.

This module examines the role of producers and their organizations in rural advisory systems and services and what RAS can contribute so that POs can play their role. The capacity development needed by both, RAS and POs, will be outlined.

DEFINITIONS

Producer organizations

A producer organization (PO) is defined as:

> *"A formal (registered under national legislation) or informal (unregistered) institution for collective action. Its members are rural dwellers that get part, or all, of their livelihood from agriculture (crops, livestock, fisheries, or other rural activities, or a combination). Services provided by the PO aim to improve the livelihoods of its members, and include access to advice, information, markets, inputs, and advocacy."* (Rondon and Collion, 2001, adapted in Toillier et al., 2015, p.1).

POs refer to independent, non-governmental, membership-based rural organizations of part- or full-time self-employed male and female smallholder family farmers, pastoralists, artisanal fishers, forest people, landless people, small entrepreneurs and indigenous peoples. They range from formal groups covered by national legislation, such as cooperatives and national producer/farmer unions, to looser, self-help groupings and associations. POs are based on principles of non-discrimination, providing a range of services for their members, including market opportunities and empowerment for all their members: women, men and youth.

POs are grounded on the principle of collective action among potential beneficiaries. Collective action occurs when individuals voluntarily cooperate as a group and coordinate their behavior in solving a common problem. POs can serve to both bond and bridge with social capital (Putnam and Richardson, 2000). Bonding refers to the formation of producer self-help groups, while bridging refers to the linking of producer groups with other outside groups that have common interests.

Cooperatives

Cooperatives are business enterprises owned and controlled by the very members that they serve. Their member-driven nature is one of the most clearly differentiating factors of cooperative enterprises. This fact means that decisions made in cooperatives are balanced by the pursuit of profit, and the needs and interests of members and their communities (UN-IYC, 2012).

DISCUSSION

Why producers should be organized?

POs are increasingly considered a critical component of a rural economy's success, and many governments are beginning to recognize their benefits. Across Africa, many POs have emerged after the collapse of state-led cooperatives, seeking partnerships with government, the private sector and international donors, for the purpose of reforming agriculture (FAO, 2010). Particularly in fragile states, rural organizations are crucial for bridging the gaps between public-sector provision of key productive and social services (Ragasa, 2014).

POs bring to the table a deep knowledge of the local context, a nuanced understanding of the needs of their communities and strong social capital. They are increasingly recognized as essential institutions for the advancement of agriculture, the rural economy and rural livelihoods. Politically, POs strengthen the political power of farmers, by increasing the likelihood that their needs and opinions are heard by policymakers and the public. Economically, POs can help producers gain skills, gain access to inputs, form enterprises, process and market their produce more effectively to generate higher incomes (Hill, 2011).

POs keep members informed of relevant policy, market and technology development through newsletters and events. Their activities are generally paid for by membership fees and donor contributions. Their ability to develop linkages between RAS providers and smallholder farmers has been highlighted as essential to the formulation of appropriate and effective RAS approaches that can also enhance interventions on food security (FAO, 2010).

The quality of the relationship developed between producers' organizations and government authorities fosters the harmonization of all the activities at the community level. Direct relations between producers' organization and government authorities help PO members keep in contact with public officers. Local offices can assist in supporting farmers' needs and addressing problems. Through this relationship producers' organizations can be involved in decision-making processes and can influence legislative advancement affecting community development (AFC, EU, IFAD and SDC, 2013).

For RAS, working with producer groups is advantageous as this helps in improving its outreach, efficiency, effectiveness and impact. Case studies drawn from experiences in sub-Saharan Africa show that agricultural research and advisory services are increasingly being channeled through more commercialized POs (Wennink and Heemskerk, 2006).

POs are increasingly represented in advisory committees of research and RAS organizations and participate in policy consultations at the national, regional and international levels.

> *"Major efforts are underway in sub-Saharan Africa to organize rural POs in many countries, including Burundi, Cameroon, Ghana, Kenya, Madagascar, Malawi, Mali, Namibia, Senegal and Uganda, and these numbers are expanding. In addition, agricultural extension projects in some Asian countries, such as China, India and Indonesia, have been very effective in organizing tens of thousands of rural POs and these numbers are expected to continue growing"* (Swanson and Rajalahti, 2010: 16).

Types of POs

POs can take many forms, ranging from formal institutions, such as cooperatives, to informal producer groups and village associations. A number of typologies have been developed that distinguish POs on the basis of their legal status, function, geographical scope and size.

The World Development Report (2008) distinguishes three categories of functions:

- economic services by commodity-specific organizations;
- broad-interest representation by advocacy groups; and
- diverse economic and social services by multipurpose organizations.

Organizations that provide economic services include cooperatives that process and/or market the products of their member farmers. A typical example is a dairy cooperative, that processes the raw milk supplied by farmers into less perishable dairy products, or which collects and delivers the raw milk to a processing factory.

POs can give smallholders a political voice, enabling them to hold policymakers and implementing agencies accountable by participating in agricultural policymaking, monitoring budgets and engaging in programme implementation. Such advocacy organizations, like farmer unions, may lobby local, regional or national policymakers on behalf of their members.

Multipurpose organizations, particularly those at the community level, often combine economic, political and social functions. They provide farm inputs and credit to their members, process and/or market their products, offer community services and carry out advocacy activities.

POs exist at the village, regional, national and even international level. Both commodity-specific organizations and advocacy organizations often have both local and regional/national branches. Multilayer POs are structured as federations, with the lower-level organizations being members of the higher-level organization.

Many POs are producer initiated with state, donor or NGO support. Some of these organization are community-based, aimed at natural resource management, or could be commodity based. While some are covered by national legislation such as producer associations and co-operatives, many are informal operating as self-help groups. Informal organizations are more flexible in adapting to changing environments, particularly in countries where legislation (such as cooperative law) is rather restrictive (Bijman and Ton, 2008). While associations are not-for-profit organizations, the cooperatives are engaged in commercial activities such as the processing and marketing of farm products or the purchasing of farm inputs.

Some of the institutional characteristics that features POs strongly affect their sustainability. These are for example: the density and diversity of membership, decision making by members, meeting attendance, and high levels of trust and solidarity, their social capital such as social affiliations within POs, the internal group dynamics, the nature of RAS support, and the partnerships that draw on combined public and private investments (GFRAS, 2015).

VARIOUS TYPES OF POS AND THEIR ACTIVITIES

POs become organized at varying levels, from local to national, to sub-regional to regional and international level. Depending on the level at which POs and their unions or federations are active, their mandate and objectives vary.

National-Level POs

There are many primary-level agricultural cooperatives in the developing world. In China, specialized commodity associations began with bonding-style organizations, in which farmers grow geographically and economically suitable high-value crops, as advised by other more educated members (Swanson *et al.*, 2003; Swanson, 2005). Agricultural Development Cooperatives are distributed all over Turkey. In Japan, the JA Group (Japan Agricultural Cooperatives) the umbrella organization representing 700 agricultural cooperatives at the local level, provides a wide range of services to its ten million members and these include, farm guidance, marketing, supplying credit, mutual insurance and medical service (Fujimoto, 2014).

Growing marginalization of smallholder farmers within increasingly liberalized agriculture markets, has contributed to the growing assertion of POs in defending local interests and ensuring that farmers participate in policy dialogues, particularly within national and regional forums. KENFAP (Kenya National Federation of Agricultural Producers) is the umbrella organization of producers' organizations in Kenya. KENFAP has over 60 area branches (at district level), 36 commodity associations and 15 co-operatives. The membership of KENFAP is about 1.8 million farmers. The mission of KENFAP is to empower its members to make informed choices for improved and sustainable livelihoods. It tries to protect the interests of farmers by stimulating beneficial policy changes through lobby and advocacy and focus on adoptable research through requisite engagement in research dialogue.

In Tanzania, Mtandao wa Vikundi vya Wakulima Tanzania (MVIWATA) is the national PO, with a membership of more than 150 000 smallholder farmers. The organization focuses on lobbying and advocacy by: strengthening farmers' groups and networks; representing its members in policy dialogues; and facilitating communication and learning. Members are entitled to training opportunities on leadership, advocacy and communication, and cross-cutting themes, such as climate change or sustainable agriculture. The organization provides services and resources to its members, including technical advisory services on business skills, market access, internal audit of rural enterprises and crop banking (Wongtschowski *et al.*, 2016).

Regional and Sub-Regional POs

In West Africa, one of the major regional producers' organizations is the Network of Farmers' and Agricultural Producers' Organizations of West Africa (ROPPA) and it has representatives from 10 countries – namely, Benin, Burkina Faso, Cote d'ivoire, Gambia, Guinea, Guinea-Bissau, Mali, Niger, Senegal and Togo. ROPPA is also a member of the Pan African Farmers Organization (known as PAFO) which was formally launched in 2010. PAFO is made up of five regional farmers' platforms from across Africa: ROPPA, the Southern African Confederation of Agricultural Unions (SACAU), the East African Farmers Federation (EAFF), the Maghrebian Farmers Union (UMAGRI) and the Platform of Farmers Organizations in Central Africa (PROPAC). PAFO implemented the Support for Farmers' organizations in Africa Programme (SFOAP), a pilot phase from 2009-2012 and a five-year Programme (2013-2017) supporting farmers' organizations in Africa funded by the European Union (EU), the International Fund for Agricultural Development (IFAD), the Swiss Agency for Development and Cooperation (SDC) and the French Agency for Development (AFD - Agence Française de Développement). In 2017, a partnership with CTA and AGRICORD was created with an agreement that aims to (i) support the development of an inclusive agri-food industry that will enable farmers to play a greater role in the value chain and increase their incomes; (ii) increased use of farmer data to improve market access through collective sales; and support for registration of members to establish farmer profiles to improve access to finance, (iii) establish partnerships to support the development and adoption of precision farming practices, and the use of big data by farmers. Fundraising to support these activities; and (iv) Support internal and external communication activities to promote the aforementioned efforts (PAFO, 2017).

The Caribbean Farmers Network (CaFAN), formed in 2004, is a regional network of Farmers' Associations and NGOs in the 13 Caribbean countries. CaFAN's major focus is to foster linkages, training and information sharing amongst Caribbean farmers so that they are in a better position to respond to the key challenges facing the agricultural sector in the Caribbean.

The East Africa Farmers' Federation (EAFF) is a non-political, non-profit and a democratic apex organization of all farmers of Eastern Africa. Its role is to voice legitimate concerns and interests of farmers of the region with the aim of enhancing regional cohesiveness and social-economic status of the farmers (See case study).

The Asian Farmers Association for Sustainable Rural Development (AFA) is a regional alliance of 10 farmer federations and organizations in 8 Asian countries, representing around 10 million farmers. AFA advocates for the rights of small-scale men and women farmers in Asia, promotes cooperation and solidarity, and supports capacity building among them.

> *"In Europe, national farmer unions in Western and Southern Europe have often effectively advocated for agricultural and rural subsidies and have succeeded in influencing the Common Agricultural Policy in their interests"* (Adolph, 2011).

Other examples of POs

In India, organizing user groups such as water user groups or as catchment committees is an essential component of irrigation management and catchment development programmes. Under ATMA (the Agricultural Technology Management Agency) producers are organized as farmer interest groups (FIGs) to help them pursue high value crop, livestock and other enterprises for increasing farm income (Mishra and Swanson, 2009). All major centrally sponsored schemes of the Ministry of Agriculture have incorporated special provisions for promotion and development of POs, which are identified as one of the key strategies for achieving inclusive agricultural growth (Government of

India, 2014). The Indian Government is observing 2014 as the "Year of Farmer POs". The Ministry of Agriculture has developed clear guidelines (Policy and Process Guidelines) on setting up POs (Government of India, 2013)

In Bangladesh there are already many community-based organizations (CBOs) managing floodplain natural resources. They were formed by projects that typically focused on fisheries, environment or water management in a defined area. These CBOs were mostly facilitated by NGOs through externally funded projects and are registered as legal entities. The government has recognized their rights and responsibilities (Sultana and Thompson, 2008). Organization of Self Help Groups (SHGs) with 10-20 members is the first step for implementing micro-finance and rural employment programmes by Governments, NGOs and financial institutions in several countries. In India, the Vegetable and Fruit Promotion Council, Keralam (VFPCK), works through the SHGs of vegetable and fruit farmers. It currently works with over 8 900 SHGs with almost 172 000 farmers. In Papua New Guinea, the PNG Women in Agriculture Development Foundation operates in 20 provinces, with 104 registered groups of 15-25 members in each group. Smallholder women farmers, locally-based entrepreneurs and farmer experts apply for assistance based on their small-scale activity and the Foundation assists their women members to improve their plans (Linibi, 2011).

CHALLENGES IN ESTABLISHING AND STRENGTHENING POS

Inclusion

Although the number of POs is increasing in many Asian and sub-Saharan African countries, it is generally easier to organize resource-richer farmers into POs. Therefore, some categories of farmers, such as the resource-poor, women, and ethnic minorities are unlikely to become as engaged as other farmers in these emerging POs. As a result, the specific needs of these non-participating farmers will too often be overlooked, or such farmers may be excluded from the provision of these needed services (Wennink, Nederlof and Heemskerk, 2007). Hence, the inclusion of resource-poor farmers, women and other disadvantaged groups into POs need to be specifically addressed when designing approaches to promote POs.

Capacity

In most developing countries, public extension services traditionally have not been very interested in organizing farmers. In addition,

> *"because extension's primary focus has been on technology transfer for major crops, building social capital did not play an instrumental role in earlier agricultural development strategy"* (Swanson and Rajalahti, 2010).

Too often POs are used only as a mere means to deliver activities and services and their character as autonomous and sustainable institutions is overlooked, together with their potential to partner with other development actors (FAO, 2014a).

Members of POs will need basic leadership, organizational and management skills. As extension advisors in many countries lack knowledge and skills related to facilitating group formation and management, and organizational development in general, they often form groups in a hurry to achieve imposed targets, leading ultimately to very poor results. Field staff who strengthen POs need practical field tools to learn and practice in the field, with supportive supervision (Miranda, 2011). Effective organizations are embedded in dynamic multi-agent networks that link their members to ideas, resources, incentives and opportunities beyond their rural communities (Berdegué, 2008). Therefore, both RAS agents and PO leaders need the capacity to facilitate organizational development processes and to engender linkages while brokering within and among networks.

External support and internal resources

With often meagre resources and limited organizational and technical capacities, many POs need external support to initiate or expand, or both, their operations. Quite often the membership fees are insufficient to pay for the services expected. But striking the right balance between reliance on external and internal resources, between accountability and pro-active leadership, between adaptive and effective governance and between over-and under-ambition is a challenge for all farmer-led groups. External support therefore needs to be carefully targeted, sensitive, consistent and, above all, patient if POs are not to be yet another development disappointment (Thompson *et al.*, 2009). In addition, the mobilization of own resources by the POs is a crucial element in any strategy for their independence and sustainability. POs can develop a variety of activities to generate their own resources such as membership fees, income generating activities and agro-business activities for which capacities should be strengthened. Developing successful formal organizations requires a learning process and major investment of time and resources for institutional and human capacity development. A case of strengthening business oriented POs in Ghana is illustrated in Case 8.3.

Box 8.1: Producer organizations: Key factors for success

Several factors contribute to a strong, successful and sustainable PO. These include:
Autonomy Though some POs may be formed by external facilitators, autonomy is essential for long-term sustainability. Leadership, vision and initiative must come from within the organization. Decisions must be made genuinely by the members and not through direct or indirect imposition by facilitators. This does not mean that there is no role for facilitators, but rather that all who are engaged as such must genuinely be working towards the complete autonomy of the organization within a defined time frame. In order for this to be feasible, the formation of POs cannot be an externally-imposed process, but must, instead, highlight the benefits of being organized, facilitate peer-to- peer learning from POs already established, and build on existing networks within villages. This process takes time and those planning to support the formation of POs must allow for it.
Inclusive leadership Strong leaders that mobilize and engage their members are also key factors in ensuring the sustainability of POs. Leaders must be genuinely endorsed by members and must make continuous efforts to engage and communicate with their organization. Grievance and accountability mechanisms should also be in place to address any concerns about poor leadership.
A strong membership base A PO is as only as strong as its members. If the members are strong, its leaders are likely to be strong as well. The reverse is not necessarily true. In Bangladesh there is a large risk of leaders taking all the benefits of the PO for themselves and not sharing with members ("elite capture"). As such, developing a strong, empowered membership base is critical for ensuring the sustainability of the organization. Members must be engaged in the affairs of the organization and must be able to hold their leaders accountable.
Needs-based service provision Services provided by the PO must be based on the true needs of its members, and not on the pre-conceived notions of external actors. If service provision does reflect actual needs, this can be key to ensuring the financial viability of the PO. This can take shape through the development of an enterprise (a seed mill, for example) that can generate revenue for the organization. It could also be through the provision of information or advocacy services, which do not, per se, generate revenue, but do ensure an engaged membership base that is more likely to see the benefits of partaking in the organization (ensuring a steadier stream of membership dues, which contributes to financial sustainability).
A clear, 'owned' purpose A key step in the PO development process must be for farmers to make their purpose for organizing explicit. This purpose must be clear to all concerned farmers, and not just to the facilitators who, in many cases, impose their own ideas. This is a large factor contributing to the mechanical nature of PO development, and why organizations are at risk of failing upon closure of the project under which they were developed.

Source: **FAO.** 2014b. *Farmers' Organizations in Bangladesh: A Mapping and Capacity Assessment.* Rome, FAO. (also available at: http://www.fao.org/docrep/019/i3593e/i3593e.pdf).

RAS AND POS

The role of POs in RAS governance and RAS provision

POs play multiple roles in the realm of advisory systems and services (Tollier *et al.*, 2015). Working with producer groups means for advisory services to improve its outreach, effectiveness, efficiency and impact. Case studies drawn from experiences in Sub-Saharan Africa show that agricultural research and advisory services are increasingly being channeled through more commercialized POs (Wennink and Heemskerk, 2006).

POs are crucial on both the demand and the supply side of RAS.

On the **demand side,** they have a strong role in the formulation, articulation, negotiation and coordination of producers' demands (Sulaiman and Blum, 2016; FAO and KIT, 2016). Systematic approaches to demand identification and priority setting by POs are not wide spread while it is the most crucial aspect in making RAS more relevant. POs need to be supported financially and technically in carrying out these approaches for demand articulation, negotiation and contracting of services (Chipeta and Blum, 2018).

Most of the innovations needed nowadays in agriculture have collective dimensions, i.e. they require new forms of interaction, organization and agreement among multiple actors (Leeuwis and van den Ban, 2004). It is paramount that POs are part of, and have a say in, such multi-stakeholder partnerships.

On the **supply side**, POs provide services to their members both directly by implementing and controlling their services and indirectly by seeking partnerships with other service providers to complement their offer. They also jointly provide services with other value chain actors such as private sector and state agencies (state agencies can also fund the PO to provide the services, see module on funding mechanisms and innovative financing mechanism). POs use mechanisms such as embedded services (provision of agro-inputs and machinery, warehousing, marketing etc), service fees and co-financing to fund extension and advisory provision. A recent study from Chipeta and Blum (2018) concluded that services are more relevant to farmers' needs when they are involved in both definition and provision of services.

POs, including co-operatives, provide advisory services related to commodities along entire value chains. However, they differ in their scale of operation, influence on value chains and activities and their involvement in different commodities and regions vary widely. For instance, in several European Countries, such as Denmark, Finland, France and Germany, producer associations carry out extension with partial government sponsorship. In Denmark, most new knowledge reaches farmers through the 31 Advisory Companies in the Danish Agricultural Advisory Services (currently known as the Knowledge Centre in Agriculture) partnership which employs 2000 advisors and other staff.

Producer-based RAS organizations such as Kondinin group and Birchip cropping in Australia, and producer associations such as National Small Holder Association (NASFAM) in Malawi and commercial farmers' union in Namibia also provide a wide range of RAS and other support services to their members. In India, the Maharashtra Grape Growers Association regularly conducts group discussions and seminars for the grape cultivators, and publishes leaflets and booklets covering different topics in grape cultivation.

POs have an **advocacy role** by enhancing their members' interests and influencing policy formulation to improve RAS and ensuring that the voices of farmers are represented. Furthermore, they have a **role in RAS governance**. There is an increasing number of countries in which POs are represented in the national governing bodies of advisory systems (Ivory Coast, Kenya, Senegal, others), but also in value chain related coordination mechanisms to participate in policies, programme formulation, planning and implementation as well as evaluation of RAS. Furthermore, more and more innovation platforms are emerging in which POs are not just participating, but which POs are actually managing, for example the PROLINNOVA farmer led research networks in the Sahel (PROLINNOVA, 2018).

POs also keep members informed on relevant policies, markets and technology development through newsletters and events. They have put forward a plethora of objectives in their agenda for market reform and food security. In defence of smallholders, farmer-based groups have campaigned for fairer market conditions (revolving around the issue of price control for cash crops), fairer access to international markets, improved government support in relation to advisory services, the provision of rural infrastructure and a greater role for smallholder farmers in the decision-making process (FAO, 2010).

For example, the Citrus Growers Association (CGA) of Southern Africa represents the interests of the producers of citrus for export. In total, approximately 1400 growers throughout Southern Africa (including Zimbabwe and Swaziland) are members of the Association. CGA provides growers and the entire industry with new and useful information. It uses research symposiums and roadshows plus the two yearly citrus symposium to reach the different stakeholder related to citrus.

THE ROLE OF RAS ACTORS TO PROMOTE POS

Organizing producers into viable, efficient and inclusive groups and enhancing their capacities to collectively address their challenges are increasingly considered as critical functions of RAS and innovation processes (FAO, 2014a; Sulaiman and Blum, 2015).

For RAS, working with producer groups is advantageous as this helps to improve its reach; effectiveness and efficiency; and impact. It is the most important method for advising and promoting the interests of a larger number of farmers. Hence RAS should consider POs as partners rather than as beneficiaries, and invest in exchange and partnership with them. It could organize education and training programs for rural leaders, and support the exchange of experiences among POs (Sulaiman and Blum, 2015). Organizing user groups is also considered as an important task of managing innovation (Sulaiman *et al.*, 2010).

Donors have currently started funding sub-regional and regional POs to take a lead in strengthening POs in different countries. Governments must assist in the development of POs by creating the right macroeconomic enabling environment in pursing agriculture sector growth. Development agencies and governments should promote the engagement of POs in policy development relating to agriculture and rural development.

Development agencies should actively work towards the integration of concerns and issues voiced by PO as critical inputs in the formulation of rural development programmes. Capacity development of POs should be underlined as a priority for development agencies in devising rural development interventions. Research institutions can greatly benefit from engaging POs in the formation of agriculture research agendas and promoting regular joint research with POs or farmer groups. The position of POs will certainly be strengthened when working towards developing greater autonomy and self-reliance, particularly in the areas of finance and human resource capacity.

The Global Forum for Rural Advisory Services (GFRAS) (2015) provided a set of recommendations for the actors involved in RAS to support POs in fulfilling their roles in supplying and demanding rural advisory services. These are:

- strengthen the capacities of POs in key areas such as performance, governance and organizational capacity, economic, environmental and social sustainability, etc.;
- respond to demands articulated by POs;
- consider POs as partners rather than as beneficiaries;

- endorse transparency on what resources can be provided, and under which conditions;
- provide clear opportunities for change as incentive for POs to enter partnerships;
- invest in exchange and partnerships with POs;
- establish and apply financial mechanisms that correspond to producers' demands and consider sustainability aspects; and
- advocate for improvements in rural infrastructure.

These activities involve specific skills and competencies of advisors. These skills are very different from traditional technical advice. It requires a real advisory and facilitating role, while leaving final decisions to the POs. At the same time, much stronger social and communication competencies are needed to promote critical thinking and visioning for the future.

Capacity development for RAS and POs

Limited capacities at different levels for effectively developing strong and viable POs is a major main challenge to address if the potential of POs are to be mobilized. Also, within POs, a set of capacities is needed to perform their roles in RAS. A recent expert consultation on inclusive pluralistic service systems, organized by FAO and KIT (2016), stressed the importance of capacity development and financial support of POs to enhance downward accountability of service provision.

Group approaches are more challenging for RAS organizations as it makes increased demands on the methodological and organizational skills of the advisers (Hoffman *et al.*, 2009). In addition, most of the extension advisers in developing countries do not have adequate skills related to organizational development, implying skills in facilitation, institutional and organizational analysis, guiding of self-evaluations, among others. Developing skills related to community mobilization, conflict management, problem solving, organizational performance enhancement, social learning and negotiation should be a priority for professional development in RAS. This means that RAS would need either to recruit special advisors or train its advisors in approaches to strengthen POs, as not all extension advisors could fulfil all these tasks.

Most POs or producer groups need training in basic leadership, organizational and management skills. Many of these groups would need technical and marketing skills to produce and market better quality products. Donors have currently started funding sub-regional and regional POs to take a lead in strengthening POs in various countries. It should also be the ultimate goal of RAS to support capacities in POs so that they have their own leaders and resource persons to promote their organizations and activities.

Thompson *et al.* (2009) suggest that

"strengthening and empowering POs will involve a significant amount of trial and error, as there is no foolproof recipe for success. This will require a certain amount of "learning by doing", taking risks, making mistakes and learning from both success and failure".

Some recommendations for strengthening POs are (FAO, 2010):

- Governments must assist in the development of POs by creating the right macroeconomic enabling environment in pursing agriculture sector growth.
- Development agencies and governments should promote the engagement of POs in policy development relating to agriculture.
- Development agencies should actively work towards the integration of concerns and issues voiced by POs as critical inputs in the formulation of rural development programmes.
- Capacity building of POs should be stressed as a priority for development agencies in devising rural development interventions.
- Research institutions should engage POs in the formation of agriculture research agendas and promote joint research with farmer groups.
- POs should work towards developing greater autonomy and self-reliance, particularly in the areas of finance and human resource capacity.

The FAO-IFAD (2012) publication "Good practices in building innovative rural institutions to increase food security" documents experiences of different types of interventions adopted to strengthen POs and this document should be of interest to all those interested in strengthening POs.

Case studies

CASE 8.1: FARMER OWNED ADVISORY COMPANIES - THE CASE OF DAAS

The supply of advisory services in Denmark mainly happens within the farmer-based, -owned and -controlled advisory system known as the Danish Agricultural Advisory Service (DAAS). The DAAS-cooperation consists of 30 advisory centres and they have approximately 3000 employees. These 30 DAAS centres, which are independent of one another, still cooperate today and dominate the market for advisory services in Denmark. The director of each DAAS centre is a member of the DAAS Board of Directors. The DAAS board regularly meets and discusses the situation and needs of the advisers, of the farmers and the agricultural sector.

The Knowledge Centre for Agriculture is part of DAAS, but acts as the national research and knowledge facilitator adapting knowledge from national and international scientific research and knowledge sources. The Knowledge Centre for Agriculture works as the connecting link between university research and education and the Danish day-to-day system of advisory services.

Each DAAS centre is owned by one or several (the trend) farmers' local associations.

In the past, there were many more local farmers' associations and each had their own society or association of advisers attached to them. In the last 30–50 years these local societies and associations have become separate from – but still owned by – the local farmers' associations, and have developed into more distinct and business-like advisory centres, increasingly looking like private business companies.

The primary sources of financing for the entire DAAS derive from payments for services from farmer clients to the local advisory centres, and from services provided by the Knowledge Centre for Agriculture to the local advisory centres. The advisory services at the local centres provide services for approximately 48 000 customers. Of which 40 000 are farmers and 8 000 are rural based small and medium-scale enterprises (SMEs) in related trades.

A large range of advisory methods are used by the advisers. This includes face to face and farm visits (40 percent), meetings with groups of farmers (10 percent), conducting demonstrations, workshops and field days for farmers, and meeting farmers at the office (30 percent).

Source

Madsen-Østerbye J. 2014. *AKIS and advisory services in Denmark*. Report for the AKIS inventory (WP3) of the PRO AKIS project. (also available at: http://proakis.webarchive.hutton.ac.uk/sites/www.proakis.eu/files/Country%20Report%20Denmark%2006%2006%202014.pdf).

b) Knowledge Centre for Agriculture in Denmark

The Knowledge Centre for Agriculture (VFL), formerly known as the National Centre for Agriculture-was established in 1971 by the co-operative associations of Danish Farmers and Danish Family Farmers. The primary aim of the National Centre was to support the advisers of the local farming associations by offering specialized advisory services. In addition, the National Centre collected results from the work of the local associations and processed them into national statistics. Another important task was to ensure coordination in planning the work to be undertaken by the local organizations, and to initiate the solving of new tasks within the individual sectors of agriculture.

In April 2003, the Agricultural Advisory Centre changed its name to Danish Agricultural Advisory Service (DAAS), establishing a new cooperative relationship among the majority of Danish advisory centres and the Advisory Service. In 2010, DAAS changed its name to the Knowledge Centre for Agriculture (VFL) to gain a more prominent profile as an organization collecting, processing and spreading knowledge and know-how.

The Knowledge Centre for Agriculture - owned by Danish farmers has a responsibility to ensure that farmers of all types – irrespective of size – are able to run efficient, environmentally friendly and sustainable business. The structural development is reflected in the diversity of skills at the Knowledge Centre, where the 500 employees represent up to 70 academic fields. 75 percent of the employees have a university education. The employees are involved in all farming-related matters: from large-scale agricultural issues, crop production and livestock, to finance, tax, legal matters, information technology, architecture, accounts, HR, training, the environment, nature conservation, landscape planning and rural development.

More than 1000 field trials are carried out nationally, to test different cultivars and technologies in order to identify how to obtain the best possible results under different conditions. The field trials are conducted by employees from the Knowledge Centre, in partnership with advisory staff from the advisory companies.

The Knowledge Centre has been selected to manage a number of assignments for the EU in connection with the implementation of the EU's regulations and standards for agriculture in new and future member states.

Source

Knowledge Centre for Agriculture. 2011. *Putting Knowledge to Work*. Aarhus, Denmark, Knowledge Centre for Agriculture.

CASE 8.2: MTANDAO WA VIKUNDI VYA WAKULIMA TANZANIA (MVIWATA) – NATIONAL NETWORKS OF FARMERS' GROUPS IN TANZANIA

MVIWATA is the Tanzanian national farmers' organization. It was founded in 1993 and has a membership of more than 150 000 small-scale farmers. The organization focuses on lobbying and advocacy by strengthening farmers' groups and networks, representing its members in policy dialogues, and facilitating communication and learning.

Members are entitled to training opportunities on leadership, advocacy, communication and cross-cutting themes, such as climate change or sustainable agriculture. Interested farmers can apply, and around 100 farmers per year are selected and trained in the residential training centres of MVIWATA. The organization also offers various services and resources to its members, including technical advisory services on business skills, market access, internal audit of rural enterprises and crop banking.

MVIWATA plays an important role in land governance, which is characterized in the United Republic of Tanzania by a high degree of institutional fragility, resulting in limited farmer participation in decision-making processes and insecure landholding. In order to face these challenges, the organization provides village-based training on land rights, organizes legal clinics in villages, and facilitates the provision of customary certificates of rights of occupancy, including demarcation of village and individual lands.

MVIWATA issues evaluation forms to farmers so that they can comment on the services. The feedback suggests that after 23 years of operation, farmers are more confident about addressing their problems. Nevertheless, major challenges remain: poor accountability of services, insufficient farmer participation in priority setting, and limited transparency.

Source

FAO and KIT. 2016. *New directions for Inclusive Pluralistic Service Systems. Report of FAO Expert Consultation*. Rome, FAO.

CASE 8.3: EAST AFRICA FARMERS FEDERATION (EAFF)

EAFF is a non-political, non-profit and democratic apex organization of all Framers of Eastern Africa. It was formed in 2001 and its chapter registered in member counties (Burundi, Democratic Republic of Congo, Eritrea, Ethiopia, Kenya, Rwanda, Tanzania and Uganda). The membership in the federation is only allowed from peasants and POs that are "National" and have a network system that emanates from bot small- and large-scale farmers at the village level. It implements several programmes for the benefit of its members. Some of these are as follows:

EAFF is an implementing partner of the COMESA (Common Market for Eastern and Southern Africa) Regional Agro-inputs Programme (COMRAP). EAFF has been contracted by the Alliance for Commodity Trade in Eastern and Sothern Africa (ACTESA) to implement the activities that pertain to farmers and farmer organizations. EAFF is leading the implementation of such activities in four countries – Burundi, Ethiopia, Rwanda and Uganda. EAFF is working through the member organizations in these countries. A total of seven national farmer organizations in the four countries organizations are implementing this project. COMRAP is implemented through three components – Agro-dealer and agent training; Finance for smallholder farmers; and Seed sector policy and development.

Another project implemented by EAFF is the Farmer Empowerment for Innovation in Smallholder Agriculture (FEISA) supported by Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA). Through this project, farmers' organizations in Kenya, Rwanda, Burundi and Ethiopia will obtain the tools and skills to assess their functioning, followed by organizational change to improve their management and governance at all levels of organization, and to improve the participation of their members in value chains. The project aims at enhanced collaboration with service providers from the public, private and NGO sectors, as well as with private enterprises in a multi-stakeholder process around innovation triangles of selected value-chains, where learning and innovation are essential. This will provide lessons and build the capacity of farmers' organizations to provide market access services to their members.

EAFF's Regional Policy Lobbying and Advocacy Project supported by the Swedish Cooperative Centre Regional Office for East Africa (SCCROEA) focuses on strengthening the capacity of EAFF and its member organizations in the area of policy formulation, lobbying and advocacy. This capacity will cover the areas of problem identification, policy formulation, validation, lobbying and advocacy, and tracking. The overall objective of the project is to strengthen the lobbying and advocacy capacities of POs to respond to agricultural development challenges in Eastern Africa. The project addressed this objective in two ways. First, by building capacities in the afore-mentioned areas; and second, by undertaking activities in these areas, including actual identification of problems; formulation of policy proposals; validation of those proposals; lobbying and advocacy to policymakers and other relevant stakeholders; and, lastly, policy tracking.

Source

EAFF. 2012. *Eastern African Farmers Federation.* [online]. http://eaffu.org/

CASE 8.4: STRENGTHENING BUSINESS-ORIENTED FARMER-BASED ORGANIZATIONS IN GHANA

Ghana's agriculture sector policy recognizes that Farmer-based organizations (FBO) development is a practical strategy to increase incomes of smallholder farmers. Only half the FBOs formed meet on a regular basis and have an active bank account as a savings and collateral mechanism. Of these functional FBOs, only a quarter access credit, which is typically provided by donor interventions. And for those FBOs that do access credit, repayment rates can be as low as 25 percent.

There are two major causes for the mixed results:

- Ineffective Sensitization of FBO Members: FBOs are formed *ad hoc*, in a rush. Field staff are often under pressure to form and strengthen FBOs to meet intervention targets for the cropping season. FBO members lack a unifying purpose, and often leave the FBO.
- Ineffective Orientation of FBOs: FBOs are oriented towards receiving promised inputs like loans, improved cultivars and fertilizer. Farmers perceive these promised inputs as handouts — an expectation created by numerous interventions delivering assistance. Once the intervener leaves, FBOs do not know how to access the inputs, and members desert the FBO.

Engineers Without Borders (EWB) has been working in northern Ghana with the Ministry of Food and Agriculture (MoFA) since 2007 to address the two major causes outlined above, and to improve FBO development results. The focus has been to develop and pilot an FBO strengthening programme using the "Agriculture As a Business" (AAB) field tool. AAB is a series of ten modules used by MoFA field staff when strengthening FBOs.

AAB is unique in 3 ways:

- **Replicates Positive Deviant Field Staff Approaches**
  As opposed to designing training materials from an office disconnected with the field, EWB worked side-by-side with innovative field staff to identify and capture best field practices. The AAB tool is a compilation of best practices to ensure it spreads practices that already work well with FBOs. It was compiled using an iterative approach of frequent testing and re-designing in the field, working with field staff.
- **Focuses on Action-Learning**
  Each AAB module has the FBO follow an action learning cycle. The FBO meeting begins with reflection on a story, proverb or photograph related to the module. The field staff then guides the FBO to the analysis, which is topic-specific. For example, in the Group Meetings module, the FBO analyses whether they are having good group meetings. The field staff then guides the FBO to make a plan, based on the FBO's analysis. The plan is action-oriented to ensure the FBO has actions that they can do to improve their FBO. The field staff then monitors the FBO's actions. The action-learning cycle begins again.
- **Practical On-the-job Training of Field Staff**
  Workshops are used sparingly to introduce topics and include demonstrations to inspire confidence in field staff to adopt the AAB tool. FBO strengthening takes practice to learn facilitation, and the AAB tool is an easy, safe way for field staff to practice, learn, and improve in the field, with supervisors providing back-stopping.

Results

EWB has measured over 60 percent improvement in FBO strength, averaging results from 34 selected FBOs among the 5 pilot districts which began adopting the AAB tool in 2008.

Challenges and Learning

EWB has observed that results are limited by two factors:

- Competing interventions that reinforce both the ineffective sensitization of FBO members, and the ineffective orientation of FBOs: FBO development takes time, and results do not come immediately. Farming is already a risk. Success and profit depends on many external factors like weather patterns, disease and pest outbreaks. Consistency in intervention approach is necessary during the FBO development process and over several crop seasons for farmer behaviour to change to incorporate sustainability.
- Inadequate follow-up by field staff, supervisors and visionary leaders: More frequent and targeted follow-up by field staff is required for strong FBOs to move forward with greater market access and improved profits. It is easy for field staff to stop supporting the FBO after completing the AAB modules. However, some FBOs require more than short, one-time interventions to be linked into the formal market due to misunderstandings and intimidation. Supervisors and visionary leaders must continually motivate and provide positive and constructive feedback to field staff.

Source

Miranda, W. 2011. *Strengthening Business-oriented Farmer Based Organisations*. Briefing paper. Canada, Engineers without Borders.

SUMMARY

POs are critical for improving the effectiveness and impact of advisory systems and services, and to increase their market orientation, demand-drive and participatory nature. POs play a variety of roles in rural advisory systems and services. They are making a crucial contribution to the provision, both direct and indirect, and enhancement of advisory services. Their ability to develop linkages between rural advisory providers and smallholder farmers have been stressed as essential to the formulation of appropriate and effective RAS approaches that can also enhance food security interventions. POs have a strong role in coordinating, articulating and negotiating demands of farmers, and they also have strong advocacy role in ensuring that farmers' voices are heard in policy-making processes and their interests represented. The involvement of POs in governing bodies of RAS, research and innovation platforms further enhances their advocacy role and ensures greater relevance of policies and programmes.

Furthermore, RAS has benefited from POs acting as multipliers in knowledge dissemination, a bridge between local agricultural knowledge and technical research expertise, and as a link in the agriculture innovation system, mainly toward other service providers and knowledge institutions. It makes a fundamental difference to the resource needs of RAS whether individual approaches or PO-based approaches are used in RAS as the PO-based approach can multiply efforts of RAS and hence increase its cost-efficiency and effectiveness.

Organizing producers into groups and strengthening their capacities to collectively address their challenges are increasingly considered as fundamental functions of RAS. RAS should consider POs as partners rather than as beneficiaries, and invest in exchange and partnership with them. All actors have a role to play in promoting POs and their role in RAS. Evidence from the ground shows that when strong rural organizations such as POs and cooperatives provide a full range of services to smallholder producers, they are able to play a greater role in meeting a growing food demand on local, national and international markets.

Donor approaches to rural development have increasingly acknowledged the various roles of POs, and in several countries donors are assisting sub-regional and regional POs to strengthen the capacity of national- and local-level POs. International NGOs are also currently working with POs to strengthen their governance, coordination, monitoring and evaluation systems. However, too often national governments lack the commitment to develop and implement a strategy with POs as key partners, and look at POs more as beneficiaries rather than partners.

For POs to play these various roles, capacity development at different levels and financial support to POs emerged as priorities, including capacities to raise their own resources. Skills related to organizing and strengthening POs are in short supply not only in many of the public-sector extension agencies, but also in other RAS organizations. There is a need to develop these skills among public and private sector extension advisers and within POs. The private sector, NGOs and public agencies could also help smallholder producers and their organizations to build their skills to access and use appropriate information and knowledge to innovate and adapt to changing challenges and markets in order to contribute to inclusive and sustainable growth in agriculture.

Tools for further study

TOOL 8.1: ASSESSING INSTITUTIONAL PERFORMANCE OF PRODUCER ORGANIZATIONS

This tool, comprising a set of criteria and institutional maturity indicators, is used to evaluate the health of producer companies in India.

TABLE 8.1: Assessing institutional performance of producer organizations

CRITERIA	INDICATORS
1. Characteristics	• Size: good enough to be viable and socially cohesive • Social homogeneity: kinship or other social ties, absence of dependency on relations. • Not dominated by politically/economically powerful members • Poor and women are included (if mandated)
2. Identity & structure	• Members know the purpose of forming PC • Members represent their households. • There is continuity in household representatives. • Members can give an account of all the PC's activities • Members can give an account (General) of the PC's finances
3. Leadership	• Leadership roles change, fixed tenure • Leaders have been elected/selected by the members. • Selection/election of leader based on desired characteristics
4. Functioning	• PC has a set of rules (by-laws) which have been discussed and agreed upon as well as sanctions for rule breakers • Regular BOD meeting and AGM take place with significant attendance • The majority of members (X percent) contribute to BOD/AGM discussion and decision making • Up to date maintenance of records and statutory compliances
5. Independence (in proportion to the age of the PC)	• Percent meetings of BOD/AGM regularly take place in the absence of promoting institution or with diminishing support • Records are maintained without or with little support from the Promoting Agency (PA) • Percent decisions are taken independent of the PA
6. Resource mobilization	• PC raises funds to carry out business • Overheads expenditure met with the own resources • Reserve funds builds up to X percent • PC mobilizes specialist skills or services from the government and private sources • PC obtains govt. scheme to meet identified needs (convergence with other schemes)
7. Resource management	• PC develops business plan and implementation is as per the plan • PC has shown ability to negotiate with the various stakeholders • PC effectively oversees/manages the work of executives working as • Salaried persons • Budget control • Transparency
8. Skill acquisition & use	• Percent of BOD members have attended training programmes (including specialized training) • BOD has used planning skills to identify and solve operational problems.
9. Distribution of benefits	• Equitable distribution of benefits (dividends and services) • Mechanism of benefits-sharing developed and adhered to

Key: AGM = Annual General Meeting; BoD = Board of Directors; PC = Producer Companies.

Source

Government of India. 2013. *Policy & Process Guidelines for Farmer Organizations.* Ministry of Agriculture, Government of India. (also available at: http://mofpi.nic.in/sites/default/files/fpo_policy_process_guidelines_1_april_2013.pdf).

TOOL 8.2: BUILDING BLOCKS FOR A STRONG FOUNDATION

The following questions aim to help agencies involved in forming new and strengthening existing POs to assess whether a number of important building blocks that contribute to a strong PO foundation are present among the participants or potential members.

BUILDING BLOCKS	CRITICAL QUESTIONS
Basic motivation	• Is the participants' main motivation for forming or joining the group the desire to solve their own marketing problems or to access external assistance? • Do producers view group formation as a condition for accessing external assistance or resources? • Can the producers provide a clear explanation of why collective action is necessary and how it will improve their market access? • Do the producers have a shared experience of exploitation in the market, which they want to overcome through collective action?
Sense of ownership	• Do the producers want external assistance to support their own efforts to address their problems or do they expect external help to solve their problems for them? • Do the producers talk about the proposed PO as their own idea and their own organization, even if it was first suggested by the facilitating agency (FA), or do they talk about it as the FA's initiative and organization? • Are the producers interested in discussing how the PO should be organized, what activities they should undertake, and who should be members, or do such discussions have to be initiated by the FA? • Are the producers willing to invest their own limited resources, including time, assets, and financial contributions, to set up the PO, before any external resources are offered, or do they expect all start-up resources to be provided by the FA?
Initiative	• Have individual or groups of producers already tried to address marketing problems in various ways? • Have the producers already shown initiative and taken steps, even if unsuccessful, to solve their problems or are they passively waiting for the FA to start the process?
Business Orientation	• Do the producers talk about the proposed initiative as a business or commercial activity rather than a means of accessing support more easily? • Do the producers recognize a difference between the proposed PO and other types of community-based organizations which have been set up in the past? • Do at least some of the producers have entrepreneurial skills and experience selling products and dealing with traders? • Do at least some of the producers have production skills and experience of sharing practices with others and accessing production services?
Social capital	• Do the producers already have experience of working together successfully in informal marketing initiatives or in other joint community activities? • Have the producers already shown a commitment to work together by forming an informal organization? • Do the producers who are interested in forming a PO all know each other? • Are they from the same local area/neighborhood?

Source

Penrose-Buckley, C. 2007. *Producer organizations: a guide to developing collective rural enterprises.* Oxford, UK, Oxfam. (also available at: https://beamexchange.org/uploads/filer_public/4c/a6/4ca6150b-562e-4a29-8a5c-8a9ba02240c2/guide_ruralenterprises.pdf).

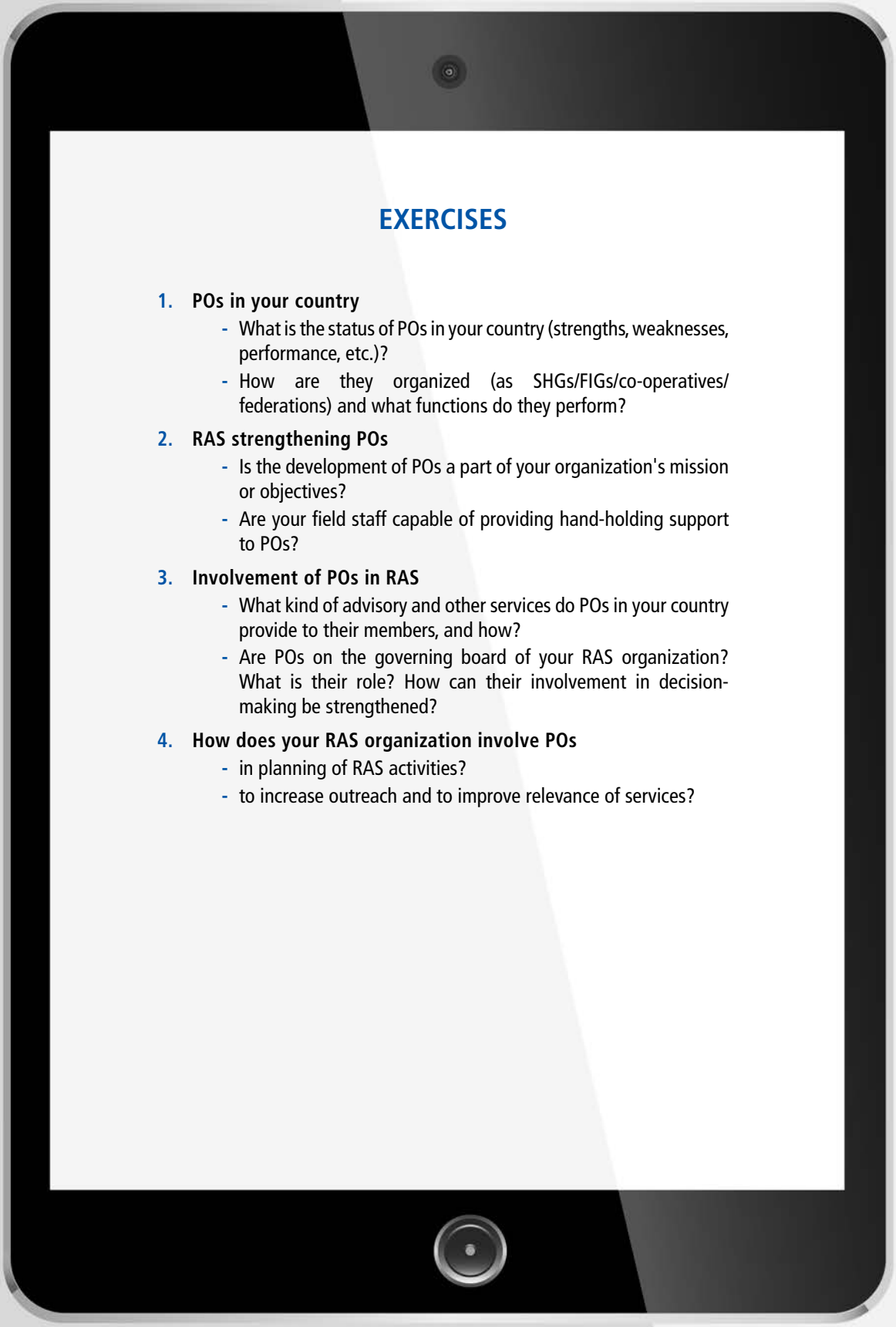
TOOL 8.3: A CHECKLIST TO SUPPORT PRODUCER ORGANIZATIONS

- Are farmer groups needed to link with the identified market? If not, what are the advantages of working in groups (e.g. overcoming high individual transaction costs) compared with the costs that farmers may incur?
- Have alternatives to forming new groups been considered, such as strengthening existing groups, identifying traditional groups or working with lead farmers?
- Does the planned linkage require formal groups with a legal entity or would informal activities suffice?
- What have been the experiences with collective farmer activities? Which type of PO appears to work best?
- What collective activities do the target farmers currently participate in? What have been the experiences with this?
- What discussions have been held with farmers about forming a group or groups? What have been the initial reactions to the idea?
- What is the social structure of the area? Does this lend itself to successful collaborative activities? Is there any danger of domination by an elite?

- Would different types of groups be necessary to ensure homogeneity within a group, such as male or female groups, or groups organized according to roles in the supply chain?
- What size should the groups be? What structure should they have (officers, for decision-making or other)? Is there a possibility of formally associating with other groups? What could be the advantages of this?
- Have bye-laws for the group been developed? Are they fully understood and accepted by all members?
- Are there farmers who demonstrate leadership or management skills? Does the proposed activity justify the group recruiting a full-time manager?
- What training will farmers require in group dynamics?
- What training would group officers require in business management, marketing, accountancy? How will this be provided?
- What legislation exists relating to farmer groups? Is it appropriate to the type of group envisaged?
- Would the group be legally entitled to operate a bank account, if required?

Source

Kahan, D. 2013. *The role of the farm management specialist in extension*. Farm Management Extension Guide, 6. Rome, FAO. (also available at: http://www.fao.org/uploads/media/6-SpecialistInternLores.pdf).



EXERCISES

1. **POs in your country**
   - What is the status of POs in your country (strengths, weaknesses, performance, etc.)?
   - How are they organized (as SHGs/FIGs/co-operatives/ federations) and what functions do they perform?
2. **RAS strengthening POs**
   - Is the development of POs a part of your organization's mission or objectives?
   - Are your field staff capable of providing hand-holding support to POs?
3. **Involvement of POs in RAS**
   - What kind of advisory and other services do POs in your country provide to their members, and how?
   - Are POs on the governing board of your RAS organization? What is their role? How can their involvement in decision-making be strengthened?
4. **How does your RAS organization involve POs**
   - in planning of RAS activities?
   - to increase outreach and to improve relevance of services?

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MODULE 9: Gender-sensitive Rural Advisory Systems and Services

By Blum, M.L., Cofini, F. and Sulaiman, V.R.

OBJECTIVES

1. to examine the importance of gender issues in agriculture;
2. to consider the importance of gender-sensitive rural advisory services; and
3. to appraise options for moving towards gender-sensitive rural advisory services.

INTRODUCTION

Women comprise, on average, 43 percent of the agricultural labour force in developing countries, ranging from 20 percent in Latin America to 50 percent in Eastern Asia and sub-Saharan Africa (FAO, 2014). However, although their contribution to agriculture and food production is significant, empirical evidence on the share produced by women are not available (Raney *et al.*, 2011). This is mainly due to their involvement in a broad range of activities that are crucial for the well-being of rural families, but often not included in official statistics. These activities include all the unpaid family labour, such as growing food crops, tending animals, processing and preparing food, collecting fuel and water, caring for sick persons, or volunteering in the community. (FAO, 2011; Elson, 2000).It is also important to consider the tendency of women to often undervalue their own contribution, which also reinforces the bias in official statistics. A report from Rubin and Manfre (2014) in Honduras found that women, when asked about their agricultural activities, respond "simply helping their husbands' work". Women and men have different roles and responsibilities in agriculture, at the household and community level. Thus the needs and demands of women and men for RAS and other services vary considerably, as often as they are involved in different activities. In consequence, gender-sensitive services can only be delivered by considering the different roles, responsibilities and division of labour between men and women (Wongtschowski *et al.*, 2013). Yet, in reality, these differences are often not taken into account, with adverse consequences not only for women, but for society as a whole and its development.

Though women participate in all activities related to agriculture, they are discriminated against in terms of access to land and other productive resources, information, access to markets and technologies, knowledge and education and/or skills to benefit from opportunities and develop their capacities. In this setting it is very difficult for women to transform or transcend subsistence-level activities to earn enough to escape poverty.

Traditionally agricultural production has been supported by a policy of subsidized inputs, which has benefited large-scale farmers, within an extension system that has been male dominated and male focused, thereby rarely reaching women farmers with new information, knowledge or technology. In addition to these are the deeply rooted social and cultural constraints that women face, which manifest themselves in a number of ways, especially lack of rights over land and property, and lack of access to education and training.

There is now a growing realization that addressing gender inequality and the various barriers that rural women face, will result in increased efficiency and productivity in the agricultural sector, which in turn will contribute to agricultural growth, poverty reduction, better nutrition and food security (World Bank, 2007; Christoplos, 2010; World Bank/FAO/IFAD, 2009; FAO, 2011). As extension remains a significant resource in accessing information, knowledge and technologies for resource-poor farmers (the majority of whom are women), the inclusion of policies, approaches and methodologies that address gender is critical for extension's success (Colverson, 2012).

This module examines the importance of gender in agriculture and Rural Advisory Services (RAS). It argues that agricultural extension and advisory services have to be gender sensitive, and outlines measures and tools for how this can be achieved. It also discusses the gender issues in national RAS policies and programmes and the key changes needed for conceptualizing and operationalizing gender-sensitive agricultural advisory and other services.

DEFINITIONS

Gender

Refers not to women or men per se, but to the relations between them, both perceptual and material. Gender is not determined biologically, because of sexual characteristics of either women or men, but is constructed socially, thus it can change. It is a central organizing principle of societies, often governing the processes of production and reproduction, and consumption and distribution[13].

Gender roles

Are the "social definition" of women and men, and vary among different societies and cultures, classes and ages, and during different periods in history. Gender-specific roles and responsibilities are often conditioned by household structures, accessible resources, specific impacts of the global economy and other locally relevant factors, such as ecological conditions (FAO, 1997). Almost everywhere, gender roles function in ways that discriminates against women: in their choices in life, their access to assets, and the voice and influence they have in making decisions. This discrimination is not only reflected in individual relationships, but it also permeates institutions and hence influences the gender structure of institutions, the career perspectives of women, etc.

Gender analysis

Gender analysis refers to the systematic gathering and analysis of information on gender differences and social relations to identify and understand the different roles, division of labour, resources, constraints, needs, opportunities, and interests of various groups, including men and women, girls and boys, and transgendered person in a given context. It aims to clarify how gender roles and relations create opportunities for, or obstacles to, achieving development objectives (Manfre *et al.*, 2013).

Gender approach

Distinguishes itself from an exclusive focus on women. The approach considers gender roles and relationships and highlights the gender gaps between men and women in terms of employment, earnings, and access to control over and benefits from human and physical assets. It seeks to explain how these gaps affect power relations between women and men—and thus their relative ability to influence decisions within their households and communities[2]. These insights are then used to improve the gender situations. Applying a gender approach in a systematic way results in what is termed "gender mainstreaming".

Gender mainstreaming

is the recognition of gender-based divisions in labour, rights, resources and voice. It is not about adding a woman's component or even a gender equality component into activities or projects. Mainstreaming a gender perspective "is the process of assessing the implications for women and men of any planned action, including legislation, policies or programmes, in any area and at all levels. It is a strategy for making the concerns and experiences of women as well as of men an integral part of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres, so that women and men benefit equally" (ECOSOC, 1997, in: UN, 2002:v). The ultimate goal of a gender mainstreaming strategy is to achieve gender equality.

13 http://www.reachingruralwomen.org/gendermainstream.htm

DISCUSSION

Why gender matters?

The FAO report Women in Agriculture (FAO, 2011) observed that

> *"agriculture is underperforming in many developing countries for a number of reasons. Among these is the fact that women lack the resources and opportunities they need to make the most productive use of their time. Women are farmers, workers and entrepreneurs, but almost everywhere they face more severe constraints than men in accessing productive resources, markets and services. This "gender gap" hinders their productivity and reduces their contributions to the agriculture sector and to the achievement of broader economic and social development goals".*

The report further argues that

> *"reducing gender inequalities in access to productive resources and services could produce an increase in yields on women's farms of between 20 and 30 percent, which could raise agricultural output in developing countries by 2.5 to 4 percent"* (FAO, 2011).

Attention to women's concerns and priorities in development policy and activity has evolved since the early 1970s. The issues were first discussed with a focus on projects designed only for women (women-specific). Gradually, efforts were made to integrate women's concerns into projects without refering to gender equality (women's component and integration). The current perspective is that the attention to women's concerns needs to be gender mainstreamed, and that it requires a thorough re-evaluation of development priorities (UN, 2002 and UNWOMEN, 2014).

Gender mainstreaming is a process that intrinsically needs time as it involves changes in norms and values, cultural styles and normal ways of doing things, traditions and beliefs, people's sense of self and their understanding of others.

Why Agricultural Extension and advisory services have to be Gender Sensitive?

Agricultural growth, a key means of poverty alleviation, relies on improving the productivity of women farmers, since women form the majority of farmers and labourers in many countries (GDPRD, 2010). There is an increasing realization that challenging gender inequality and investing in addressing the barriers that woman face will increase efficiency and productivity in the agricultural sector and thereby contribute towards growth and poverty reduction (World Bank, 2007; Christoplos, 2010; World Bank/FAO/IFAD, 2009).

The realization that agricultural extension and advisory services should be gender-sensitive only came into the agricultural discourse during the early 1980s. It became clear that women play a major role in agriculture, which is an important source of livelihood for them and their families. It was also clear that women and men have different roles and responsibilities in agriculture, thus advisory and other services needs and demands of women and men vary considerably as often they are involved in different activities. Yet, advisors and other staff at different levels are often unaware of these "gender issues". So, the need to develop the capacities of advisers and management through for example training on "gender analysis" and on "gender-sensitive agricultural planning", clearly came out. The gender gap in access to assets, information, markets, credits and other services as well as the fact that women lack access to advisory services as often they are not considered as "legitimate clients' were warned (www.reaching rural women.org).

Agricultural extension and advisory services play an important role in facilitating interaction and learning, sharing of knowledge and information and promoting new technologies and practices among farmers (Christoplos, 2010; GFRAS, 2012). Yet extension provision in developing economies remains low for both women and men, and women tend to make less use than men of extension services (Meinzen-Dick *et al.*, 2010).

A review of selected regions of Ethiopia, India, and Ghana undertaken in 2010 found that the levels of access to agricultural extension varied by region and by type of crop or livestock, but that women's access was regularly less than men's. In Ethiopia, women's access was 20 percent compared with men's at 27 percent; in India, levels were 18 percent of women-headed households and 29 percent of men-headed households; in Ghana, only 2 percent of women-headed households and 12 percent of men-headed households reported receiving extension advice (World Bank and IFPRI, 2010). Though women are engaged in farming, they are the most overlooked clientele (by extension) within rural communities (Swanson and Rajalahti, 2010). It is estimated that globally only 15 percent of extension agents are women and male extension agents frequently target male-dominated farmers groups and focus information and inputs on their needs (World Bank/FAO/IFAD, 2009).

In examining gendered patterns of advisory services, it is important to consider who delivers these services (because female agents may be more likely to reach female farmers, especially in highly sex-segregated societies); who receives the advisory services and information (only males or heads of households, or whether women are recognized as

farmers and clients of the advisory services) and how advisory services are delivered (including individual- or group-based approaches, by conventional extension practices or farmer field schools). Of utmost importance is the issue of whether or not women are recognized as farmers and legitimate clients of the extension services (Meinzen-Dick, Quisumbing and Behrman, 2014).

Deeply rooted in the old mentality is also the perception that if extension services are given to a member of the family (mostly the male head of household), then the information will trickle down to the rest of the household, including female members. However, this is not always the case, as men do not necessarily discuss production decisions with their wives, or share information and knowledge with them (Ragasa, 2014).

Other challenges faced by women farmers for accessing and benefiting from RAS also include criteria to access services (e.g. land ownership and eligibility to obtain credit and ability to invest in inputs), time and mobility constraints, education and literacy limitations and voice and representation issues. Service providers have no lesser challenges in offering gender-sensitive services that respond to women's needs and demands, especially human resources and staffing, lack of individual capacities of RAS providers, methods of delivery that consider gender roles and relations, and relevant content for women farmers and unfavourable organizational culture (Petrics *et al.*, 2015; Ragasa, 2014).

To begin with, it is often difficult for women to attend training events, due to their heavy work load and childcare responsibilities. In addition in a number of cultures, women are not allowed to talk to a male agricultural extension adviser, are prohibited from leaving home alone, or are not permitted to use public transport or drive a motorbike: all prohibitions effectively preventing women from attending training in neighbouring villages or work as a female extension adviser (GIZ, 2013).

Overcoming gender bias would require first a better understanding as to what stands in the way of equitable service provision (Christoplos, 2010).

Gender-sensitive agricultural extension – key shifts required

Initiating gender sensitive agricultural extension would necessitate key shifts in some of the traditional approaches to extension (Table 9.1)

TABLE 9.1: Key shifts required to achieve gender-sensitive agricultural extension

	FROM	TO
Objective	Increasing production and productivity	Improved income and more productive employment opportunities for both genders
	Forming self-help groups (SHGs)	Forming common-activity groups open to both genders
	Distribution of inputs	Development of local capacity for sustained availability of inputs and services
Selection of Interventions	Selection of interventions based on Participatory Rural Appraisal (PRA)	Demand-led and based on analysis of men and women client data, matched with opportunities and availability of complementary support and services
	Centrally designed ideas	Client aspirations carefully analysed with local and external knowledge and support
Approaches	Fixed or uniform	Evolving, diverse and gender-differentiated
Working with	Women	Working in partnership with all actors who could support rural women
Monitoring and Evaluation	Input and Output targets	Behavioural and livelihood changes in men, women, youth and other clients and related organizations
	Subjective evaluations	Objective evaluations on a scientifically validated benchmark data basis, considering gender and wealth
Targeting the Poor	Inclusion by accident	Inclusion by design

Source: CRISP, 2017. adapted by authors.

Such key shifts should be the guiding principles for initiating gender-sensitive agricultural extension reforms. However, to do this, extension has to embrace a learning-based approach.

Approaches employed to address gender issues through RAS

There are several avenues to increase the gender responsiveness of extension and advisory service systems. Here and in the sections below, you find the most common approaches applied:

- target both men and women as clients of RAS, but more emphasis on women is used to close the gender gap;
- promote articulation of women's demands for services, and tailor advisory services to these demands;
- overcome constraints in access to advisory and other services;
- provide linkages to resources, and overcome constraints to access to resources, such as land and capital, tailored to the specific needs of women;
- empower women by promoting and strengthening women's groups, their voice and negotiation power; and
- provide gender-sensitive technological responses, including ICTs.

How to reach both genders

From early 1980s/mid-1990s to the post-2000 period, the efforts of extension and advisory services related to providing RAS have moved from improving the capacities of women involved in agriculture, including farming better, towards also considering the enhancement of women's opportunities for rural employment. So, the clients of RAS must include not only 'farmers', but also different categories of producers as fishers, forest users, pastoralists, and those performing household work; temporary and casual workers, home-based workers (vegetable market vendors, day labourers, artisans, etc.) in the informal sector, food processors, etc. (See www.reachruralwomen.org).

Specific targeting strategies should be put in place to increase women's engagement in RAS, such as avoiding gender-blind or generic ways of defining RAS clients as 'farmers' and excluding criteria such as land ownership, while instead targeting women farmers and taking into account their heterogeneity as they are not a homogenous group. Gender analysis is a useful tool to identify the gender division of labour, the demand for advisory services from men and women, including the crops and the roles associated with men and women, and the ways in which this demand could be satisfied. Women can also be targeted separately, especially if the crop or activity concerned is considered a women's task (e.g. backyard poultry, goat-rearing, and home-garden vegetable cultivation), and particularly in highly-segregated society (Carter and Weigel, 2011).

In order to improve outreach of services and to specifically reach more women producers, it is important also to consider the communication channels – both formal and informal – that women are using. Like men, women share and access information through their social networks, which differ from those of men. Women's main social networks include family members, women's groups, saving and credit associations, women cooperatives, church-related groups, and also maternal- and child-health groups. Taking into consideration the different ways in which men and women access information, and their social networks, is crucial to increase and improve effectiveness. The potential of ICTs in this regard should be explored. (World Bank/IFPRI, 2010; Manfre and Nordehn, 2013).

Promoting articulation of women's demands and tailoring services to these demands

Improving the articulation of women's demands for services is one way of enabling development initiatives to be more focused towards local needs (Collet and Gale, 2009). Women as well as men should be supported in identifying and setting their priorities, and formulating their demands (Blum, 2013). Social norms and assumptions contribute to a poor recognition of the value of women's time and labour, which often undermine demand articulation by women. A study by van Eerdewijk and Danielsen (2015) showed that intra-household gender relations affect the way that objectively identified labour drudgery of women translates into actual demand for and adoption of small-scale mechanization. Yet the study concludes that if gender relations and dynamics (mainly access to and control over resources), as well as values and assumptions, are not taken into account, it is unlikely that there will be an impact on gender relations and women's position.

Learning within groups offers opportunities for women producers to strengthen their articulation and bargaining power with authorities, service providers and policy-makers. (Hagmann *et al.*, 2002). Proactive measures can boost women's effective participation in and leadership of producer organizations (POs) through, for example, setting up quotas for women or involving members' spouses. Organizing seminars for women and facilitated by female extension advisers, talking about problems that women face in their activities, can also be a valuable strategy (Petrics *et al.*, 2015). Overall, women's needs and demands might be much more diverse than men's, related not only to agricultural production, but also to food processing, nutrition and other household tasks, child education, family health, etc. Hence, it is important that multiple services are available, affordable and accessible to women, which can respond to these diverse demands.

Gender-sensitive project design can be used as an entry point for promoting equitable participation of men and women in project activities (Jafry and Sulaiman, 2013). During implementation, it is crucial that needs and demands of both men and women are substantiated and, if required, adapted to changes. Feedback and evaluation of project activities by both women and men are essential for improving project performance and impact.

Overcome constraints in access advisory

Women have many difficulties in accessing advisory services. They are often not recognized as legitimate RAS clients and when they are entitled to receive services they have to face challenges related to their education and literacy limitations, time and mobility constraints.

First, gender-biased selection criteria for accessing or receiving RAS such as land ownership, control over income produced, minimum income and productivity levels, and client literacy, should be avoided. Women indeed often do not meet such requirements and are therefore excluded or rarely selected (Petrics *et al.*, 2015).

Second, RAS interventions should match women's availability in terms of time, and in a location suitable for women's mobility, offering on-site childcare services during training and also taking into consideration women's limited resources and decision-making authority (Petrics *et al.*, 2015; van Eerdewijk and Danielsen, 2015).

Third, in order for women to benefit from RAS, it is important to tailor advice, messages and presentation techniques in training interventions (such as using video, images and plays) and adapt them to local contexts in order to overcome education and illiteracy barriers, which women often face. Using approaches and methods that are more designed for working with women and a low literacy audience is also desirable, such as opting for household methodologies, farmer-to-farmer RAS approaches, radio, etc. (David and Cofini, 2017).

Gender approaches in value chains

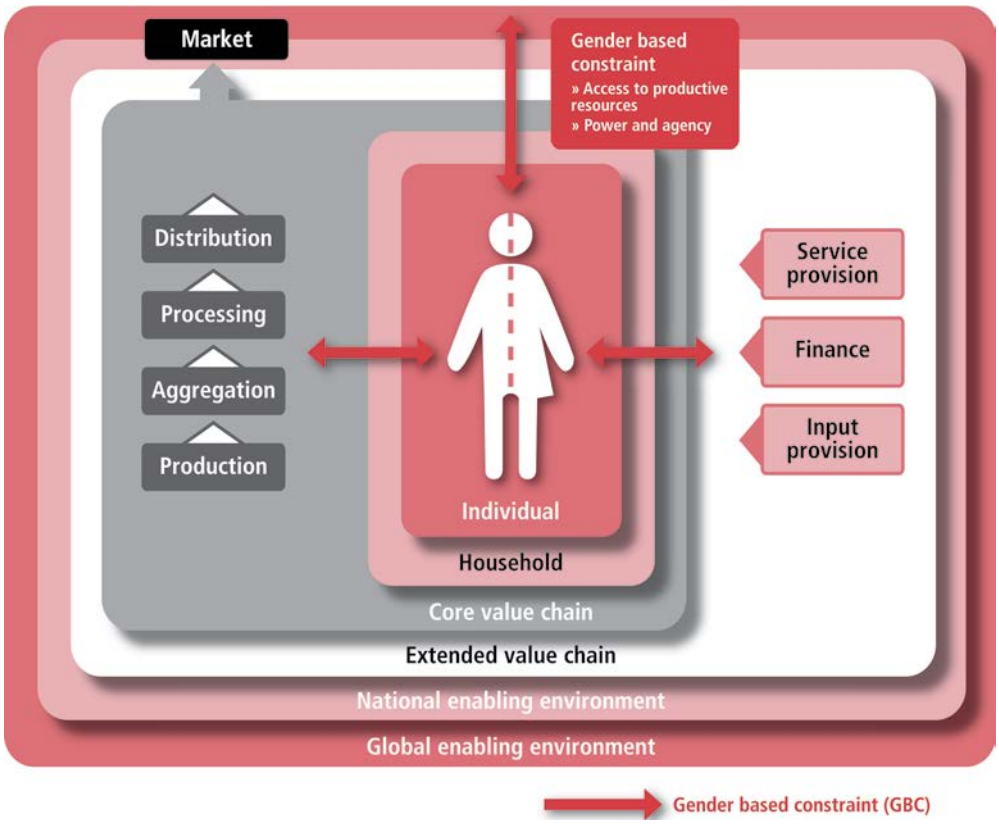
Recent years have witnessed increasing interest in exploring the role of gender in agricultural value chains (FAO, 2016; Cook and Mitchell, 2011; Coles and Mitchell, 2011; Rubin *et al*, 2009). In the past few years, numerous analytical tools have emerged to help practitioners, whether those working with development organizations or with the private sector, to understand and address gender issues in value chains (Rubin and Manfre, 2012).

There are a set of issues that need to be taken into consideration while looking at value chains and gender. Women are involved in agricultural value chains, often with different roles from men's. A study from Malawi on soybeans (Cook *et al.*, 2014) showed that processing activities – including threshing, winnowing and grading – are clearly defined as women's tasks, while marketing activities are more perceived as men's tasks, reflecting men's better mobility and access to means of transportation, such as bicycles. Also women often have to play roles that allow them to be closer to the homestead, while men may freely engage in activities that require them to be away from home, which are often more profitable (Mutua, Njuki and Waithanji, 2014). Women's participation in agricultural value chains and the benefits of this participation are determined by several factors, which are gender-related: at household level, their access and control over productive resources and their influence in decision making, for example, while at value chain level, the power disparities in chain management related to gender and wealth (Coles and Mitchell, 2011).

As Rubin and Manfre (2012) highlight, access to the benefits of value chain participation is reflected not only in the income deriving from value chain activities, but also it is a combination of factors "related to the perception of ownership, the management of a particular commodity, the scheduling of payment, and the point of entry into the chain" (2012:3). Rubin, Manfre and Barrett (2009) studied a maize value chain programme which established farmers' bank accounts registered with men's names. In consequence, women were not allowed to access the account and no longer knew the amount of income received. The programme therefore identified a way to modify the links with the local banks and local cell phone company.

For rural advisory services, it is important that RAS advisers are familiar with the different ways men and women participate in agricultural value chains, and benefit from them. FAO (2016) provides a gender-sensitive value chain framework (Figure 9.1) where value chains are analysed at various levels: core, extended, national, global environment and household and individual levels. The household and individual levels are particularly important because gender inequalities often originate within the household and determine access to productive resources and decision-making power (i.e. how and to what extent household members are involved in a value chain, and who makes decisions and controls benefits of this participation). A sound gender analysis of agricultural value chains at all these levels can help in identifying gender-based constraints, and provide possible entry points for removing these constraints (e.g. promote household methodologies for improving intra-household relationships; provide opportunities for women to access inputs and market information; invest in gender appropriate technology to reduce women's burdens). Gender-based constraints can limit women on both the demand and the supply side, by, for example, hindering their ability to access advisory services, and also the ability of service providers to target and reach women.

FIGURE 9.1: FAO Gender-Sensitive Value Chain Framework



Provide gender-sensitive technical responses and use ICTs in a gender-sensitive way

Technologies, including information and communication technology (ICTs), are neither gender- nor wealth-neutral. Hence, they have to be intentionally designed to meet to the specific needs of women and men. Affordability, suitability and cultural acceptability of technologies are crucial aspects to guide the selection of adequate technological responses (e.g. technologies that reduce women's drudgery and time constraints) (Petrics *et al.*, 2015).

The introduction of ICTs into extension and rural advisory services can be an important turning point in revitalizing the provision of support to women (Dethier and Effenberger, 2012). They can be used for providing information on weather, prices and profitable income diversification possibilities (Chapman and Slaymaker, 2002). Ensuring that the technologies used are appropriate for women, for example in terms of locally relevant content, is crucial. Community knowledge centres and community radio have the potential to reach rural women with relevant content (Sulaiman *et al.*, 2011). Despite much support for the diffusion of ICTs in rural areas, gender disparity in the access to ICT services continues, particularly with modern ICTs (World Bank/FAO/IFAD, 2009; Gillwald, Milek and Stork, 2010). While most of the ICT initiatives are disseminating new information and knowledge useful to rural women, many are not able to make use of it, due to lack of access to complementary sources of support and services (Sulaiman *et al.*, 2011). One example provided by FAO (2015) on how to overcome the barrier of ICTs access, are the Dimitra Listeners clubs, where rural women share their experiences, concerns and discuss solutions found.

Empower women by promoting and strengthening women's groups, their voice and negotiation power

> *"Organizing family farmers into viable, efficient and inclusive rural producer organizations of all kinds, and enhancing their capacities to collectively address the challenges they face, is perhaps one of the most important contributions RAS could make to family farms."*(Sulaiman and Blum, 2015:36)

This holds particularly true for women, given their constraints in voicing demands and having their interests represented. Supporting the organization of women producers into groups and provide training in women only groups, promise to enhance their participation in RAS. Women's group also represent those social networks though which women can better reach RAS and that women can use to articulate their demands (Petrics *et al.*, 2015).

The Mulukanoor Women's Cooperative Dairy Society in India offers an example of collective action and rural women empowerment. In this cooperative, women producers are present at all segments of the value chain and completely manage and govern a community-based enterprise (SFAC, 2013, in Sulaiman and Blum, 2015).

In addition to supporting the organization of women producers, including common interest groups or thrift-and-credit groups, the provision of capital and assistance for enterprise development, and of ergonomically designed farm implements and other inputs, contribute to reducing the gender gap in agriculture and rural extension.

Mainstreaming gender in RAS institutions

If extension and advisory services should be gender-sensitive, RAS institutions, their policies and culture, structures and procedures, should also be made gender-sensitive. This will support provision of services that respect gender differences and promote gender equity. The following are the main issues that should be mainstreamed for addressing gender inequalities within RAS institutions:

- promoting a gender balance in recruitment and promotion of advisory services;
- enable career development for women in RAS;
- organize capacity development programmes for staff on gender issues in RAS and agriculture; and
- encourage a gender-sensitive organization and culture within RAS.

Promote a gender balance in recruitment and promotion of advisory services

In many cultures, it is unacceptable for male extension agents to address women in the village.

> *"In agricultural extension, contribution from female advisory service providers is important, because of their ability to work with both male and female farmers, and their unique role in working with women farmers and inspiring girls to take up agricultural extension as a career"* (AFAAS, 2011:1).

In many rural settings, women are limited by social norms in communicating with men outside their families. In these cases, extension advisers can act as interlocutors, but to truly speak on behalf of women, these interlocutors need to be women (World Bank/FAO/IFAD, 2009). Employing more women as extension advisors, including female para-extension agents, also facilitates working more closely with women groups.

To increase the number of female extension advisors, the enrolment of women in intermediate- and higher-level agricultural education institutions should be promoted, for example, by establishing specific scholarship programmes to encourage women to take on education in agricultural, marketing and other related fields. When women are active and capable extension advisors, they also become role models for their women associates and clients. Women bring diverse points of view to their associations or groups, their communities, development agencies, and parliament representatives. In addition, greater diversity of knowledge and experience contributes to more resilient and suitable technologies, farming, and management practices for more user groups. (World Bank/FAO/IFAD, 2009)

Setting quotas for recruitment of female staff at field, management and other senior levels are also effective measures to increase the number of women working in RAS. An increase in RAS advisers and managers in senior position would also help in changing the biased perception about women's lack of knowledge, skills and leadership in agriculture (Carter and Weigel, 2011).

Career development for women in RAS

To encourage female advisers to continue in RAS, special efforts are needed, for example. in supporting women's career and capacity development. Career development programmes, like mentorship initiatives (e.g. at the work place by senior women colleagues) and capacity strengthening programmes are measures that help in addressing the issue of under-representation of women in leadership positions, and underperformance due to socio-cultural and organizational barriers. Women themselves are supported to be stronger advocates for policies and programmes that benefit women farmers and fellow advisers (AFAAS, 2011). For example, the African Forum for Agricultural Advisory Services (AFAAS) plans to develop a strategy to assist country forums to target female advisors with capacity-development programmes.

Training women in leadership also supports them very effectively in developing their career. The IFAD-funded workshop "Capacity Building for Women's Leadership in Farmer Producer Organizations" brought into the discourse some interesting lessons learned. This includes that enhancing women's leadership skills at individual level is unlikely to have a great impact, if an enabling environment is not supported for women (and men) to exercise their leadership. A wider organizational context needs to be taken into account when designing such training. Last, men need to be taken on board in capacity development for leadership and organizational development skills, so that they can 'support' women leaders and these alternative forms of leadership in which women and men are both engaged (WOCAN, 2011).

Organize capacity development programmes for staff on gender in RAS and agriculture

Gender-sensitive services can be delivered only by taking into consideration the different roles, responsibilities and division of tasks between men and women at household and community level (Wongtschowski *et al.*, 2013). This requires that extension advisers are aware of gender-based differences and are able to use gender-differentiated approaches and tools to analyse and address such differences. While service provision needs to be context-specific and related to demands and needs of farmers, training of RAS staff in gender-differentiated approaches and methodologies are needed in any case to ensure that demand-led processes consider gender (Petrics *et al.*, 2015; World Bank/FAO/IFAD, 2009).

The capacity to work with rural women and use gender-sensitive approaches (see approaches discussed in the previous section) and methodologies (e.g. household methodologies, like IFAD's Gender Action Learning System (GALS), Farmer field schools, etc.) are needed by advisers. This functional capacity is part of the function of the "New Extensionist" (GFRAS, 2012).

Extension advisers should be supported in developing skills and capacities that enable them to analyse context, assess needs, facilitate demand articulation from both men and women producers, and design and deliver gender-sensitive services. These capacities include, for example, how to carry out a gender analysis to identify the gendered division of labour, and how to map the stakeholders in a given context though a gender-sensitive stakeholder's analysis (Manfre *et al.* 2013; Doss, 2013; Petrics *et al.*, 2015).

Advisers need to facilitate the articulation of demands from both men and women producers. This requires a set of new skills such as facilitation, problem solving, and creative thinking, as well as capacity to create and strengthen social capital in mixed- and single-sex groups, on how to engage in participatory development and active learning. Finally, the ability to work in interdisciplinary teams is also required given the complexity of problems to be addressed (Petrics *et al.*, 2015).

Gender-sensitive organization and culture of RAS

Many RAS organizations, whether public, private, NGO or PO providers, are increasingly committing themselves to provide gender-sensitive RAS. This implies that the same gender principles and good practices are to be mainstreamed in the RAS institutions, their policy, organizational operations and culture. However, evidence shows that worldwide only about 15 percent of extension advisers are women (FAO, 2011; Gilles, 2015). A low number of female extension advisers and non-equitable working conditions are in fact clear indicators revealing an organizational culture that neglects or disfavours women.

Policy, procedures, guidelines and terms of references are crucial instruments through which to mainstream gender equality in organizations. The organizational culture is about norms, beliefs, and ways people deal with one another, which together affect how an organization also operates in terms of how policies are implemented, etc. A gender-sensitive organizational culture is reflected in a maternity and paternity leave policy, flexible work arrangements as well as in less formal ways such as how management shows equal respect for both genders, language used (e.g. jokes), etc.

Creating a gender-sensitive organizational culture includes an increase in the number of female RAS advisors and addresses some of the professional barriers women face in the their working environment (e.g. sexual harassment or physical insecurity in some locations, or cultural restrictions that limit women's mobility and interactions with men) including also the provision of child care arrangements such as the availability of dedicated space for breastfeeding in order to ensure gender adequate working conditions.

CARE in Ethiopia provided a number of incentives, such as higher salaries and good housing, to encouraging women. Yet, despite this, it still had difficulties recruiting women officers (Farnworth, 2011). Changing the organizational culture of an institution is a long-term process that requires sustained attention and commitment. The example from CARE clearly shows that none of the incentives used can bring about true change on their own, if not embedded in a wider framework that sustains broad support over a longer period.

Gender-sensitive monitoring and budgeting in RAS

Conventional monitoring and evaluation (M&E) systems often do not capture gender differences in access to and impact of RAS. Having gender-neutral M&E, including the use of gender-neutral language, often ends up reflecting men's priorities (Baruah, 2012). Moreover, existing monitoring is often linked to projects, but not mainstreamed in RAS services and systems. Reliable baseline data are needed, but they are often scarce or incomplete in many countries. This holds particularly true for gendered baseline data. Both quantitative and qualitative data and indicators on access to and control of services should be collected and analysed in a sex-disaggregated manner (Mbo'o-Tchouawou and Colverson, 2014). This represents a challenge at both system and service level.

At service level, gender-sensitive M&E is essential to effectively assess whether the measures taken have an impact on women and men, and on gender relations or not. It will allow continuous adjustment and guide future interventions to reduce gender inequalities. Gender-differentiated M&E should be used within organizations as a management tool for evidence-based decision-making. For example a gender sensitive monitoring system may track the number of female extension advisers hired and monitor how many were retained over time, or records the participation of men and women at different levels of decision-making. Organizations need also to establish an M&E system to allow the collection and the analysis of sex-disaggregated data on RAS provision, their programmes and outcomes, in order to provide evidence on the impact of gender-sensitive RAS and to learn for future interventions.

At system level, given the pluralistic nature of agriculture innovation systems and of service provision, joint efforts of all the actors (public and private RAS providers, POs, government, etc.) are required. This entails clearly-defined responsibilities for data collection and analysis, joint interpretation of information, and collective decision-making on future action required. The M&E system should not only assess whether the system has been gender sensitive, but also whether it has been responsive, identifying where gender norms, roles and inequalities have been considered, and measures have been taken to actively address them (WHO, 2009; Wongtschowski, Oonk and Mur, 2016).

Along with a gender-sensitive M&E system, gender-responsive budgeting is required. This would enable governments and organizations to allocate resources efficiently by gender and to analyse the gender-differentiated impact of expenditures and of overall policies.

Case Studies

CASE 9.1: CAPACITIES OF WOMEN ADVISERS IN AFRICA

The following two programmes were initiated in Africa to develop the capacities of women extension advisors.

I. African Women Leaders in Agriculture and Environment (AWLAE) programme

Implementer: **Winrock international**

Donors: **USAID and others**

Goal: Increased participation and leadership of African women at all levels of agricultural and environmental activities, including production, extension, research, agricultural university teaching, and policy-making.

Approach: Institutional change; human capacity development for women and men; linkages with rural women.

Strategic interventions:

- scholarships to women for advanced degree training and leadership training;
- documentation of the status and issues of professional women;
- engagement with policy-makers for policy advocacy;
- gender sensitization and training for women and men to address gender issues;
- gender reviews of policies, programmes and curricula;
- building gender-sensitive male role models for gender advocacy;
- creation of professional women's associations; and
- linking professional women to women farmers.

Impact:

The 1995 USAID evaluation report on the programme noted that 'this is no longer a program, it's a movement' (quoted by Winrock International Institute for Agricultural Development, 2000). Success of the programme model resulted in being able to attract funding from a wide range of donors through unsolicited proposals, its replication in China, and proposals to take it to Nepal, Viet Nam and Latin America. Evaluation of the programme revealed that 82 percent of the alumni were promoted to higher positions; while 87 percent reported increases in their salary and responsibilities. In 2006, the programme transformed itself into an international organization, AWLAE-Net, with membership of professional women's associations in 10 countries – Benin, Côte d'Ivoire, Ethiopia, Ghana, Kenya, Mali, Nigeria, Senegal, Tanzania and Uganda (Winrock International Institute for Agricultural Development, 2000).

II. Strengthening agricultural technical training using a gender lens in Sudan

Donor: FAO-supported project at Shambat College of Agricultural Studies, Khartoum Polytechnic

Long-term project objectives:

- To produce an adequate number of well-prepared female and male rural extension advisers with the desire and ability to transfer information and skills needed to improve agricultural productivity.
- To improve the quality of life of rural families by recognizing the economic importance of rural women in the traditional agricultural sector and offering opportunities for increasing their effective participation.

Interventions:

- The underlining philosophy was hands-on-capacity development and consideration of gender perspectives in all undertakings.
- The project provided policy guidance, managerial counseling in information management, academic support for all technical sectors, awareness creation on gender roles, procurement of materials for the upgrading of physical facilities, skills training for administrative and technical staff, and introduced audio-visual material production and communication tools for teaching methods in various subjects.

Impact:

Increased numbers of female staff, students, leaders, managers and entrepreneurs in the agricultural-sector workforce. Continued interest in the project's national capacity-development approach even after termination of external funding. The college is now recognized as a gender responsive, collaborative organization.

Lessons learned

A critical analysis revealed in all the cases that two key factor contributed to success:

- donors willing to commit adequate financial and human resources over a long period; and
- availability of committed people or champions, in most cases women, within the targeted organizations who were willing and qualified to spearhead the initiatives.

However, one key challenge is that women's capacity-development programmes have not yet attracted significant resources from African governments. Hence, to promote sustainable initiatives that are strategically taking advantage of the positive policy environment will need the incorporation of innovative interventions aimed at mobilizing local commitment and support. Therefore, one of the core cross-cutting strategies should be intensive lobbying and advocacy efforts aimed at ensuring that African nations respect their policy commitments to gender equity by committing resources. This avoids dependence on external donor support, which is unsustainable.

Sources

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CASE 9.2: WOMEN-CENTRIC VALUE CHAIN DEVELOPMENT IN BANGLADESH

The Microfinance and Technical Support Project (MTFSP) is an IFAD-supported project in Bangladesh. This project started in 2004 to improved livelihoods and food security of moderately poor and very poor households and the empowerment of women, through the promotion of sustainable income-generating activities and livestock technologies.

Under the MFTSP, IFAD has supported the development of women-centred value chains at the village level. In the MFTSP approach for the poultry value chain, the activities of a single woman in backyard poultry production are disaggregated into a set of clearly distinguishable activities which are then carried out by a number of women. Occupations are created for each activity and specialized training delivered to each of the actors: model poultry breeders, mini hatchery owners, chicken rearers and poultry keepers. Value has been added through (a) commercializing the transactions between each node, and (b) improving the genetic material, thus raising overall income levels for each actor.

In this way, a female income stream has been generated for the household. This raises overall household income in households where every Taka (basic unit of Bangladesh currency) counts. Consensus exists that although social norms dictate that men are responsible for supporting the family economically, poverty levels have meant that women are frequently seen as a burden – literally an extra mouth to feed. Assisting women to earn monies has brought about more equitable roles and relations in the household, recognition of women's contribution to the household economy, and generally an important increase in the status of women, both within the household and indeed within the village. Apart from the final interface with the market, the transactor between value chain actors is female. Mini-hatchery owners buy fertile eggs from other project participants who run small parent farms in confined production conditions. The parent lines are Fayoumi females and Rhode Island Red males. After hatching, the mini-hatchery sells day-old Sonali chicks to chick rearing units. After 8 weeks the chick rearers sell the young birds to another category of project participants, poultry keepers, who keep poultry for egg production and for sale to the market.

The MFTSP has been successful in targeting women because it has created a value chain that is geographically limited. It trains women to be specialized actors at well-defined nodes in the chain, and adds value by upgrading and managing gene flow. The level of technology is appropriate for women. The mini-hatcheries are easy to build and manage, and yet are sophisticated in design. Further success factors include the fact that the project specifically set out to reach women and the most poor, and it has benefited from committed staff both within government departments, and in the implementing organizations.

Source

Farnworth, C.R. 2011. Gender-Aware Value Chain Development, Paper prepared for Expert Group Meeting "Enabling rural women's economic empowerment: institutions, opportunities and participation". UN Women/FAO/IFAD/WFP, Accra, Ghana 20–23 September 2011. (also available at: http://www.un.org/womenwatch/daw/csw/csw56/egm/Farnworth-EP-1-EGM-RW-Sep-2011.pdf).

SUMMARY

Given the recognition of the critical link between the improved capacity of women as agricultural producers and a reduction in rural poverty and food insecurity, specific actions to increase women's access to and benefit from advisory services should be taken into account when designing and implementing national agricultural and rural development policies. National governments and the donor community need to find, as matter of urgency, ways to redesign rural development programmes with specific attention to gender in general and to the needs and the demands of women farmers in particular.

Women are a key asset in agricultural and rural development worldwide. Agricultural and rural advisory services are one important way to tackle the hurdles that women face as farmers, food processors, traders, household and community members. Closing the gender gap in productivity and access to resources and services implies multiple efforts from different stakeholders. The module provided several inputs on how RAS, if designed and implemented in a gender-sensitive way, can effectively reduce this gap and positively contribute to livelihoods and well¬being of rural households.

Women producers face daily challenges in accessing and benefiting from rural advisory services. These challenges include:

- the perception bias that women are not farmers thus not legitimate clients of RAS;
- the old assumption that advice trickles down to the rest of the family members so there is no need to target women as such;
- restrictive criteria to access RAS (e.g. land ownership); alongside
- time and mobility constraints, education and literacy limitations and limited voice and representation.
- Service providers also face challenges with gender-sensitive RAS, including:
- human resources and gender-balanced staffing;
- lack of capacities of individual advisers regarding gender;
- methods and approaches insufficiently designed for working with women; and
- not offering relevant content that respond to women's demands in the very wide range of activities.

This module presents several approaches that can increase the gender responsiveness of agricultural and rural advisory services and systems. A proper gender analysis is crucial, one capable of capturing the diversity of roles and relationships of women and men as well as the diversity of needs and demands among women. It also helps to tailor approaches and methods to make services relevant to their clients' needs and demands. Non-restrictive criteria need to be in place in order to avoid excluding women from access to advisory services. The services should be adjusted

to respond to women's needs in terms of venue, time and duration. Advice and presentation techniques need to be adapted to local context in order to address education and illiteracy barriers.

Women as well as men producers need to be supported in identifying and setting their priorities, formulating and negotiating their demands. Empowerment of women should also be encouraged by promoting and strengthening women's groups, their voice and negotiation power. Finally, gender-sensitive technology responses, including ICTs, should be designed according to the specific needs and constraints of women and men, taking into account the affordability, suitability and cultural acceptability of those technologies.

Service providers, from their side, should work on engendering their policies and culture, structures and procedures, in order to provide gender-sensitive RAS. Establishing a gender balance in the human resources of advisory services is crucial, as well as supporting and encouraging women in their career once recruited. Setting a quota can increase the number of female staff at all levels, while mentorship programmes and capacity strengthening enable and empower women to thrive in their career. Women's advancement to management in organizations should be supported as it also contributes to engender the organizational culture and create a gender-sensitive working environment.

Human capacity development is crucial to enable extension advisers to analyse context, assess needs, and design and deliver gender-sensitive services. Advisers are also asked to facilitate demand articulation from both men and women producers and link them with various stakeholders who offer different sets of skills which can respond to their demand.

The establishment of M&E systems able to assess the impact in a gender-differentiated way at system and service level is crucial for decision-making. M&E needs to be participatory for learning and accountability purposes.

A national commitment to gender equality and gender-sensitive design and implementation of national agricultural and rural development policies will help in creating a conducive environment for gender equality in RAS organization and in providing gender-sensitive RAS.

Women need a broader set of actions, support and services beyond the technical information provided by the different providers. Provision of technical, managerial, organizational and entrepreneurial support is possible only through collaboration and partnerships among a wide range of organizations, and there is a desperate need for integration, coordination and convergence of efforts by different stakeholders at all levels.

Tools

TOOL 9.1: GUIDELINES FOR CONDUCTING GENDER ANALYSIS

- gain an understanding of gender relations, the division of labour between men and women (who does what work), and who has access to, and control over, resources;
- include domestic (reproductive) and community work in the work profile;
- recognize the ways women and men work and contribute to the economy, their family and society;
- use participatory processes and include a wide range of female and male stakeholders at the governmental level and from civil society, including women's organizations and gender equality experts;
- identify barriers to women's participation and productivity (social, economic, legal, political, cultural...);
- gain an understanding of women's practical needs and strategic interests, and identify opportunities to support both;
- consider the differential impact of the initiative on men and women, and identify consequences to be addressed;
- establish baseline data, ensure sex-disaggregated data, set measurable targets and identify expected results and indicators; and
- outline the expected risks (including backlash) and develop strategies to minimize these risks.

Source

CIDA [Canadian International Development Agency]. 2010. *Gender Equality: Policy and Tools.* Quebec, Canada. (also available at: http://www.publications.gc.ca/site/eng/369848/publication.html).

TOOL 9.2: SIX W'S

The following are key issues to be considered when integrating attention to gender issues with a group of stakeholders (RAS clients and beneficiaries):

1. **Who is present or who is not present?** For example – when entering a meeting for the first time – are there both men and women present? Are they of different ages? Different socio-cultural backgrounds? You can't have a successful agricultural innovation if part of the target population is missing.
2. **Who does what?** Men and women, boys and girls have different 'gender roles' based on multiple factors including culture, age, religion, caste, etc. It is important to capacity to identify who is doing what in agricultural systems. Women frequently have greater time constraints given their multiple roles, and this can affect the types of technologies they select, or the times they are available for meetings. In some instances, men have access to and control over agricultural resources that women do not have, which affects who has the ability to use, or even have access to, a technology.
3. **What are they doing?** Are men involved primarily in the agricultural production while women do all the processing? Are the men or women primarily responsible for childcare? Determining what they are doing will help in designing appropriate technologies or interventions tailored to the needs and wants of men and women.
4. **When are they doing it?** Men and women are responsible for different activities that occur at different times of the day or year. If you are planning a workshop in the morning, women might not be able to attend if they have household responsibilities that conflict with the meeting time.
5. **Where are they doing it?** (e.g., farm, field, community or house). For example, in many communities men are more often responsible for marketing agricultural products off the farm, and women more likely to market smaller agricultural products from the home to accommodate watching children or other domestic responsibilities.
6. **Why are they doing or not doing it?** When collecting the above information it is important to ask this question to understand some of the underlying reasons that men and women can or cannot participate in extension activities. To accommodate all stakeholders in a participatory manner, and have programmes that achieve sustainable impact, you need to understand the gender-based constraints and opportunities faced by male and female farmers.

Source

Colverson, K.E. 2015. Integrating Gender into Rural Advisory Services. GFRAS Good Practice Note 4. Lindau, Switzerland, GFRAS. (also available at: www.g-fras.org/en/download.html?download=345:ggp-note-4-integrating-gender-into-rural-advisory-services).

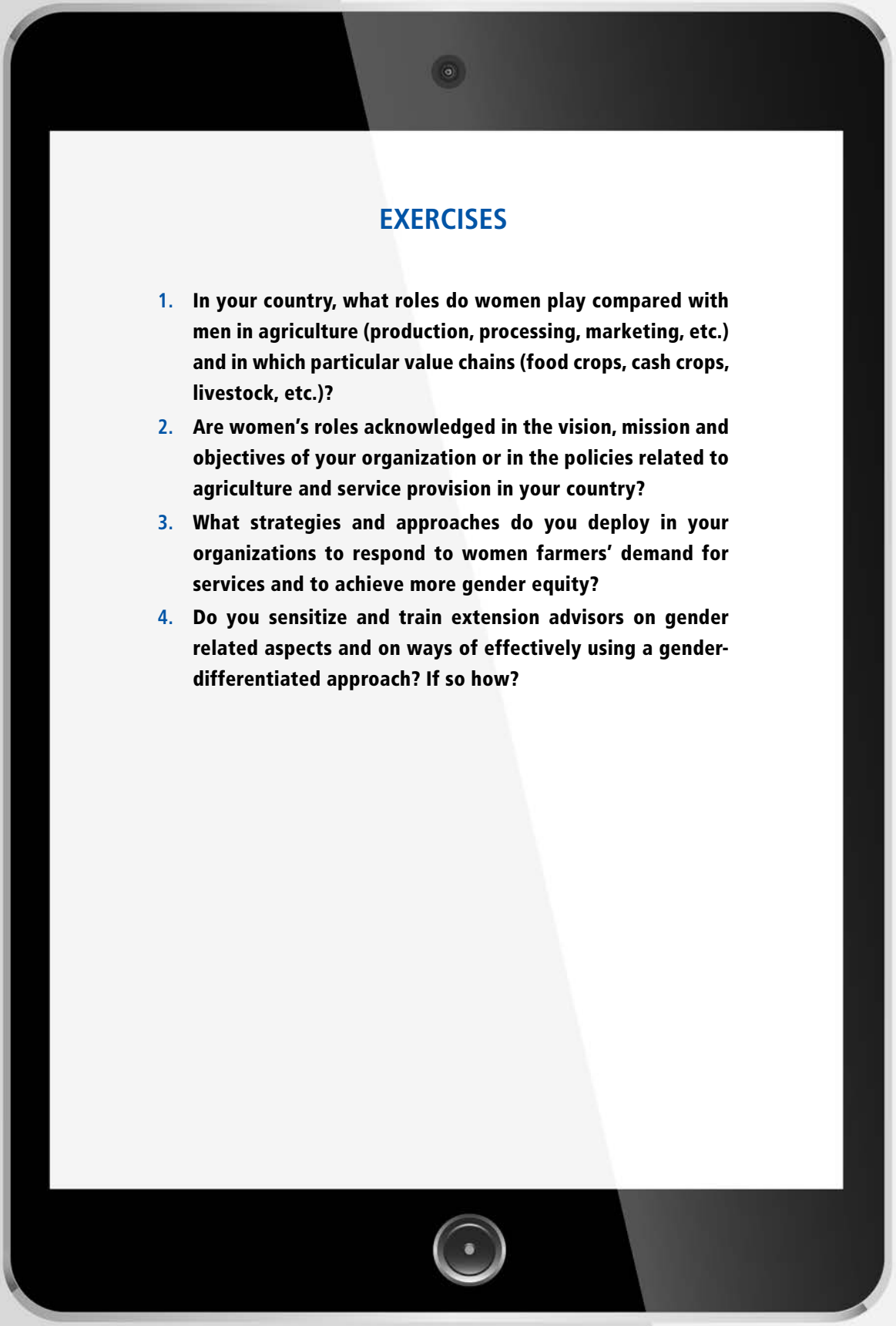
TOOL 9.3: UNDERSTANDING GENDER EQUALITY IN ORGANIZATIONS - A TOOL FOR ASSESSMENT AND ACTION

Gender training is not enough to promote gender sensitivity and equality within organizations and development programmes. Training is often a one-off event and sometimes, it is neither linked to organizational procedures and tools, nor geared to practical skill development. The following are a number factors which have an impact on organizational culture, which also draw directly from the social and cultural context. The original source contains several strategic areas for institutional development to promote gender equality, such as organizational structure and mandate; gender equality policy and programmes, projects, activities and procedures; personnel management practices; and organizational culture, among others.

- Does the organisation have strategies for dealing with opposition and resistance to gender equality policy and programmes? Some possible strategies are:
  - harnessing political support and forming alliances within the organization and country, and externally, to address resistance;
  - ensuring that the mandate for gender equality in policy and programmes is clear, and that it draws on a commitment to human rights, on women's and men's voices and experiences, and on sound and accurate gender analysis;
  - using informal and formal leaders as role models for gender-sensitive practice;
  - engaging in discussion and debate within the organisation on gender issues, to provide people with informal opportunities for learning and exposure to diverse views; and
  - reinforcing the implications of policy, ensuring that it is seen as mandatory rather than optional, and stressing accountability for implementing gender-sensitive policies.
- The empowerment of women within organizations is critical for changing male-dominated cultures.
- Strength, commitment and credibility of gender focal points and senior management is also crucial for changing organizational culture.

Source

Hunt, J. 2000. Understanding gender equality in organizations: A tool for assessment and action. *Development Bulletin* 51:73-76. (also available at: http://www.inclusivewash.org.au/LiteratureRetrieve.aspx?ID=68102).



EXERCISES

1. **In your country, what roles do women play compared with men in agriculture (production, processing, marketing, etc.) and in which particular value chains (food crops, cash crops, livestock, etc.)?**
2. **Are women's roles acknowledged in the vision, mission and objectives of your organization or in the policies related to agriculture and service provision in your country?**
3. **What strategies and approaches do you deploy in your organizations to respond to women farmers' demand for services and to achieve more gender equity?**
4. **Do you sensitize and train extension advisors on gender related aspects and on ways of effectively using a gender-differentiated approach? If so how?**

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MODULE 10: Extension and advisory approaches and methods

By David, S. and Cofini, F.

OBJECTIVES

1. to describe the major extension and advisory approaches, methods and philosophies and identify principles that guide advisory methods in pluralistic, demand-driven rural advisory services (RAS) systems;
2. to discuss factors contributing to the success of advisory methods and highlight key challenges faced in implementing them;
3. to discuss the importance of matching advisory methods with advisory objectives and identify factors that need to be considered when selecting advisory methods; and
4. to outline a systematic process for selecting advisory methods.

INTRODUCTION

The shift toward demand-driven rural advisory systems broadens the mandate of rural advisory services (RAS) to respond to demand expressed by producers in the farming, livestock and fisheries sectors, resulting in a broad range of support and services being provided by RAS including:

- facilitating access to information, knowledge, skills and technologies along the entire value chain;
- supporting innovation, that is, mastering and implementing the design and production of products (including technologies), processes and forms of organizations that are new to those involved;
- facilitating behaviour and attitude change;
- facilitating producers to express their needs and demands to advisory and other service providers, and make informed choices;
- assisting producers to organize themselves into groups or producer organizations (POs) for the purpose of achieving development outcomes; and
- facilitating producers to establish linkages with markets and other rural actors and service providers such as entrepreneurs, financial institutions, research institutes, meteorological services and private firms.

Meeting these multiple, diverse advisory objectives while also seeking to reach scale requires extension advisers and their organizations to be familiar with, and skilled in, using an array of approaches and methods, just as a carpenter needs to be well versed in using different tools. Following a description of the major RAS methods and how they are shaped by various extension philosophies, the discussion examines what factors contribute to the successful implementation of advisory methods and common challenges RAS face in implementing them. The next section examines what should be considered in selecting methods and outlines a process to help extension advisors and programme planners make systematic decisions about which advisory methods to use.

DEFINITIONS

Advisory philosophies

The underlying philosophy or theory about rural advisory service provision may be associated with specific advisory approaches and methods.

Advisory approaches

A style of action embodying an extension philosophy which determines the direction and nature/style of various aspects (structure, leadership, methods, techniques, resources and linkages) related to how extension and advisory services are provided (Axinn, 1988). Some approaches include participatory approaches, farmer-to-farmer approaches, top-down or bottom-up approaches, the Training and Visit (T&V) approach and group-based approaches.

Advisory methods

Advisory methods are systematically applied procedures and techniques used to provide advice and services to producers and to facilitate learning.

Tools

Tools are techniques or types of "hardware" or instruments that support the implementation of advisory methods. Advisory tools include information and communication technologies (ICTs), printed materials (e.g. posters, brochure, calendars), folk media (e.g. drama, puppet shows, songs, proverbs) and games, among others. In the context of RAS, ICTs such as mobile phones, video, television and radio are seen as tools used to implement specific advisory methods.

DISCUSSION

Extension and advisory methods in the context of demand-driven RAS

A variety of advisory methods exist and new ones are always being developed. Box 10.1 describes the most widely used methods. Tools such as printed materials (e.g. brochures, leaflets, posters, comics), social media, games, and folk media (e.g. puppet shows, songs, theater) are often used to support and complement the implementation of advisory methods. Market oriented RAS relies strongly on ICTs (radio, mobile phones and internet) (see the section on ICTs in Module 4), specialized training approaches such as farmer business schools (FAO, 2011), Management Advice for Family Farms (MAFF) and approaches to strengthen producer organizations and groups such as Farmbook (CRS, 2014).

BOX 10.1: Commonly used advisory approaches and methods

Demonstrations: involves showing a technique/skill, input, practice or technology and its potential benefits to a target audience (Nafziger, 1984; Hancock, 1997; Richardson, 2003; Helvetas, 2015).

Fairs, shows, rallies: public events that showcase and create awareness about agricultural technologies and innovations and obtain feedback from farmers. Fairs and shows tend to last longer than rallies (a few days to weeks) and are organized around stands or exhibits (Ifenkwe, 2012).

Farmer field schools (FFS): a participatory group-based approach that focuses on farmer empowerment through building their capacity to make well informed decisions about the topic concerned based on improved knowledge and understanding of biological processes, the agro-ecology and wider context in which they live. Field schools also seek to strengthen social capital and social skills (Braun *et al.*, 2006; Groeneweg *et al.*, 2006; FAO and WFP, 2007; Waddington and White, 2014).

Farmer-to-farmer approaches: participatory approaches involving farmers themselves as agricultural advisors working with extension organizations, usually as volunteers (Wellard *et al.*, 2013; Simpson *et al.*, 2015).

Mobile extension (Mextension): The use of mobile phones to provide information and advice through several means such as tele-centers, e-kiosks, text messages, Interactive Voice Response (IVR) (a system that allows a computer-provided messages over the phone using voice and tone input), apps or for direct communication between producers and rural advisors (Barrantes and Aguero, 2014; Sarvanan and Suchiradipta, 2015).

Plant clinics: an approach that involves farmers consulting a plant "doctor" (an extension advisor or agronomist) about plant health problems (Remco *et al.*, 2015).

Radio or television programs: Both forms of mass media can be used as a one-way or two way communication channels to broadcast advisory service content using different formats such as campaigns, on-farm interviews, drama (soap operas) and live talk shows (Bentley, *et al.*, 2007; Farm Radio International, 2011).

Radio listening groups/video watching clubs: Structured groups organized to listen to radio programs or watch instructional videos for the purpose of learning (Farm Radio International, 2014; FAO, 2015).

BOX 10.1: Commonly used advisory approaches and methods (cont.)

Rural resource or training centers: a physical location set up to improve farmers' access to technologies, knowledge and training and promote farmer innovation, interactive learning and networking. Centers typically have demonstration and research plots, nurseries, a training hall, a small library, office space and sometimes accommodation for visiting farmers (Bicksler *et al.*, 2014; CTA, 2015).

Training and visit (T&V): a structured approach for extension agents to carry out regular visits and training sessions with contact farmers or groups on specific agricultural practices and recommendations (Benor, Harrison and Baxtor, 1984).

Village-based self employed agents: self-employed people provide information and advice for a fee, in some cases using mobile phones and a variety of e-tools (Van Campenhout, 2013).

Workshops and courses: Structured learning events led by a facilitator or trainer (Bentley *et al.*, 2007).

Source: Bentley *et al.*, 2007.

Extension and advisory approaches and methods are influenced by both global trends, new institutional arrangements for RAS and RAS philosophies. At the global level, the spread of digital technologies starting in the 1990s and the greater concern to address gender equality and diversity issues, have strongly influenced advisory methods. With the spread of mobile phones and the internet to even remote parts of the world, ICTs now constitute a central component of many advisory methods. Advisory approaches and methods have become more sensitive to gender, age and other socio-economic differences between producers and some methods such as Household Methodologies (IFAD, 2014) and junior farmer life schools are specifically designed to cater to the needs of youth and bring about greater gender and social equality.

Understanding how development trends, innovations, etc. shape the role of rural advisors and the methods they use, provides useful insights. Over the decades, major philosophies emerged and influenced extension and advisory services. Three key approaches can be identified: technology transfer, participatory and non-formal education, and advisory approaches (Table 10.1).

TABLE 10.1: Key extension and advisory approaches

	TECHNOLOGY TRANSFER	PARTICIPATORY AND NON-FORMAL EDUCATION	ADVISORY APPROACHES
Assumptions	Technological solutions are paramount; Technical specialists play the key role in developing technologies which are then passed on to extension for transmission to farmers	Farmers' local knowledge is valuable; all aspects of development should be determined by farmers ' diverse needs and priorities	Farmers need to assess their own specific situations and chose from a basket of options (i.e. technologies, services, etc.) about what works for them
Role of extension/ advisory services	Information provider and educator, typically focusing on recommending technological packages	Facilitate learning, problem solving, critical thinking and play a catalytic role	Facilitate access to information, knowledge and expertise and providing advice, act as the main broker in promoting innovation, play a "bridging" function by facilitating networks and interaction between actors

These paradigms reflect changes, starting from the emphasis on technologies and productivity issues characteristic of the early days of extension, through the Green Revolution and farming systems approaches, to the current focus on pluralistic, market-oriented and demand-led service provision within the context of agricultural innovation systems (AIS). While the three approaches are not mutually exclusive (all three may be used at different times by service providers), the role of advisory services and advisors differs. For example, under the technology transfer approach, advisors typically play a top down, instructive role, relying mainly on one-way extension methods such as demonstrations, provision of pre-defined inputs packages, radio programmes and rural resource centres. By contrast, the role of advisors in the other two approaches is more facilitative, emphasizing farmers' knowledge and experience and involving them as co-learners. Advisory methods associated with the participatory and advisory approaches are characterized by two-way communication and participation through approaches such as participatory demonstrations, farmer field schools, and study circles. In both the participatory and advisory approaches, advisors are important as catalyzers of change and innovation and play a "bridging" function by facilitating interaction between actors. Group-based advisory approaches, such as radio listening groups (e.g. Dimitra clubs) and ICT-centred approaches that link producer groups with services and market actors (e.g Farmbook, an app used by advisors to help producers plan their businesses, and assess productivity and profitability of their farming enterprise) (CRS, 2014) are important in promoting innovation and facilitating linkages.

Factors contributing to success of advisory methods, and common challenges

Despite differences in RAS approaches, advisory methods should be guided by common principles to best address producers' needs in the context of a demand-driven RAS system.

These principles include:

- encouraging clients' participation at all stages of implementation;
- strengthening their capacity to demand services;
- acknowledging the value of local knowledge;
- offering clients options that meet their needs and demands;
- encouraging and enabling them to make their own decisions; and
- addressing the needs, demands and interests of different categories of producers, processors and "agri-preneurs", such as women, youth, minorities, etc..

Common factors that contribute to success in implementing advisory methods include:

- facilitators or advisors have good technical knowledge, advisory and facilitation skills: advisors are the central actors in RAS and therefore need to have strong capacities in technical and "soft" skills;
- good supervision and support of advisors: supervision provides the support needed for effective implementation and ensures quality control;
- continuous updating of technical knowledge: ensuring that producers receive the most up-to-date technical information relevant for their circumstances and conditions is critical;
- networking and partnerships: partnerships between RAS organizations and relevant institutions such as research institutes, private companies, meteorological services, market information systems, financial services and radio stations are critical for the effective application of advisory methods and to ensure that the technical content is relevant and up-to-date. partnerships are often needed for financing and going to scale; and
- good planning and organization: without good planning and organization, most methods would be ineffective.

Most advisory methods share the following challenges:

- avoiding top down approaches and one-way communication, which have limited client involvement and do not take client needs, demands and interests into consideration;
- updating knowledge continuously and making it relevant to different categories of clients;
- avoiding dependency among clients by giving inputs, allowances, etc;
- ensuring that the content of a programme is not biased toward the interests of implementers or sponsors; and
- moving from pilot level implementation to larger scale.

At the systems level, pluralistic service provision may give rise to conflicts between approaches used by different providers. A situation where in a given country or region some organizations use participatory approaches while others emphasize more instructive approaches, is an example of inter-organizational differences in extension and advisory methods.

The conditions necessary for the effectiveness of ICT-based advisory methods and related challenges deserve special mention. ICT-based approaches require infrastructure, notably electricity, mobile phone networks and internet connectivity that reach remote areas and, in the case of TV, radio and video, radio and television coverage and the availability of the relevant equipment. To reach the majority of producers, services need to be at an affordable cost and accessible. Studies have shown that women and the poor often do not have access to digital services and experience more difficulty using ICTs due to higher levels of technological and language illiteracy (Manfre, 2011). Advisors too require capacities to use ICTs to carry out their work. A study in five Southern African countries found that even after being trained on how to use the internet-based Farmbook app, less educated, older and women field advisors experienced greater challenges with using the tool compared to their more educated, young, male colleagues (Tata and McNamara, 2016). ICT centered advisory methods are currently receiving a lot of attention, but it is important to realize that they are not sufficient on their own to address the information and knowledge needs of small-scale producers. Developing integrated ICT-based advisory approaches requires organizational capacity and a strong policy and enabling environment to encourage the involvement of public sector actors in this area (Barber, Mangnus and Bitzer, 2016).

Selecting extension and advisory methods

While most RAS programmes and projects have guidelines on how to use and evaluate methods, there is often a lack of detailed information and guidance on what factors to consider when selecting approaches and methods. The results is a tendency for some providers to take a one-size-fits-all approach, using a single or just a few methods. However, the inappropriate selection and use of advisory methods is likely to limit the cost-efficiency and effectiveness of service provision, resulting in poor impact and a failure to meet clients' needs.

In assessing what method to use, initial attention should to be given to the objective(s) of the advisory activity and the content involved. Table 10.2 identifies 8 advisory objectives and matches them to "best-fit" methods. Box 10.2 defines types of content.

TABLE 10.2: Categorization of advisory methods

ADVISORY OBJECTIVE	TYPE OF SERVICE	EXAMPLE OF SUITABLE METHODS
Expose farmers to new technologies or practices through direct contact with a professional rural advisor	Technology transfer	• Demonstrations • Field days • Study tours • Rural resource centres
Provide access to and share knowledge and information; problem diagnosis	Creating Awareness and providing access to knowledge	• Radio campaigns • Video viewing clubs • radio listening groups, • Mobile phone-centered approaches (e.g. SMS, Interactive voice response systems, E-kiosks, telecentres, etc.) • Radio and television programmes (e.g. documentaries, dramas) • Fairs, shows and rallies • Farmer-to-farmer approaches and learning • Plant clinics
Involve producers in the research process at different stages	Research focused	• Farmer research groups • On-farm trials • Participatory technology development and farmer participatory research
Provide inputs and technical advice	Technology transfer	• Agro-input centres • Village based self-employed agents • E-wallets
Change the relationships between household members, how they perceive each other and make decisions	Intra or inter-household dynamics and behaviour change	• Management Advice for Family Farms (MAFF) • Household Methodologies
Strengthen problem solving, empowerment, social capital/ collective action	Group based learning and action approaches	• Farmer field schools and related approaches • Study circles • Farmer learning groups • Innovation platforms
Innovation, experimentation	Creative learning	• Innovation platforms • Experimentation • Brokering among actors • Learning by doing • Farmer learning and research groups
Promote social capital and encourage development of groups/ organizations	Organizational development	• Organizational development approaches • Farmer field schools and related approaches • Farmbook
Link farmers to markets and services	Create linkages and promote networking	• Mobile phone based services • Radio programmes • Internet-based services • Fairs, shows, rallies
Promote learning through structured approaches	Structured learning	• Courses • Workshops

BOX 10.2: Content of advisory methods

CONTENT	EXPLANATION
Diagnosis/advice	The identification of a problem by analyzing the causes and, if appropriate, examining symptoms. The outcome of this process is the experience of how to address the problem and find solutions in such a way that the decision-making competence of the producer is enhanced.
Information	Facts provided about something such as an innovation, an organization, data on weather, disease outbreak, other services or an event
Knowledge	Coming to a theoretical and practical understanding of a subject through an active learning process
Skills	Expertise and know-how of how to do something. These include technical skills as well as social skills, such as communication, negotiation, conflict resolution, problem solving and self-confidence.
Technologies and practices (innovations)	Technical innovations that seek to improve or enhance agriculture along the value chain, such as seed of new crop varieties, machinery, pesticides, agricultural practices (e.g. land preparation, planting techniques, post-harvest techniques)

Achieving the right match for field conditions however is complex and calls for a systematic process that takes into consideration not only the advisory objective and content but also situation-and context-specific factors, such as characteristics of the target population, scale to be achieved, availability of resources and the cost and ease of implementing the method. The following describes the initial steps of such a selection process that can be used by service providers and advisors.

Step 1: The first things to clarify are the purpose as well as primary (advisory) and secondary objectives, as this determines what information is required in order to select a method. Yet, early in the methods selection process, it is also important to collect information, if not already available, on the context in which the activity is being carried out. Some questions to ask include:

- What are the advisory demands, needs and interests of different categories of producers? What constraints do they face? What opportunities exist?
- With regard to the target group(s) or area, what language (s) are spoken, what are some cultural characteristics, socio-economic status of the population, role and status of women?
- Who are potential partners, such as radio stations, research institutions, NGOs, private firms?
- What is the state and availability of infrastructure (e.g. roads, electricity, internet connectivity, mobile phone networks)?
- What is the policy environment broadly, and in regard to RAS?
- What methods are used by other RAS providers for achieving specific advisory objectives? How can synergies and complementarity be achieved?

RAS service providers tend to lack information about the population and context in which they work, partly because data collection is time consuming and expensive. It is important for RAS providers to keep in contact with producers, their organizations and local communities in order to establish confidence. Collecting information periodically to capture the dynamic nature of situations and identifying and characterizing different categories of producers is also crucial. Sharing such data and information among service providers operating in the same area would save costs and promote joint learning.

Step 2: Identifying the objective(s) of an advisory activity (Table 10.2) and the content of the advice or services being provided (Box 10.2) is a critical step in selecting methods and approaches. During this step, questions that need to be raised include:

- What is the main extension and advisory goal or objective? What are we trying to do?
- What type of content is involved?

While advisory activities may have multiple objectives, they will usually have a primary one. Activities with several objectives of equal importance may require the use of several methods. Similarly, in many cases, an activity could have more than one content, although one category may be dominant.

Step 3: Having information on the target population is critical because of differences between producers in terms of individual and socio-economic characteristics, which influence needs and interests, the constraints they face and their ability to access advisory services. For better targeting, it is important to consider the following:

- What resources or assets are available to clients?
- What are the service demands of different groups in the target population?
- What is the client literacy level? What adjustments are needed to work with clients who cannot read or write?
- What proportion or percentage of clients are women, young people, very poor people, etc? What adjustments are needed to work with each of these types of clients?

As many advisory methods require some level of client literacy, it is important to consider what adjustments, if any, can be made to address the needs of clients who are unable to read and write. For example, participants in farmer field schools need to be able to read and write to carry out the agro-ecosystem analysis that is an important part of this method. One approach to helping non-literate participants is to ensure that small groups doing the exercise include people who are literate. Similarly, the use of text messaging may be unsuitable where a large percent of the target group is illiterate.

Women clients have specific needs and constraints that differ from those of men, and such differences should be considered when selecting advisory methods. Generally, women's heavier workloads means they have less time to engage in other activities and may be unavailable at certain times of the day. In some cultures, women have limited mobility and may not be able to travel outside of their communities on their own. Not being allowed to mix with men or speak freely in mixed groups are other constraints women face in some cultures. Like women, the poor tend to be

constrained by time, lower levels of education and social constraints. Youth are another target group with specific interests. As is well known, it is easier to attract and engage young people by using a business approach, the most up-to-date farm technologies, ICTs and "edutainment".

Step 4: Think about scale and what resources are required by asking:

- How many people will need to be reached?
- How much and which resources (e.g. funds, human resources etc.) does the organization have available for advisory services? Does the organization or potential partners have experience with the method it proposes to use?
- Are other RAS providers interested to join the objectives and to use the same approaches and methods?

The number of people to be reached is very much related to the content and the advisory method. For example, it is relatively easy to provide information to, or raise the awareness of, a large number of people than it is to train a similar number in a particular skill. Thus, radio can reach a larger number of people compared with farmer field schools or a workshop. Early on it is important to identify what funds, human and other resources are available, as these have implications for which method or combination of methods is most appropriate.

A decision guide developed by FAO helps the user to go into more detail in the process outlined above in order to identify what method may be appropriate for their purpose (David and Cofini, 2018). The guide uses a two-step process to identify suitable methods. In step 1, the user identifies the purpose, objectives and content of the proposed activity. On the basis of these three criteria, the user identifies a number of possible methods. The user then assesses these best candidate methods against five criteria: cost, reach (scale), ease of implementation, suitability for working with low literacy populations, and suitability for working with women. The advisor or service provider then further assesses the best candidate methods and make a decision about which to use.

Imbedding methods in RAS organizations for effective scaling up

While this module has highlighted the importance of using the right situation-specific methods to achieve advisory objectives, it is important to recognize that the key challenge of RAS is not just about getting the methods right, but rather seeing methods as a means to enhancing access to information, knowledge, skills and technologies. In this regard, as Christoplos rightly points out "challenges remain in anchoring these methodological changes in prevailing structures and organizations and in recognizing and addressing the financial and human resource constraints in scaling up their use" (Christoplos, 2010:8). In the current situation, characterized by limited investments in RAS by governments and other actors, the institutionalization of more participatory advisory approaches and methods and taking them to larger scale remain a major challenge. Efforts to institutionalize these advisory approaches and methods should take place within the broader context of organizational and institutional reforms within RAS systems and should focus on developing the capacities of field and managerial staff, fostering synergies and complementarity between methods used by different organizations through RAS platforms and other coordination mechanisms, and establishing robust monitoring and evaluation systems to provide feedback and learning on advisory approaches.

Critically, educational curricula for rural advisory staff should focus on strengthening both theoretical and practical training on advisory methods. In-service training for advisory staff should also cover methods with a strong emphasis on the underlying principles of pluralistic, demand-led, market-oriented service provision so as to encourage advisors to "mix and match" methods, and to motivate them to develop new ones. Furthermore, as advisory methods are also the concern of non-traditional RAS actors in a pluralistic system (e.g. radio and TV producers, managers of producer organizations, input suppliers and meteorological services), it is important to develop their capacity on advisory methods through, for example, short or e-learning courses and written materials. RAS managers should also promote and reward innovation in advisory methods by, for example, including this area in performance evaluations of field staff.

Approaches to scaling-up such as reliance on donor funded projects, combining complementary methods (for example, encouraging farmer field school participants to share their knowledge with other farmers), cost-recovery and public-private partnerships, have shown varying degrees of success. Increased investments in RAS by governments, donors and private sector actors as well as policy changes in some areas are required to boost scaling up efforts. Developing policies to support the use of ICTs for RAS is one example where policy intervention is a prerequisite for ensuring that advisory services reach a wider number of smallholder farmers.

Case studies

The following case studies provide examples of matching advisory objectives with specific methods, thus avoiding the "one size fits all" syndrome.

CASE 10.1: TARGETED METHODS FOR RAS ON COCOA IN WEST AFRICA

The Sustainable Tree Crops Programme (STCP), a public-private partnership innovation platform hosted by the International Institute of Tropical Agriculture (IITA) between 2003 and 2011, provided advisory services on cocoa integrated-crop and pest management (ICPM) and cocoa re-planting to producers in five West African countries (Ivory Coast, Ghana, Nigeria, Cameroon and Liberia). The programme used four different methods to meet specific advisory objectives and promote more efficient scaling-up.

Farmer field schools (FFS): FFS participants received the most intensive form of advisory service, provided over a nine-month period. Learning occurred through three types of activities centered on 15 ICPM strategies, with an emphasis on improving farmers' knowledge. Discovery learning exercises allowed farmers to develop an understanding of concepts and principles related to the topic, as well as skills or practices, while field activities focused on teaching skills or practices. Through conducting agro-ecosystem analysis (AESA), farmer field school (FFS) participants learned how to make close observations of farm conditions and to analyze the interactions between the cocoa trees and other biotic and abiotic factors co-existing in the field. The group learning process, and specifically group dynamic exercises, increased farmers' communication skills, self-confidence and encouraged team building.

On the negative side, such a programme is expensive, time consuming, and needs high quality facilitation and supervision to ensure the methodology is being respected and the technical information is accurate, and overall is difficult to scale up.

Video viewing clubs (VVC): This method, based on a group of 20-25 farmers who meet weekly or fortnightly for 4 months to watch training videos, led by a trained facilitator, was introduced to address the challenge of providing good quality facilitation in FFS through the long FFS training cycle. VVCs relied on five participatory videos that focused mainly on cocoa ICPM practices. The method involved three elements: watching training videos, facilitator-led discussions on production practices with the aid of an illustrated guidebook, and field demonstrations of production practices covered in the videos. The focus was on experiential learning involving experience (through the videos and field exercises), reflection and conclusion (through discussion), which was expected to lead to a change in behaviour.

A drawback to the approach is that it needs good quality videos, which may be expensive to produce, and equipment (TV, video deck and power source) to view them.

Farmer-to-farmer approaches and learning: This approach was introduced to increase the number of farmers exposed to ICPM practices. Each FFS participant was required to sign a contract, agreeing to share practices learned from the FFS sessions with at least 2 other farmers (secondary knowledge recipients). Secondary recipients were provided with an illustrated guidebook on ICPM practices, received visits from FFS facilitators and attended field days organized for them.

A drawback to the approach is that it needs good monitoring to ensure that the technical message is accurately transmitted.

Farmer learning groups (FLGs): This method, which consists of a group of farmers meeting periodically on a demonstration plot, led by a facilitator, was used to train farmers on re-planting techniques. Both FFS graduates and farmers who had not attended field schools could participate in FLGs.

This approach had no obvious drawbacks beyond the need for a facilitator.

Source

Muilerman and David, 2011; David and Asamoah, 2011; David, pers. comm.

CASE 10.2: USING MULTIPLE TOOLS TO PROVIDE ADVISORY SERVICES IN ETHIOPIA ON NUTRITION-SENSITIVE AGRICULTURE

Public-sector rural advisors in Ethiopia use multiple methods to promote nutrition-sensitive agriculture. These include home visits, group discussions at farmer training centres and demonstration gardens. To complement these methods, the USAID funded ENGINE project developed the Household Agriculture-Nutrition Doable Actions (HANDS) Social and Behaviour Change Communication (SBCC) tool kit for RAS field advisors to improve communications with producers and encourage behavioural change. The SBCC kit had the following objectives:

- improve dietary diversity for mothers and children (6-24 months);
- encourage producers to grow more nutritious foods for household consumption;
- increase the use of farm income to purchase nutritious foods not produced on the farm;
- promote improved communication between couples and family dynamics to facilitate better nutrition and related practices; and to
- improve water, sanitation and hygiene (WASH) practices relevant to farming.

The kit comprises four tools that advisors can use in conjunction with their main advisory methods to promote the five doable actions on pro-nutrition behaviour and nutrition-sensitive agriculture practices:

Cell phone demonstration video: short videos in local language show how to carry out practices such as preserving green, leafy vegetables by blanching and sun drying.

Games: an interactive, experiential learning game (The earn and buy game) allows users to discuss real-life situations related to household financial management, encourages decision-making about what to buy with money earned through agriculture, and to strategize about foods families can produce at home vs. foods they can buy at the market, and highlights gender-specific issues that arise during household budgeting and expenditures.

Role play: "Discuss and decide together" gender role plays facilitated by advisors seek to improve family dialogue, and communication between a couple about agriculture and nutrition.

Printed materials for producers: the materials include pocket sized, accordion-style, leaflets with many pictures that promote increased consumption of animal protein, growing nutrient-rich fruits and vegetables, carrying out WASH practices in farming (e.g. hand washing after farming), and posters emphasizing the five priority action areas.

These four tools take into consideration women's specific needs and constraints, as well as those of low literacy clients.

The kit also includes tools to support rural advisors in using the kit with producers. Advisors are provided with flip charts on the key actions and posters for their office and receive weekly SMS to remind them to call into an interactive voice response (IVR) system (Mnutrition) that provides information on the key practices.

Source

Clemmons, L. 2016. USAID/ENGINE's Dietary Diversity and "Farm WASH" SBCC Kit for Agricultural Extension Workers: a preview. (also available at: https://vimeo.com/154257035).

SUMMARY

Advisory approaches and methods are the means used by RAS to achieve advisory objectives such as enabling producers in selecting the most appropriate technologies, raising awareness, improving knowledge and skills, involving producers in research, changing intra- and inter-household dynamics, supporting problem solving and innovation, empowerment, strengthening of producer organizations and strengthening linkages between producers, markets and other rural actors and services. Moving toward pluralistic, demand-driven and market-oriented RAS calls for approaches and methods that encourage participation, provide options and promote farming as a business and encourage different categories of producers to make their own decisions and demand services that meet their needs and interests. Clearly, no single method can addresses the range and complexity of advisory objectives adequately. RAS need to use several methods, each selected for a specific purpose and context, taking into account factors related to the content of the advisory service being provided, characteristics of the target population, and resources (financial and human, etc.) available to the service provider and the producers.

Factors contributing to success in applying advisory methods include competent facilitators and adequate support and supervision to ensure quality, relevance and updated technical content, good planning, and organization and

partnerships with relevant organizations. Methods are unlikely to meet the needs of rural clients when they use top-down or one-way communication approaches, provide options that are not relevant, technically outdated or biased toward the interests of implementers or sponsors, and create dependency. While there is growing interest in ICTs as an effective way to provide advisory services to a large number of producers, ICT-based approaches are not sufficient on their own and need to be used in combination with other advisory methods. Moreover, the success of ICT-based approaches depends heavily on the strong organizational capacity of service providers and a favorable policy and enabling environment to put in place the necessary infrastructure and create incentives for private sector involvement.

Institutionalizing and scaling up advisory methods remain critical challenges in the light of the need for organizational and institutional reform in extension in most countries, not heped by generally low investment in this sector. It is crucial that RAS management ensures the institutionalization of methods by promoting approaches and methods in a systemic and coherent manner, as well as the respective organizational culture. Increased investment in RAS by governments, donors and private sector actors, and policy change in specific areas (e.g. ICTs to support RAS) are critical for scaling up approaches and methods that have been successfully implemented at pilot level. Improving the capacities of RAS organizations and advisory staff in selecting, implementing and evaluating approaches and methods, fostering synergies and complementarity in the methods used by different organizations, and establishing a standardized monitoring and evaluation system to provide feedback and learning on methods – all these are some ways to ensure that a larger number of producers have access to RAS and receive good quality services in a timely manner.

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MODULE 11: Managing RAS systems and organizations

By Blum, M.L. and Cofini, F.

OBJECTIVES

1. to discuss the need for change management and result-based management in RAS;
2. to examine the challenges in managing RAS systems and organizations;
3. to review innovations in managing RAS programmes;
4. to understand how to manage change in organizations and leadership challenges associated with change; and
5. to have insight into capacity development needs related to managing RAS.

INTRODUCTION

Managing an effective Rural Advisory System (RAS) system that efficiently meets the varied support needs of different kinds of clients is a real challenge. The increasing pluralism witnessed in RAS provision has made organizing and managing RAS more complex. During the last two decades, public investments in RAS have been in decline in most of the developing countries. The number of extension staff in public systems also fell during this period, with some exceptions such as China, Ethiopia, South Africa and Morocco.

> *"The revival of commitment to extension services is heartening and long overdue, but it needs to be informed by lessons from the past about the failures inherent in choosing a very limited palette of methods and organizational forms through which to channel new resources"* (Christoplos, 2010).

To succeed, RAS providers must become learning and agile organizations supported by a strong leadership and able to adapt to a changing and dynamic environment (Gabathuler, Felicitas and Klay, 2011). To do this, they would need a normative reform, which goes beyond the 'One size fits all' approach, coupled with a change management process to effectively address the change and capacity development programmes in managing for results, as well as in managing change. Indeed, simply adopting an extension policy is not sufficient to guide change (Okorley, Gray and Reid, 2011). The change management process will result in organizational change within all levels of the RAS organization, but also its role and embeddedness in the overall advisory and innovation system.

This module discusses the challenges implicit in organizing and managing pluralistic RAS systems and organizations, the ways to address those challenges by leading and managing change, and by planning for results and client orientation. It also looks at the importance of building the respective capacities in RAS systems and services.

DEFINITIONS

Management

Management is the process of reaching organizational goals by working with and through people and other organizational resources. See: https://managementinnovations.wordpress.com/2008/12/03/define-management-its-functions/

Result-based management (RBM)

RBM is a management strategy by which all actors, contributing directly or indirectly to achieving a set of results, ensure that their processes, products and services contribute to the achievement of desired results (outputs, outcomes and higher-level goals or impact). The actors in turn use information and evidence on actual results to inform decision making on the design, resourcing and delivery of programmes and activities as well as for accountability and reporting. (UNDG, 2012:2)

RBM includes the definition of strategic goals, the planning of expected results that contribute to those goals and aligning programmes, processes and resources behind them. It requires continuous monitoring and assessment of performance and achievements, as well as the integration of lessons learnt into future planning and for improved accountability.

Change management

Change management is an organizational core competency that provides competitive differentiation and the ability to effectively adapt to the ever-changing world. An organization's change management capability means effective change management is embedded into that organization's roles, structures, processes, projects and leadership competencies. Change management processes are consistently and effectively applied to initiatives: leaders have the skills to guide their teams through change, and employees know what to ask for in order to be successful.

In RAS organizations with enhanced change management capabilities, RAS managers and advisors can embrace change more quickly and effectively, and RAS organizations are able to respond quickly to changes in the economic, social and technological environments and in service demand, embrace strategic initiatives, and adopt new knowledge and technology more quickly and shoulder new challenges with less adverse performance impact. To develop change management capability requires a strategic approach in order to embed change management across the RAS organization.

Adapted from: https://www.prosci.com/change-management/what-is-change-management

Capacity Development

This is the process by which individuals, groups and organizations, institutions and countries develop, enhance and organize their systems, resources and knowledge; all reflected in their abilities, individually and collectively, to perform functions, solve problems and achieve objectives (OECD, 2006).

DISCUSSION

To achieve agricultural potential, improve yields and mobilize agriculture extension for food security and rural development, over the years many governments implemented structural and institutional reform processes (Raabe, 2008; Kamputa and Ehret, 2003). Initially, many of these extension departments/divisions were small in scale and limited in the scope of their work with farmers. Over the years these organizations have grown in staff, budgets and activities and

> *"they have invariably become more bureaucratic with distinct hierarchical structures. Public sector extension is often organized as a bureaucracy in a top-down fashion, like other departments of the Government involved in public administration, though this organizational set up is not appropriate for a service-delivery-oriented organization as extension (Hoffmann, 2011). The work of dispersed extension advisors had to be administered and controlled. so one or more levels of intermediary structure (for example, district or region) have been created between the field-level agents and their headquarters"* (Jones and Garforth, 1997).

Institutions are the norms, rules, habits and practices of an organization that determine the propensity of each actor to interact with other actors in the innovation system. Some of the "institutions" in extension are a rigid hierarchy and centralized planning; a tradition of assessing performance in terms of technology adoption; a history of rewarding only success and thus a reluctance to report and analyse reasons for failure; a history of working independently; a mistrust of other agencies; and a tradition of upward accountability for resource utilization rather than output achievement and client satisfaction. Such mindsets have to change if extension is to broaden its agenda and work in partnership with others (Sulaiman and Hall, 2002).

Over the last two to three decades, many different organizations entered the field of extension and advisory services. Currently there are many different organizations at work, operating in different problem areas and with different client groups, having different ownership and legal status, and pursuing different objectives with their extension services. Some of these providers would not classify themselves as extension, but rather as community developers, innovation brokers, natural resource planners, etc. (Christoplus, 2010). Increased numbers of service providers means competition with traditional services, and puts pressure to perform better and in a different manner. In addition, shrinking financial resources as well as the need for enhancing capacities of advisory staff have all made organizing and managing extension more challenging.

Management of RAS has not received much attention in extension reform, yet it is fundamental in order to achieve performance of the RAS organizations and to strengthen the position of RAS in the overall agricultural innovation system (AIS). Management of RAS organizations needs to change, and their managerial and leadership capacities strengthened, for a number of reasons:

- a rapidly changing social, technical and economic environment in which RAS needs to reposition itself in an innovative, flexible and efficient manner;
- changing demand for services from increasingly divers smallholder farms, which requires RAS to respond with relevant and timely good quality services;
- multiple RAS providers, AIS actors and new types of service providers urge RAS providers to be more competitive, but also capable in building partnerships;
- new technologies and organizational forms, e.g. for knowledge management, which require new strategies, approaches, staff profiles and equipment; and
- others.

However, many RAS providers still need to change from a top-down, supply driven, administrative type of management to new, innovative change management, with visionary leadership, as well as result and client orientation.

This change in management needs to happen, so that RAS can:

- At the level of the RAS organization:
  - become more dynamic and performing advisory providers;
  - be demand- and client-oriented, and innovative in service provision;
  - improve access to services (information, knowledge and technologies) of their clients, particularly smallholders;
  - strengthen capacities of producer organizations to enhance their roles in RAS; and
  - increase their effectiveness and enhance inclusive services through networks and partnerships;
- At the level of the RAS system:
  - Address, jointly with other RAS providers, extension reform issues at system level;
  - effectively contribute to policy dialogue and implementation related to sustainable agricultural and rural transformation in the context of climate change and increased migration;
  - make use of innovations, business opportunities, new information and communication technologies (ICTs) for information and knowledge management, etc.; and
  - strengthen the bridging and brokering function of RAS towards markets, knowledge organizations and other actors in AIS.

Rural Advisory Services as learning organizations

The institutional strength of RAS providers affects largely how efficient, effective and sustainable providers are, and what position they have within the AIS. In addition, provider performance and competitiveness are greatly influenced by the way they are managed. Along with the changes having occurred in the extension systems, new managerial practices evolved. Management mindset changed from a concept of control and authority to a more participative coaching role (McGrath, 2014). Organizations are dynamic systems made by individuals, in a state of continuous improvement and adaptation; for these systems learning is a precondition for adapting quickly and effectively to changing environment (FAO, 2013).

Yet many RAS providers are weak from a managerial, institutional and organizational point of view and in consequence, human resource development also suffers. Particularly with insufficient leadership and a limited portfolio, RAS providers often do not put sufficient emphasis on reviewing their institutional policy, managing their results, introducing innovations and learning from their experience in order to make the institution fit and flexible ready to address the challenges not only of today, but also those of tomorrow.

"If organizations do not reflect critically on their mission, services, products, cultures and procedures, etc., on a regular basis, they may well become dysfunctional and go bankrupt or be abolished" (Leeuwis and van den Ban, 2004). Many organizations do not have a culture of learning. Creating a platform to share success, mistakes and failures and reflect upon them is essential. They should also be a "space" to experiment with new approaches and design appropriate interventions relevant to the local circumstances. Developing better habits and practices that promote wider interaction and learning is perhaps the greatest challenge for RAS organizations.

RAS providers must become learning and flexible organizations. Organizational learning occurs at all levels (individual, team, organizational and societal) and it is related to both structural (institutional arrangements that facilitate the collection, dissemination and use of information) and cultural factors (shared professional values, leadership, and vision) (Rowe, 2010). In this view, management can be seen as learning process which includes more specialized managerial processes such as entrepreneurial learning, strategy formulation, creativity, problem solving and decision-making and leadership (Kolb and Kolb, 2009).

To operate successfully, a RAS organization should have

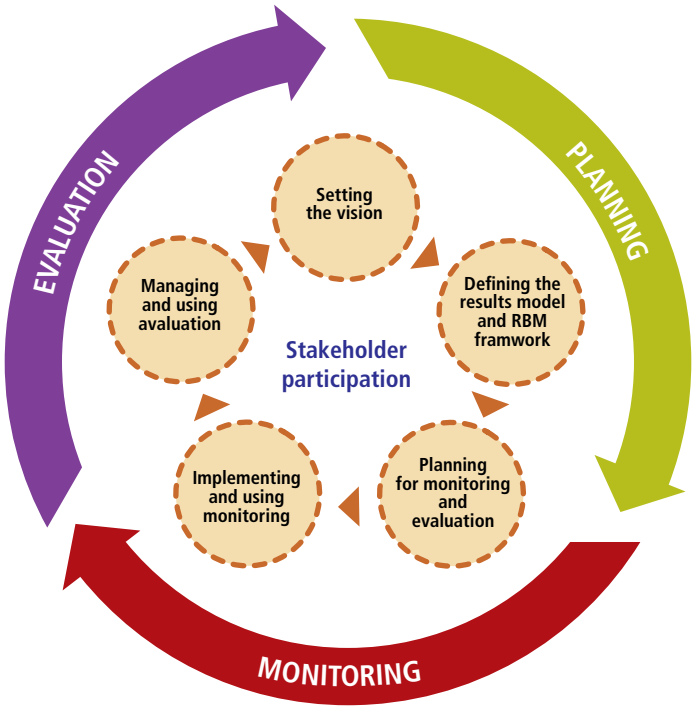
- an appropriate legal framework;
- adequate financing mechanisms that ensure sustainability and the achievement of their mandate and objectives;
- credible and effective leadership;
- organizational structure and set-up; and
- professionally qualified and well trained staff.

RAS between countries vary significantly on these parameters.

Improving performance and achieving (and demonstrating) desired results are a central concern of many agricultural organizations, including RAS organizations (Gebremedhin, Getachew and Amha, 2010). Result-based management (RBM) provides a coherent framework for strategic planning and management by improving learning and accountability (OECD, 2010). RBM is based on processes of doing, learning and improving, in which it is essential that managers, staff and all the other stakeholders learn from past experiences.

The development of a solid RBM system requires 7 main pillars: planning, programming, budgeting, monitoring and evaluation; human resources management; and management information systems. In a RBM 'life cycle' (Figure 11.1) 'results' are central to planning, implementation, monitoring and evaluation, reporting and ongoing decision-making.

FIGURE 11.1: The RMB life-cycle approach



Source: **UNDP.** 2009. Handbook on Planning, Monitoring and Evaluating for Development Results. In UNDG, 2012.

Following the RBM life-cycle approach, both vision and mandate need to be reviewed on a regular basis, and institutional, organizational and staff capacities continuously developed accordingly. Planning involves defining a goal and determining the most effective course of action needed to reach that goal. Planning and implementation of advisory services should be flexible enough, so that changes could be made as they appear necessary on the basis of lessons learned, monitoring and evaluation, as well as based on changing demands for services and new challenges that emerge in the agricultural and rural transformation domain.

Mayne (2007) identified 6 principles, widely referenced in RBM literature, for effective RBM regimes:

Principle 1: foster senior-level leadership in RBM;

Principle 2: promote and support a results culture;

Principle 3: build results frameworks with ownership at all levels;

Principle 4: measure sensibly and develop user-friendly RBM information systems

Principle 5: use results information for learning and managing, as well as for reporting and accountability; and

Principle 6: build an adaptive RBM regime through regular review and update.

PLANNING AND IMPLEMENTATION

The coordinating function of management controls all the organizing, planning and staffing activities of the organization or company and ensures that all activities function together for the good of the organization. Coordination typically takes place in meetings and other planning sessions with the team leaders or heads of units of the company to ensure all departments are on the same page in terms of contributing to the same objectives and goals. It also involves providing direction, establishing linkages and a two-way communication, as well as organizing and supervising staff and monitoring and evaluating results.

The detailed planning requirements of RAS work mainly depend on the size of the RAS provider, the types of tasks to fulfill and its complexity and the extent of territory to cover or number and type of clients to serve. As there is always more to be done than the budget and capacities allow, a careful search for partners has to be undertaken to increase the labour force and competences by means of cooperation. Normally a situation analysis leads directly to planning. In demand-driven, participatory RAS, be it at individual or group level, the situation analysis is done with the clients, and often it is the foundation of advisory work. A checklist on information gathering for situation analysis is given under the Tools section of this module.

RAS are embedded within a wider service context, including credit, input supply, processing, marketing and communication and information services. Inadequate infrastructure, insufficient farm capital and remote markets, along with a lack of access to adequate information, are all barriers that cannot be solved by advisory services alone, but require parallel, supplementary measures and hence collaboration with relevant specialized organizations. Management has a central role in developing, formalizing and adjusting such collaboration over time.

The organizing function of management controls the overall structure of the RAS organization. Organizing involves designating tasks and responsibilities to units, teams and employees with the specific skill sets needed to complete the tasks and to achieve the desired results. Organizing also involves developing the organizational structure, chain of command, but also teams within the organization. Teamwork is at the centre of new management systems, emphasizing horizontal cooperation within and between RAS organizations, to avoid silos and enhance inter-disciplinary collaboration. This is of crucial relevance, given the multiple profiles and specializations required in RAS, but also essential due to the pluralistic nature of RAS where RAS providers need to complement each other and create synergies. While these "teamwork management systems" are generally based in profit-making and business organizations, their principles and processes are also beneficial for public sector institutional management.

Determining the appropriate combination of RAS approaches and methods is also crucial for efficient and effective implementation (see Module 10). The focus of RAS is not merely technology and information sharing. RAS also provides advice related to farm profitability, organizational and business management, and brokers relationships among the different agencies involved in agricultural development, and facilitates access to non-advisory rural services. RAS approaches and methods need to incorporate behavioral changes at every level – within the RAS organization, its clients and partners: policy, demand, enterprise, support structure and within the general farming community, through promotion of improved agricultural practices and enhancing rural economic and social development rather than just delivering technologies and goods to the farmers.

MONITORING AND EVALUATION

To improve and optimize RAS' contribution to development, management needs to establish performance standards and monitor the achieved outputs. This allows evaluation of progress made in meeting the organization's goals and, if required, to invoke corrective measures or to adjust performance standards and goals. However, monitoring and evaluation is also important to learn from experience and to ensure accountability of RAS towards both its clients and those financing RAS organizations.

It requires:

- developing a Monitoring and Evaluation (M&E) framework, strategic plan and budget;
- enhancing capacity of individuals and teams to carry out M&E tasks;
- data processing infrastructure; and
- a conducive M&E and learning culture.

Specific attention needs to be given to actually using collected data for day-to-day and strategic decision-making and to economize data along these lines.

Monitoring focuses on inputs, outputs and outcomes whereas periodic evaluation addresses these aspects, as well as impact, and endeavours to establish causality and attribution (Swanson and Rajalahti, 2010). The increased level of emphasis given to results (outcomes), as opposed to activities and outputs, has also brought about some major changes in the focus, approach and application of M&E systems. As the focus of management changes from activities to results, the focus of M&E also changes from the traditional M&E system, which focuses on assessing inputs and implementation processes (progress monitoring) to a results-based M&E (RBM&E) system, which emphasizes assessing contributions of interventions to development outcomes (Gebremendhin, Getachew and Amha, 2010). Furthermore, client satisfaction is of vital importance when it comes to M&E of RAS. Feedback mechanisms and client involvement in participatory evaluation would help ensure relevance of service provision, as well as accountability to clients. ICTs provide tools making regular feedback from clients possible. Yet their use for this purpose is still not widespread.

Monitoring is usually a precondition for good evaluation based on evidence and learning. Data need to be systematically collected during the course of an intervention if it is to be possible for an evaluation team to subsequently make a rigorous and verifiable assessment of the progress that has been made (GFRAS, 2011). Despite the importance of collecting information to monitor progress and improve performance, monitoring goes beyond data and information collection. Particularly, monitoring is an ongoing process that if implemented in a participatory way can generate a learning process and hence ownership among staff, clients and other stakeholders involved (UNDP, 2009). All concerned should be involved in drafting the evaluation questions to ensure that the evaluation responds to real needs. For a more detailed discussion on Monitoring, Evaluation and Impact Assessment of Extension, see GFRAS, 2011; Suvedi, 2011; Hoffmann *et al.*, 2009; and Swanson and Rajalahti, 2010.

M&E at system level needs to reflect the diversity of RAS, which are driven by a mix of goals and interests from farmers, governments, private firms, researchers and others in the innovation systems and within the broader rural development scenario. Despite the recognition that evaluation is important for accountability by showing evidence of performance and impact, and for re-orienting the RAS system and its organizations given its changing environment and challenges, there has been no systematic effort to enhance capacity development in this area. Many countries lack professionals who can plan and conduct systematic assessments of the results and impacts of RAS programmes, but also lack leadership and resources to design and implement a national M&E system for RAS. Online M&E programmes would be essential for such a national M&E system so that all RAS stakeholder could participate in order to determine the overall contribution of RAS to the development of a country.

CHANGE MANAGEMENT

Rapidly altering social, economic, environmental and technological forces are severely affecting the scope and speed of change in today's organizations, both for RAS and others. As a result, the performance of organizations — whether public, private or non-profit — is determined by the ability to quickly and cost-effectively adapt, innovate and evolve. This has not been the strength of traditional RAS, but is of paramount importance given the fast changing scale and scope of agricultural and rural transformation challenges. This also calls for change in the way challenges and opportunities are tackled. The digital revolution, including artificial intelligence, coming into agriculture and daily life, has and will further change service provision. This requires leaders that can efficiently perceive and respond to circumstances calling for change, guide the development of a new vision, and manage effectively the transformative processes required. Inspiration, collaboration, and creativity are central to solving complex problems, developing new strategies, facilitating innovation, and driving change within the organization and with partners.

Hence, the success or failure of many reform processes is often related to how organizations have managed the change (Huerta Melchor, 2008). However, many organizations acknowledge the importance of an effective strategy to manage change often only after a change process has been undergone as one of the main lessons learnt (Kamputa and Ehret, 2003; Cochran, Ferrari and Arnett, 2014). Why changes are needed, what operational areas are in need of development or change, and how a change process can be implemented are the questions most often addressed when dealing with change management (Jansson, 2009).

In Malawi for example (Kamputa and Ehret, 2003) in order to respond to reduced public sector funding, lack of human resources and to make extension services more responsive to diverse farmer's need and demands, the Department of Agricultural Extension Service underwent a deep organizational change and reform process. This process was guided by small, motivated Change Teams, which were temporary in nature and addressed specific issues. They were led by a team leader, but operated in a non-hierarchical manner and directly responsible to the Director; they comprised members from both within and outside the department at all hierarchical levels, assisted by external technical experts. Some good lessons resulted from this change process: As change management focuses on the people side of change, the process needs to effectively deal with and address personal behaviors and attitudes. Furthermore, "there are a number of pre-conditions that need to be met for success, which include: (i) support from management and top leadership, (ii) allowing time for the change process, (iii) making sure that tangible results are produced, and (iv) providing team members with clear performance indicators and procedures." (Kamputa and Ehret, 2003, p. 85).

Fernandez and Rainey (2006) have identified eight factors and the related activities which positively affect institutional change in public institutions, and that manager should be aware of when they decide to undergo an organizational change:

TABLE 11.1: Eight factors that positively affect institutional change

FACTORS	ACTIVITIES
Ensure the need for change: verify and communicate	Crafting a compelling vision for change Help staff to see the urgency of the need for change
Provide a plan	Develop a course of action, a strategy with goals and a plan for achieving them. Identifying potential obstacles, and proposing measures for overcoming them
Build internal support for change and overcome resistance	Assure widespread participation in the change process, overcome resistance by understanding the norms, attitudes, and beliefs behind resistance and see it as a potential asset for change initiation
Ensure top management support and commitment	Identify an 'idea champion', namely a highly respected individual who can lead and maintain commitment to change. Encourage organizational leaders to be facilitators of change rather than the originators
Build external support	Develop support from political overseers and key external stakeholders
Provide resources	Plan redeployment or redirection of scarce organizational resources toward: developing a plan for implementing the change, and communicate the need for change, involving training staff, developing new processes and practices, restructuring and re-organizing the organization, testing and experimenting with innovations
Institutionalize change	Incorporate new policies or innovations into organization members' daily routines
Pursue comprehensive change	Develop an integrative, comprehensive approach to change that achieves subsystem congruence, aligned with the end state

Source: Authors' compilation based on Fernandez and Rainey, 2006.

MANAGING CAPACITY DEVELOPMENT IN RAS ORGANIZATIONS

Keeping in view the new global and local challenges facing agriculture and rural development, RAS needs enhanced capacities to address these. There is a shift from purely technical approaches to those that include organizational, cultural and social aspects. Over the last decade, there has been an increasing realisation of the importance of tasks such as community mobilization, conflict management, problem solving, education and human development (van Beek, 1997), organization building, social learning and negotiation (Leeuwis and van den Ban, 2004) and the need for RAS advisors to acquire social science skills to perform these tasks (van Beek, 1997; Farrington, Sulaiman and Suresh, 1998; Sulaiman and van den Ban, 2000). Realisation of these tasks is key as most of the innovations needed in present day agriculture have collective dimensions, i.e. they require new forms of interaction, organization and agreement between multiple actors (Leeuwis and van den Ban, 2004). New capacities for managing change and results are needed at all levels to engage stakeholders and ensure local ownership, to build indicators into RAS design to track progress and, when necessary, make adjustments for improved adaptive management, to assess results achieved and communicate them to diverse stakeholders, among other things (World Bank, 2009).

Organizational-level capacity includes systems, procedures and institutional frameworks that basically allow an organization to operate and deliver demand-driven services to their clients by capitalizing the individual capacities of its staff. As discussed earlier, all RAS' should have the capacity to form, support and manage alliances and partnerships;

build capacity of other organizations; mobilize knowledge and support from different organizations involved in the AIS and contribute to policy and institutional changes to address the new challenges. The institutional setting and collaboration within the organization largely determines this capacity, and therefore having the right institutions (routines, habits, practices, rules and laws) that favour or support interaction, learning and sharing is important.

TABLE 11.2: Capacities required at the organizational level in extension and RAS

BROAD AREAS	SPECIFIC AREAS FOR CAPACITY STRENGTHENING
Strategic Management Functions	Leadership (inspiration and motivational); vision building; change management; capacity to respond to emergencies; policy relations; advocacy
Structures	Ability to structure the organization as different units in the organizational hierarchy and ensure the different units interrelate harmoniously and are flexible
Relationships	Clearly defining authority, roles, responsibilities and resources among different units within an organization and across organizations within the AIS; building trust; creating time and space for learning from each other
Processes, Systems and Procedures	Planning, Organizing, Leading and Controlling Methods used in internal communication, performance assessment, human resource development, financial management, learning, M&E and ensuring accountability to different stakeholders
Values, Incentives and Rewards	Integrity, science-based knowledge, inclusion, partnership, learning, mechanisms to reward and incentivize good performance, acceptable standards that govern behaviour of individuals in an organization, opportunities for feedback and reflection, reputation
Human Resources	Ability to provide adequate numbers of staff and access to expertise in other organizations to complement and supplement its expertise; clear job descriptions, well defined roles and tasks, career development and incentives, access to new knowledge; mechanisms to mobilize, nurture and retain human resources
Financial Resources	Ability to provide adequate budget to cover staff salaries and all other operational expenses and investments and to develop and implement programmes benefitting smallholders or a sustainable business model that keeps the organization in business
Knowledge and Information Resources	Knowledge management, including relationship management to access skills and knowledge to deal with new challenges and opportunities
Infrastructure	Mobility, telecommunication, ICT, buildings and training facilities, roads, market infrastructure

Source: Sulaiman and Davis, 2012.

At individual level new capacities are required for managers and advisers to manage change and results. These include a set of functional capacities and capacities related to the innovation domain that includes interaction, learning, and adaptation to a changing environment. Managers therefore need to further develop their interpersonal, conceptual and technical skills and competencies such as facilitating change processes, motivating people, negotiating with partners and predicting future developments. Advisors need skills in building social capital, facilitating discussions, as well as networking and coaching stakeholders, for example in natural resources management and market supply chains. They must shift from lecturing to empowering clientele to deal with uncertainties and variability such as climate change and market trends. These tasks require professional skills in critical thinking, problem solving, organizational development and negotiation (see Table 11.3).

RAS services should also have capabilities to respond to a range of policy objectives, whether they may be political aims and public goods, such as environmental protection, or ensuring a profit for their owners. They should also be part of appropriate networks and institutional structures that are strong enough to ensure a balance of these accountabilities to both farmers and farmer organizations, ministries and other stakeholders. This includes, for example, capacities for and commitments to quality M&E so that individual advisors and their organizations can learn from experiences and be held accountable within broader innovation systems.

To make optimal use of ICTs, RAS advisers and managers at all levels should also have adequate skills in introducing, using and adapting ICTs for an increasing range of possibilities, including advertising services, knowledge management for the RAS organization, access to information for advisors, farmers, partners, and others, RAS planning, target setting and monitoring, etc. They should also have expertise and experience in bottom-up planning procedures, as well as sensitivity and skills related to gender issues in development.

In addition to technical expertise, advisory skills, exemplary positive attitude and personality, to do sound professional work, RAS advisors should have the willingness and ability to reflect on and learn from experience (Hoffmann *et al.*, 2009) and need opportunities for continuous professional improvement. Professional development support programmes, which combine mentoring, training, further education and competency development, can enhance individual performance as well as career development.

TABLE 11.3: Functional capacities required at the individual level in RAS

FUNCTIONAL
Community mobilization (organizing producers and rural women into different types of interest/activity groups)
Farmer organization development (organizing, sustaining and federating farmer organizations to take up new extension and advisory service tasks in agriculture, and linking them to new source of knowledge and services)
Facilitation (facilitating discussions and joint action)
Coaching (building capacities of stakeholders and providing back-stopping support)
Reflective learning (organizing experience-sharing workshops and facilitating learning)
Mediating in conflicts (by improving dialogue and helping to reach agreement)
Negotiating (reaching a satisfactory compromise or agreement between individuals or groups)
Brokering (creating many-to-many relationships among the wide range of actors)
Networking and partnership building
Advocating for changes in policies and institutions
Leadership-capacity to inspire and motivate
Managing resources (human and financial)
Critical thinking
Problem solving
Self-reflection and learning from mistakes
Service mindedness
Accountability
Responsibility
Dedication/Commitment
Working in multi-organizational and multi-sectoral teams
Working with rural women and using gender-sensitive approaches

Source: Sulaiman and Davis, 2012 .

For instance, the Agricultural Training Institute (ATI) in the Philippines offers several training programmes for national, regional and local government extension personnel, aimed at improving their managerial and technical competencies. It has also started offering international training courses for extension officers in the Association of Southeast Asian Nations (ASEAN) Member Countries. In India, the National Institute of Agricultural Extension Management (MANAGE) under the Ministry of Agriculture, offers training programmes on a range of topics, including gender mainstreaming, public-private partnerships, participatory RAS management, agri-entrepreneurship development, promoting common interest groups, etc.

DEVELOPING MANAGERIAL CAPACITIES: WAYS FORWARD

There are numerous measures available for building up and further developing the managerial capacities in RAS organizations for enhancing change and result orientation, such as improved leadership, strategic relationships, advocacy for the institutional policy, organizational, financial and technical support, knowledge management, together with planning and M&E.

Training, coaching or mentoring and further education are key activities in successfully developing managerial capacities, acquiring competence and experience for improving a person's performance in managing. However, some of the skills and expertise can only be learnt by actually doing, and therefore the approach to developing capacity has to be designed in an action-research mode, involving experimentation, reflection and learning. However, as the authority of RAS managers depends also greatly on their institutional and political networking capacity and influence, they have in these networks to be able to bring forward changes not only in the RAS organization they are heading, but also in national pluralistic RAS systems and programmes. To give more attention to competences and capabilities of managers is vital for the position of RAS in AIS and in shaping of national policies and programmes.

Developing new platforms and partnerships for managing dialogue and interactions of various actors and promoting joint interventions by coalitions of different actors are two important means of developing capacity for greater impact. Managers need the ability to listen to the various opinions of stakeholders, find their common ground and if necessary mediate in the event of conflicts. They need to consider the different levels of capacities, competences and skills when developing joint interventions and programmes, and to search for complementarity and synergy. The complexity of managerial tasks has tremendously increased in pluralistic and rapid changing environments. Hence, managerial capacities cannot be taken for granted, but need to be nurtured.

At the same time, **innovation platforms**, apart from promoting and managing collaboration, also provide a platform for capacity development (Boogaard *et al.*, 2013). Creating platforms to analyse and act together, sharing successes, mistakes and failures, and reflecting upon them is essential. Developing better habits and practices that promote wider interaction and learning is perhaps the greatest challenge in developing capacity in RAS organizations (Sulaiman and Davis, 2012). Such platforms need leaders that bring stakeholders together under a common goal and facilitate planning, action and learning processes.

To optimize opportunities available for **human resource development**, RAS managers need to give attention to new ways of managing staff, including delegation of authority and clear responsibilities in a result-based performance framework to enhance efficiency and effectiveness of the RAS organization. It is the responsibility of management to ensure that staff qualifications and skills are continuously improved and adapted and that measures are in place to motivate staff. ICTs help management to effectively monitor and evaluate results and human resources performance. However this needs to be complemented with human aspects: an inspiring leadership and a motivating organizational culture, so that staff are encouraged to engage for the cause of the RAS organization.

Case studies

CASE 11.1: How good management practices in pluralistic advisory systems can make a difference in improving agribusiness and access to markets for emerging small-scale farmers

Extension around the world has changed into more pluralistic, demand-led and market-oriented advisory systems in order to improve the quality and efficiency of advisory services to smallholder farmers. The Department of Agriculture in Western Cape in South Africa successfully designed and implemented several innovative management practices. The implementation of these practises are linked to the framework of the National Government's Land Reform, which promotes emerging farmers on redistributed land.

FAO, in collaboration with the Centre for Sustainable Agriculture, Rural Development and Extension of the University of Free State in South Africa, conducted a study to identify and document good management practices implemented for extension and advisory services in Western Cape. In the study, a mixed-methods design included a review of documents, interviews and questionnaires. The respondents included 40 farmers, 54 agricultural advisors and 7 managers of the Western Cape's Department of Agriculture.

Results obtained from the research initiative identified the following good management practices governing the extension and advisory system in Western Cape Province:

- **A visionary management team**

  The core of good management practices is the dedicated management team of the Department, which has worked for more than 10 years together as a team. This gave them sufficient time for developing a vision, designing and implementing strategic programmes, promoting institutions and public-private partnerships, as well as learning from experience.

  Delegation of authority by the Head of Department to managers of Chief Directorates and Directorates was crucial in efficiently and effectively managing the programmes and challenges. Introducing and managing change was not always easy, but benefited greatly from clarity and unity in management decisions.

- **Result-Based Management**

  The Department has a clearly defined vision and mission statement, with its objectives and approach to reach these objectives. This is greatly supported by both management and advisors and contributes to clearly defined, realistic targets that are understood by those contributing to it.

  Capacity development, incentives and appropriate means for reaching set targets are Also available, and thus it is not surprising that the majority of advisors have reached all their targets.

- **Human Resource and Performance Management**

  The staff in the Department have an impressive combination of education and experience, with almost all managers and advisors educated to at least a bachelor's degree, and the majority having more than ten years of advising experience.

Management developed tools and procedures necessary to measure performance of employees, departments, and organizations to ensure that goals and objectives are being reached efficiently and effectively.

The extension norms and standards defined by the National Department of Agriculture are strictly adhered to by all staff. Performance is measured against jointly set, clear targets in different areas and the ability in reaching them.

- **Public-Private collaboration for inclusive advisory services to farmers**

  The Department recognized the importance of the public and private sectors to effectively advise farmers, and introduced a number of public-private partnerships to provide inclusive services to emerging smallholder farmers. For example, support and advice in financial record keeping through independent private services were instrumental in monitoring progress of emerging farms (evolution of farm income and expenditures, reimbursement of loans, etc.).

  According to the advisors and managers the following partners are playing a particularly important role in the success of extension and advisory services: Commodity Project Allocation Committee (CPAC), Departmental Project Allocation Committee (DPAC), and Cape Agency for Sustainable Integrated Development in Rural Areas (CASIDRA).

  A fundamental shift was introduced to incorporate a commodity approach as a guideline in policy implementation, including the creation and strengthening of farmers' commodity organizations. Hort-gro, the Red Meat Producers Organization, and Grain SA are viewed as the most effective commodity organizations with whom the Department is collaborating.

- **A multifunctional ICT infrastructure**

  Management has seen the absolute necessity to introduce ICT infrastructures to improve the organization's efficiency and effectiveness through an Agricultural information management system (AIMS) which includes:

  - Knowledge management and learning tools for managers and staff consist of Cape Farm Mapper, Extension Suite Online, Fruitlook, Western Cape AgriStats Portal, Cape agricultural mobile information system (CAMIS) and others.
  - Improved access to information, knowledge and technologies by the farming community and citizens, although the available information and knowledge systems are much less used by farmers interviewed than by managers and advisors.
  - The digital pen technology to monitor advisory targets and promote performance of staff. According to advisors, the digital pen is particularly influential on the number of projects supported, the number of farms visited, and the quality of advice given. Record keeping on farm productivity with this tool still needs further improvement.
  - The use of current ICTs together with improvements in data speed and quality, and the wealth of resources available, enable extension advisors and farmers to access updated research and agriculture-related data, and thus help them to make appropriate decisions.

The good management practices and enabling factors implemented by the management team of Western Cape's Department of Agriculture contributed to the successful implementation of extension and advisory services. This resulted in the improvement of small farmers' financial situation, more sustainable farming practises with increased productivity and better access to markets. The impact is also evident from the success of land-reform farmers in the province, who depend very much on the quality of extension and advisory services. For these reasons, the Department can be considered to be at the forefront in performance and quality of extension and advisory services, not only in South Africa, but also on the African continent.

Source

Swanepoel, J., Blum, M.L. & van Niekerk, J. 2016. Improving agribusiness and access to markets of smallholder farmers. How good management practices in pluralistic advisory systems can make a difference. Concept note for the side event at the Committee on World Food Security (CFS) 43, 17-21 October 2016. Rome, FAO.

SUMMARY

Understanding better ways of organizing and managing change and results in RAS is critical for successful RAS services, irrespective of who is managing and funding it. However, in the case of public extension service, performance depends to a large extent on the re-organization and performance improvement of the Ministry of Agriculture of which it is a part.

In general, the management of RAS will depend on a number of basic considerations, as described throughout this module. Experimentation, learning and evaluation are central to move RAS forward. Training RAS leaders in new ways of management is absolutely necessary so that they are able to re-organize and re-invent extension into modern advisory services being part of a network of RAS and AIS actors and information systems that allow up-to-date services. This strengthening of managerial skills and competencies should be accompanied by an enabling environment of institutional and policy reforms. This in turn requires large-scale investments.

What is important is to develop capacity among policy-makers and RAS managers to identify different ways for organizing and managing pluralistic advisory systems and services that are strong and flexible enough to develop the "best fit" (Birner *et al.*, 2006) for the changing conditions and development priorities of their country.

Tools

TOOL 11.1: ELEMENTS OF THE ORGANIZATIONAL ASSESSMENT FRAMEWORK

Organizational performance refers to the ability of an organization to meet its goals and achieve its mission. An organization's performance is influenced by its capacity, by its internal environment, and by the external environment in which it operates. Performance can be gauged in terms of four key indicators:

- **effectiveness**: the degree to which the organization achieves its objectives;
- **efficiency**: the degree to which it generates its products using a minimum of inputs;
- **relevance**: the degree to which the organization's objectives and activities reflect the necessities and priorities of key stakeholders; and
- **financial sustainability**: the conditions to make an organization financially viable.

Organizational capacity refers to the resources, knowledge, and processes employed by the organization. For example:

- staffing;
- infrastructure, technology and financial resources;
- strategic leadership;
- programme and process management; and
- networks and linkages with other organizations and groups.

External operating environment refers to the external environment in which the organization carries out its activities. For example:

- the administrative and legal systems in which the organization operates;
- the policies and political environment that influences the organization;
- the social and cultural milieu;
- the technology available; and
- economic trends.

Internal environment refers to internal factors that influence the direction of the organization and the energy displayed in its activities. For example:

- incentive and rewards systems;
- the organizational 'climate' or 'culture';
- the history and traditions of the organization;
- leadership and management style;
- clarity and acceptance of the organization's mission;
- extent of shared norms and values promoting teamwork and pursuit of organizational goals; and
- organizational structure.

Source

Adapted from: Lusthaus, Anderson and Murphy, 1995. and Lusthaus *et al.*, 2002. In **D. Horton and 14 others.** 2003. *Evaluating capacity development: experiences from research and development organizations around the world.*

The Netherlands. International Service for National Agricultural Research (ISNAR); Canada, International Development Research Centre (IDRC); the Netherlands, ACP-EU Technical Centre for Agricultural and Rural Cooperation (CTA). (also available at: http://unpan1.un.org/intradoc/groups/public/documents/APCITY/UNPAN017418.pdf).

TOOL 11.2: A EIGHT-STEP CHANGE-MANAGEMENT MODEL

Kotter's eight-step change-management model (Kotter, 1996) can also provide guidance and structure when dealing with complex and challenging undertaking in RAS programming (Cochran, Ferrari and Arnett, 2014.).

1. **Establishing a sense of urgency**
   - identifying and discussing major opportunities and being clear why they must be accomplished now.
2. **Creating the guiding coalition**
   - putting together a group with enough power to lead the change; and
   - getting the group to work together like a team.
3. **Developing a vision and strategy**
   - creating a vision to help direct the change effort; and
   - developing strategies for achieving that vision.
4. **Communicating the change vision**
   - using every vehicle possible to constantly communicate the new vision and strategies; and
   - having the guiding coalition role model the behaviour expected of employees.
5. **Empowering broad-based action (empowering people to effect change)**
   - getting rid of obstacles; and
     - changing systems or structures that undermine the change vision; and
     - encouraging risk taking and non-traditional ideas, activities & actions.
   - engage employees as partners.
     - provide people with the opportunity to plan for and to take action.
6. **Generating short-term wins**
   - planning for visible improvements in performance, or "wins";
   - creating those wins; and
   - visibly recognizing and rewarding people who made wins possible.
7. **Consolidating gains and producing more change**
   - using increased credibility to change systems, structures, and policies that don't fit together and don't fit the vision;
   - hiring, promoting, and developing people who can implement the change vision; and
   - develop people and projects to carry on the change vision throughout the organization.
8. **Anchoring new approaches in the culture**
   - creating better performance through customer- and productivity-oriented behaviour, more and better leadership, and more effective leadership;
   - articulating the connections between new behaviours and organizational success; and
   - developing means to ensure leadership development and succession.

Cochran, Ferrari and Arnett (2014) also pointed out that changes may be introduced in RAS organization as part of broader initiatives (e.g. Workforce Preparation Initiative). These initiatives, which focus, integrate and systematize efforts, after achieved their results may become institutionalized within the organization. In other cases changes are introduced as proper change process initiatives and they are leaded and facilitated by change teams.

Sources:

Kotter. J. 1996. *Leading change.* Boston, Harvard Business School Press.

Cochran. G.R., Ferrari. Th.M. & Arnett. N. 2014. Using an Initiative to Focus Programming Efforts: A Case Study of the Ohio 4-H Workforce Preparation Initiative. *Journal of Extension*, June 2014, Volume 52 (3). (also available at: http://www.joe.org/joe/2014june/a8.php).

TOOL 11.3: CHECKLIST FOR INFORMATION GATHERING IN THE SITUATION ANALYSIS

This list is intended to serve as an example only. It has to be adapted and used selectively in relation to specific purposes and situations.

1. Subject of survey: project environment

- **Basic physical and demographic data**
  - geo-climatic conditions and their change over time;
  - population, settlement, ethnic groups, local languages, migration patterns, distance to markets and administrative units;
  - soil qualities, land use and natural resource management;
  - production methods, means of production and their origin; and
  - transport, communication, schools and health care infrastructure type and structure of employment.
- **Production and income generation**
  - production factors: soil, climate, water, seed, fertilizer, draught animals, tools, fuel, electricity, labor, etc.;
  - economic factors: transport, storage, processing and marketing, credit, prices, interest rates, inflation, levies and taxes;
  - social and institutional factors: ownerships and land tenure conditions, farm size structure of labor, organization of activities in the household and on the farm, multi- farm cooperation, labor obligations and prohibitions, division of labor on the basis of gender and age;
  - organizational factors: cooperatives, service institutions, general administration, education and level of training; and
  - on-farm and off-farm sources of income: sale of farm products, migrant labor, seasonal wage labor, sale of non- agricultural products and of artisan work.
- **The use of Products**
  - crops are used for: food, fuel, fiber, cash, animal feed, subsistence, sale at markets, social obligations, storage, seed; and
  - use of cash income: consumer goods and food, house building, bride price, investment in agriculture, capital assets, taxes, education, health care.

2. Subject of survey: dynamics of the social system

- **Level of know-how in the client groups**
  - technical knowledge of plant and animal production: soil, plant breeding, etc.;
  - economic know-how: elasticity of production, labor input, farm organization, credit, etc.;
  - knowledge of politics: agricultural policy, influence of the administration in general, influence and power structure of formal and informal leaders; and
  - general level of education: literacy. Formal and informal socialization, learning processes.
- **Social structure and decision- making behaviour**
  - family structure: roles, obligations, participation in certain activities;
  - family relationship and friendships: mutual dependence and help, hierarchies, communal work, etc.; and
  - social structure in larger units (villages): kinship, group formation, influential individuals, systems of values and norms, etc.
- **Socio-cultural characteristics**
  - aspects of life influences by religion: production methods, cropping systems, land use, etc.;
  - traditional and modern laws: process for conflict solving;
  - system of values: "decent" behavior, dealing with things in the " right" way, etc.;
  - ideas about cause and effect relations (see also: level of know-how); and
  - certain behavior patterns rooted in the social systems, and their sphere of influence, validity for persons of the client group, sanctions, alternatives, degree of tolerance, etc.
- **Structures of communication and the spread of innovations**
  - informal channels of communication: meeting places, gatherings, markets, migrant labor;
  - formal communication channels: newspapers, magazines, brochures, Internet, radio, folk groups, etc.; and
  - spread of innovations: innovations already adopted, inhibiting and driving forces, effects on social and economic processes, etc.

3. Subject of survey: project organization

- Methods of financing: microeconomic and macroeconomic, credit, etc.
- Composition of the project: establishing independent research and extension departments, media departments, etc.
- Structure of the organization: relation to the client groups, management, guidelines for decision making, areas of responsibility and communication within the organization, planning procedures, etc.

- Equipment and staff: the personnel required, materials, buildings etc.
- Integration in existing organizations: changes in organizational structure, intervention in existing areas of responsibility, etc.

4. Subject of survey: complementary institutions

- Research and training: applicability of research in the locality, relevance to small farmer's systems, qualifications of trained staff, motivation to work in the agricultural sector, etc.
- Farmers' associations: cooperatives or self-help organizations or informal groupings.
- Marketing facilities: capable of handling the produce of small farmers, small quantities, poor infrastructure, etc.
- Credit: traditional saving groups, rotating credit systems, bank finance, etc., and their appropriateness for small farms
- Administrative/political institutions: participation in setting the aims and implementing the project; willingness to cooperate, financial and personnel/material support, cooperation with the client groups, etc.

5. Subject of Survey: participation

- The extent to which the client groups or sub-groups can be reached and mobilized: communication channels, how to address them (dialects, level of education, behavior of advisers, etc.).
- Risk situation of the client groups: dependence on physical (climate, pests, disease) or social factors (landlords, traders, etc.).
- Specific obstacles for client groups: political or social barriers, economic barriers, motivation and level of know- how.
- Social and political ability to articulate their own interests and problems.,
- Willingness and ability of participating organizations to involve client groups: methods of participation, schedules and locations, areas of responsibility, etc.

6. Subject of Survey: client groups' scope for action

- The connection between the whole process (the content of extension and measures) and the social and individual abilities of the client groups
- Ecological compatibility: the possibility of integrating innovations in traditional cropping systems, the reliability of recommendations.
- Socio-cultural suitability: benefit to the client groups, increasing their ability to take action, reduction of constraints, relative freedom from conflict, etc.
- Political and legal acceptability: land tenure system, autonomy of the relevant groups, etc.
- Link with traditional forms of organization: extended family groups, mutual neighborhood help, etc.
- Taking account of all members of all the client groups: women, men, young people, etc.
- Effects on sub-groups and other associations in the existing social system.

COMPILED BY: Rolf Sulzer and Gerhard Payr

Source

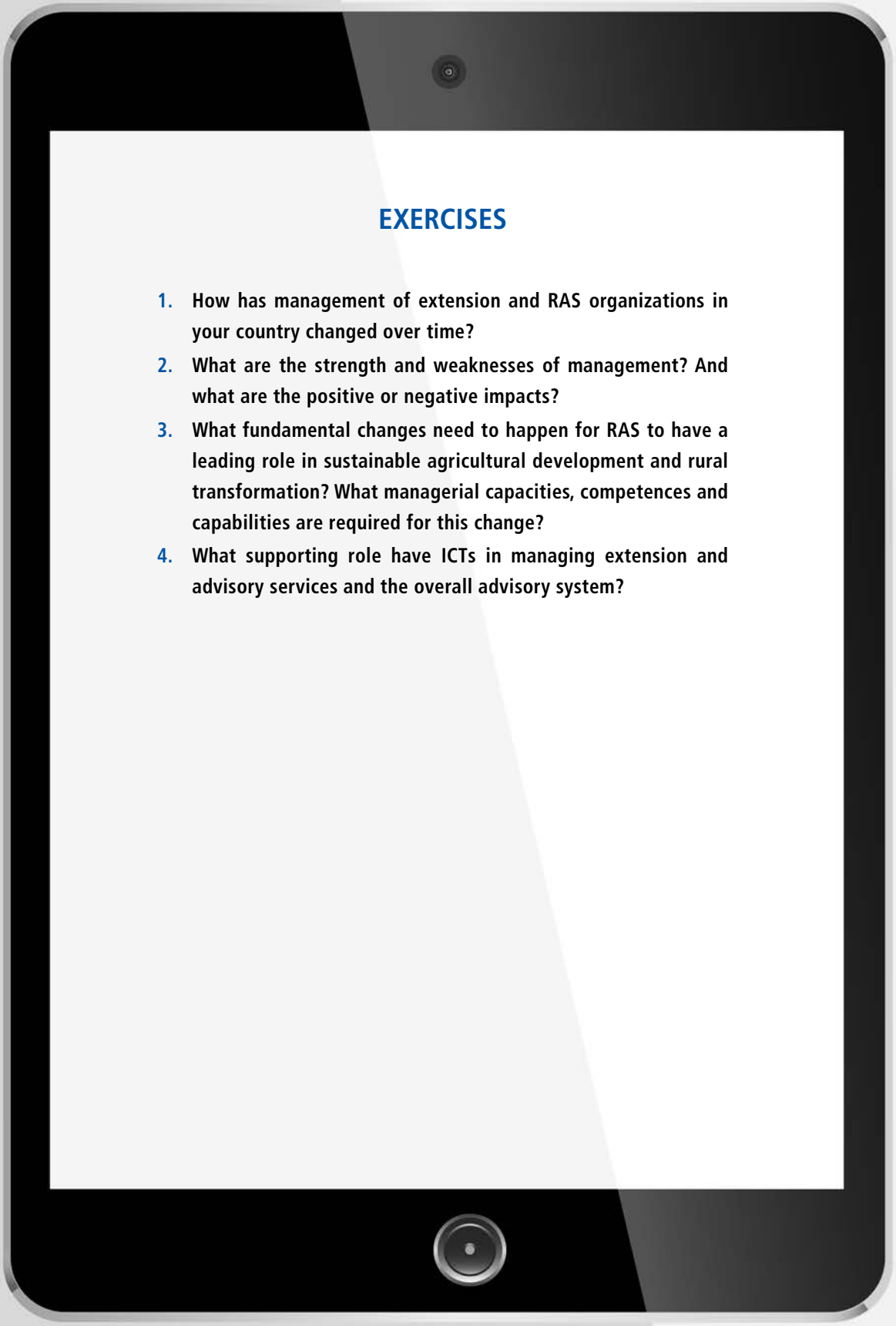
Hoffmann. V., Gerster-Bentaya. M., Christinck. A. & Lemma. M. 2009. *Rural Extension. Volume 2 – Examples and Background Material*. Weikersheim, Germany. Margraf Publishers.

TOOL 11.4: PRIORITY SETTING FOR RAS

A priority setting tool that can be used with stakeholders to determine priorities for the RAS services

POTENTIAL POLICY PRIORITIES FOR AGRICULTURAL AND RURAL EXTENSION SERVICES [SPECIFY: NATIONAL/REGIONAL/AGRICULTURAL/INDUSTRY FOCUS]	PRIORITY RATING 1 = LOW; 10 = HIGH
Poverty alleviation – working with NGOs to provide information and facilitative support to individuals and communities, so that they can break out of the poverty cycle and develop new enterprises.	
Reaching vulnerable groups – providing targeted support for building capacity in women, youth or disadvantaged groups to enable them to better thrive within the broader community.	
Maximizing productivity and economic benefits – providing technical and business information and support to farms and rural business to allow them to maximize output and efficiency, and thus returns	
Ensuring biosecurity – raising awareness of the need for bio-security, regulations and guidelines and how people can protect the nation and its industries and environment.	
Adapting to climate change – working with communities and industries to understand ways to better manage climate variability and put in place means of addressing and adapting to longer term climate change.	
Protecting the environment – ensuring that people have the awareness, knowledge and motivation to minimize environmental damage and protect biodiversity.	
Developing value chains – working with stakeholders from across the value chain, including farmers, agribusiness, NGOs, and processing and marketing organizations to ensure maximum efficiencies and benefits to each sector and the broader community.	

Source: **Secretariat of the Pacific Community (SPC).** 2010. Developing a Policy Framework for Extension Systems. Policy Brief No 12. Prepared by SPC on behalf of the Pacific Agricultural and Forestry Policy Network (PAFPNet). (also available at: http://lrd.spc.int/pardi-publications/cat_view/137-all/136-pafpnet/286-policy-brief).



EXERCISES

1. How has management of extension and RAS organizations in your country changed over time?
2. What are the strength and weaknesses of management? And what are the positive or negative impacts?
3. What fundamental changes need to happen for RAS to have a leading role in sustainable agricultural development and rural transformation? What managerial capacities, competences and capabilities are required for this change?
4. What supporting role have ICTs in managing extension and advisory services and the overall advisory system?

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MODULE 12: RAS in AIS

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OBJECTIVES

1. to discuss the Agricultural Innovation Systems (AIS) conceptual framework;
2. to examine insights from an innovation concept for extension reform;
3. to understand the different roles of Rural advisory Systems (RAS) within AIS; and
4. to assess the experiences from AIS and challenges that need to be addressed.

INTRODUCTION

When and if the decision is made to reform agricultural extension, a government confronts significant policy and strategy choices. Whether the government decides to withdraw from, or to continue to provide advisory services, it will nonetheless be called upon to:

- foster the advancement of information, knowledge and technologies through advisory systems (whether public, private or pluralistic);
- coordinate agricultural and rural development organizations, including knowledge systems; and
- promote AIS – all with a view to contributing to sustainable agricultural development, including the growth, and more particularly to the effectiveness, of the agricultural and RAS.

Though originally developed to understand industrial innovation, the innovation systems framework has been increasingly used to understand the process of knowledge generation and use in agriculture. Extension and advisory services are integral to AIS.

Recent discussions on applying the innovation systems framework in agriculture seem to offer RAS services a new option to widen its agenda, from being a narrow technology transfer agency to a "bridging" organization, linking the different elements of knowledge held by different actors. It also recognizes the pluralistic nature of RAS, which currently comprises varied actors from public, private, NGOs and producer organizations that offer different types of support and services, all of which contribute to and are critical for innovation.

This module starts with the conceptual framework of the AIS and reviews the role of different actors, including RAS, in the AIS. This is followed by a discussion on the role of Government in AIS. The module then discusses the implications of AIS for extension reforms, and how capacities at different levels could be enhanced to promote an AIS that functions well. Thereafter, strengths and weaknesses of the AIS framework are discussed.

DEFINITIONS

Agricultural Innovation Systems (AIS)

The World Bank defines an innovation system as:

> *"…a network of organizations, enterprises and individuals focused on bringing new products, new processes and new forms of organization into economic use, together with the institutions and policies that affect their behaviour and performance. The innovation systems concept embraces not only the science suppliers but the totality and interaction of actors involved in innovation. It extends beyond the creation of knowledge to encompass the factors affecting demand for and use of knowledge in novel and useful ways."* (World Bank, 2006: vi-vii).

Innovation

Agricultural innovation is the process whereby individuals or organizations bring new or existing products, processes or ways of organization into use for the first time in a specific context in order to increase effectiveness, competitiveness, environmental sustainability or resilience to shocks, and thereby contribute to food security and nutrition, economic development or sustainable natural resource management (FAO, 2018).

Capacity

The ability of people, organizations and society as a whole to manage their affairs successfully (OECD, in TAP, 2016b).

Capacity development

This is the process by which individuals, groups and organizations, institutions and countries develop, enhance and organize their systems, resources and knowledge; all reflected in their abilities, individually and collectively, to perform functions, solve problems and achieve objectives (OECD, 2006).

DISCUSSION

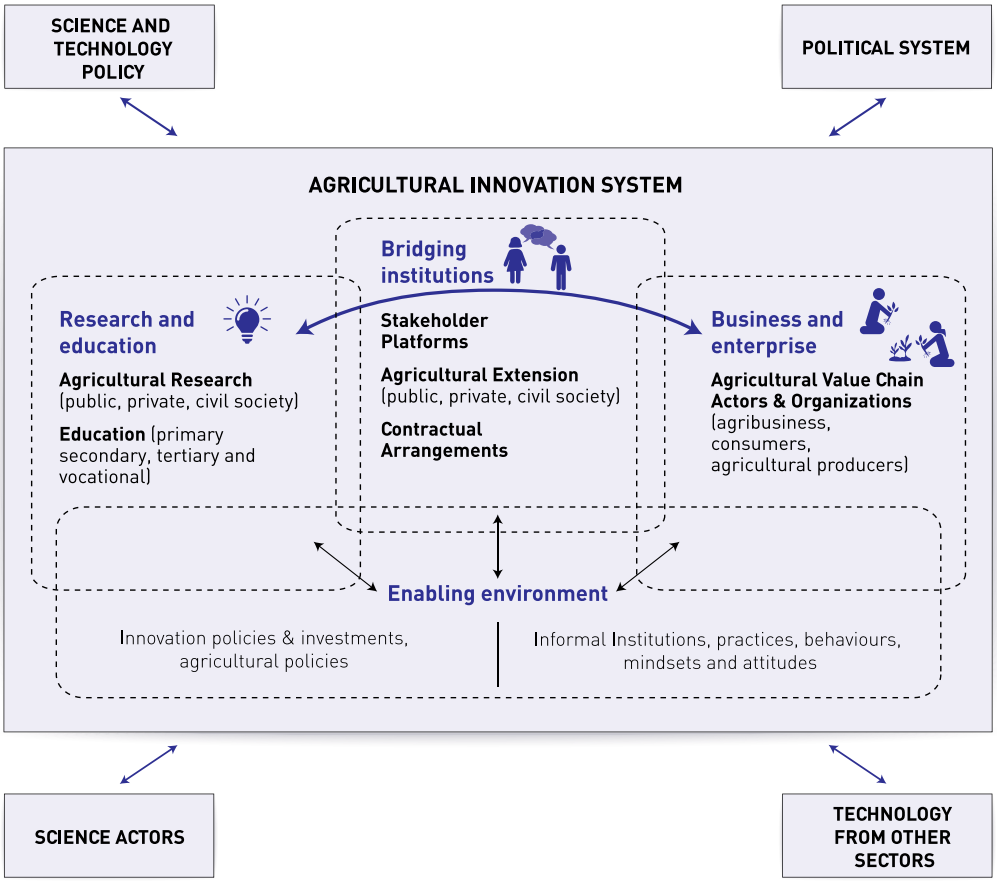
Conceptual frameworks of AIS

An agricultural innovation system (AIS) is a framework to help understand how the process of agricultural and rural innovation takes place, and how to move it forward. As opposed to linear technology-oriented approaches (such as the linear research–extension–farmer approach), AIS recognizes innovation as a process that results from a complex, multi-stakeholder process of interaction among actors in a system. Under the AIS framework, innovation is not merely concerned with technical innovation (e.g. adoption of a better cultivar), but looks at innovation holistically. It includes, among other aspects, organizational innovation (e.g. organization of farmers; or developing horizontal collaboration within and among institutions); and institutional innovation (e.g. addressing through policy changes uncertainties in land access).

> *"Conceptually, the AIS comprises four components: research and education; business and enterprise, including smallholder farmers; bridging institutions such as stakeholder platforms and advisory services; and the enabling environment, consisting of policies, practices, mindsets and attitudes. Innovation, in order to take off, requires the right mix of different actors, social mechanisms and policies. As an endogenous process, it cannot rely solely on spin-off from foreign research, but needs local capacities to generate knowledge and develop new technologies and business processes"* (TAP, 2016c).

Over the past few years, the AIS framework has become increasingly popular as a framework to analyse and explore solutions to complex agricultural and rural problems. Donors and national governments currently recognize the importance of enhancing capacity of all actors in the AIS rather than just research or advisory services. This arises from the realization that neither research knowledge nor advisory activities alone drive innovation. There is greater emphasis on investing in strengthening the capacity to innovate or the process through which different types of knowledge are combined to address specific issues (Hall, Sulaiman and Bezkorowajnyj, 2008).

FIGURE 12.1: Conceptual diagram o an Agricultural Innovation Systems



Source: Tapipedia website: https://tapipedia.org/framework/conceptual-diagram-agricultural-innovation-system

The AIS framework recognizes innovation as an interactive process. Central to the process are the *interactions* of different actors, their ideas and different perspectives; the *institutions* (the attitudes, habits, rules, laws, norms, practices, and ways of working) that shape how individuals and organizations interact; and *learning* as a means of evolving new arrangements specific to local contexts. While interaction among the actors within the innovation system is critical for innovation, several institutional and policy barriers generally constrain effective collaboration and knowledge flows among these different actors. Advocating for changes in institutions, organizations and policies is therefore critical for innovation. In other words, innovation requires the enabling of a combination of technological, organizational, institutional and policy changes.

Though research, education and RAS are key components of AIS, these are usually not sufficient to bring knowledge, technologies and services to farmers and entrepreneurs (World Bank, 2012). The idea of the AIS highlights the importance of a large number of other actors possessing different types of knowledge, experiences and perspectives (e.g. farmers and industry associations, market intermediaries, consumer groups, policy-makers, certifying agencies, credit and input suppliers, etc.) and their effective interactions for innovation.

The process of interaction usually needs to be facilitated, as actors often need an initial push or opportunity to break barriers that prevent joint discussion, sharing, decision-making, action, and learning. Innovation arises in a particular socio-economic context and is shaped by the presence or absence of favourable conditions in which it can thrive; therefore, understanding this context is important to facilitate and induce innovation.

The operational relevance of the AIS approach is sometimes questioned, compared with previous investment approaches, i.e. National Agricultural Research Systems (NARS) and Agricultural Knowledge and Information Systems (AKIS). While the AIS approach builds on the NARS and AKIS approaches, it has distinct new areas of enhancing capacities and investments for innovation. These distinct 'new' areas include: (i) emphasis on joint action, i.e. organization of

stakeholders at diverse levels; (ii) enhancing interaction, learning and knowledge flow within organizations and across organizations and sectors; (iii) a focus on outcomes, i.e. putting ideas to use; (iv) inclusion of the private sector as a significant player and innovator, requiring improved innovation capacity and incentives for all actors; (v) coordinated investments to strengthen enabling factors. Table 12.1 summarizes the five main areas in which AIS distinguishes and clearly provides new ways of promoting innovation.

TABLE 12.1: The Main Additional Areas in which to Invest with the Agricultural Innovation Systems (AIS) Approach compared with strengthening National Research Systems (NARS) or building Agriculture Knowledge Information Systems (AKIS).

FOCUS INVESTMENT OR ACTIVITY	EXAMPLES
Joint action among stakeholders	• Demonstrations; • National innovation committees or council; • industry-agribusiness-(sub-)sector-level associations; • coordination committees or boards; and • producer organizations.
Enhancing interaction, learning and **knowledge flow**	• Information venues such as annual consultation and knowledge sharing workshops; • stakeholder platforms (consultative, planning/ or integrative); • virtual platforms, web interface; • sector or industry networks; and • knowledge brokers with appropriate skills and tools.
Focus on **outcomes**	• Technology transfer units, technology fairs; • pilot trials of new technologies and practices in partnership; • training for professional skills, market understanding, entrepreneurship, intellectual property rights (IPR); • technology incubators; and • technology foundations for transfer and commercialization.
Private sector role as a significant player and innovator	• Innovation funds, incubators, match-making services, etc.; • lower transaction costs – organization of actors; • training, internship programmes, university-industry curricula; and • units for special services and communication.
Coordinated investments in **enabling factors**	• Infrastructure, market development, financial services; and • regulatory issues such as IPR; standards, etc.

Source: Rajalahti, 2009.

The final outcome of investing in AIS should be strengthening of the capacity for innovation, which means enhancing the ability of people and organizations to create, organize and use knowledge for innovation.

> *"In the diffusion of innovations approach (also known as Transfer of Technology), the main element to scale is the application of a technology. The Farming Systems Research approach aims to scale packages (of mixed technologies and practices) for specific recommendation domains. In contrast, an AIS approach looks to scale learning processes for technological and institutional changes. Lessons on how to facilitate functional multi-stakeholder networks, in specific contexts, have become a distinctive element of AIS. This means that the approaches scaled concern how to foster these learning processes. In this way, scaling is more focused on the process of increasing access to interventions and products, rather than on the interventions or products that are to be scaled."* (Wigboldus *et al.*, 2017).

The roles of different actors in AIS

With its emphasis on the interaction and collaboration among multiple actors, AIS thinking aims to understand the contribution (both knowledge and skills) of different actors, and the quality of interactions among them. While conventional actors – such as research and extension – do play important roles in an agricultural innovation process, their services have to be considered in relation to the roles of other actors (Gildemacher and Wongtschowski, 2015). This view encourages pluralistic service provisions, where roles of different actors are negotiated and evolve over time based on comparative advantages – qualifications, skills and competencies – that different actors have in a given context. (Table 12.2).

TABLE 12.2: Potential roles of different actors in AIS.

ACTORS	ROLES IN AIS
Farmer/Farm Familiy	• Users of knowledge to create, test and adapt new technologies to field conditions. • Apply and suggest innovative products and practices to increase agricultural productivity and market accesses.
Farmer Organizations (including commodity networks and platforms)	• Represent farmers (interests, needs, opportunities) in value chains and the community and policy arenas. • Brokerage of knowledge and technology between farmers and other actors. • Facilitating access to agricultural inputs, credit and markets. • Helping organize value chain. • Promoting specific innovation through collaborative research and organizing logistic support.
Advisory Services (private, nongovernmental and public)	• Brokerage of knowledge between farmers and other actors. • Making new technology and practices available to farmers and other actors. • Forging networks, and supporting organization of producers. • Facilitating access to credit, inputs and outputs services. • Promoting equitable participation – especially disadvantaged people such as rural women, smallholders.
Agro-dealers (input suppliers and processing)	• Providing (new) agricultural inputs and output markets. • Identifying, piloting and mainstreaming new market opportunities. • Defining quality standards of agricultural products. • Facilitating investment in physical and human resources for product and process development. • Linking agricultural actors to rest of the market.
Tertiary education institutes	• Improving general education level of all actors. • Education and training of professionals in the agricultural sector. • Development of better knowledge and associated skills for farmers and other actors. • Facilitating investment in human resources for process and product development. • Developing approaches and methods of experiential and multi-actor learning.
Researchers (public, nongovernmental, private & universities)	• Developing and improving technologies, practices, and processes relevant to local/regional/national contexts. • (Joint) testing of locally developed (indigenous) technologies and processes. • Documenting the ways new practices and technologies are adapted and further innovated with 9for both man women, poor and rich), to feed into other agricultural research efforts and policy decisions. • Cooperating with researchers of other countries/international organizations.
Policy makers	• Providing strategic orientation for the AIS. • Formulate, implement and enforce strategies, policies and regulations. • Allocate resources for research and human resources development. • Provide incentives to innovate and collaborate. • Enabling networks and partnerships.
Consumer organizations	• Influence research priorities and innovation practices. • Facilitate consumer acceptance. • Facilitating and brokering information of new products and processes.

Source: Based on Gildemacher and Wongtschowski, 2015; Sulaiman and Davis, 2012; World Bank, 2012.

ROLE OF GOVERNMENT IN AIS

Successful adoption of AIS in most countries will certainly require commitment and support not only from agriculture ministries, but also, more importantly, from the highest government leadership and other ministries that also handle issues of agricultural research and innovation (SEARCA, 2016). Given all these considerations, national governments can play a crucial role in sparking or spurring agricultural innovation by reducing risks, collaborating with the private sector to promote and foster innovation and by using standards or regulations to guide and encourage it. As Hartwich and Jansen (2007:7) note

> *"governance in innovation systems is less about executing research and administering extension services, and has more to do with guiding diverse actors involved in complex innovation processes through the rules and incentives that foster the creation, application, and diffusion of knowledge and*

technologies. The role the government plays in fostering agricultural innovation depends on institutional regulations; the strength, weaknesses, and motivation of the actors who contribute to innovation; and the style of governance".

That same study showed that the main constraints for the Bolivian government to have a prominent role in steering innovation were weak leadership, limited commitment (rather than the decentralized structural setting), limited policy-analysis and strategic-planning capacities, and limited capacity to see the big picture. The same also holds true for RAS (see the next section on AIS and RAS). Hartwich and Jensen added (2007:7):

"the government needs to actively establish priorities, assure that others participate, guarantee transparency and accountability, maintain responsiveness to the demands of users, focus on impact, delegate administrative responsibilities to local agencies that are closer to the farmers, strengthen linkages among the various innovating agents, and provide a strategic vision".

"Moving to an AIS perspective calls for governments to commit to setting policies in a more horizontal way, recognizing not only inter-sectoral issues, but also the vertical links existing in the value chains and affecting the different actors' individual and collective creativity and in the end, innovative performance" (OECD, 2013). This new perspective also calls for:

"a paradigm shift not only in the way agricultural research contributes to development results through connecting multiple actors in the agri-food systems, promoting joint knowledge creation, sharing and learning and concomitant changes in the institutional and policy setting, it calls for innovative and systems-oriented approaches to capacity development to enable this shift" (TAP, 2015).

INSIGHTS FROM INNOVATION THINKING TO REFORM EXTENSION

Rural Advisory Services (RAS) are integral to the AIS. The AIS framework offers three potential insights on reforming RAS:

Firstly, it allows the role and organization of *RAS to be understood as part of a wider canvas of actors, processes, institutions and policies* that are critical for innovation. As RAS is only one of the major actors in the AIS, its comparative advantage lies in its transformation to become a "bridging" organization, linking the different elements of knowledge held by different actors, and facilitating its application and use, thereby leading to innovation. This essentially means it has to interact and partner with a wide range of organizations dealing not only with markets, policy, financing, etc., but also with increasingly diverse sources of knowledge.

Secondly, it forces RAS *to change its approaches and expand its functions* beyond dissemination of information and technologies, raising awareness and training. The experience suggests these kinds of traditional extension tasks have value only when bundled together with other innovation management tasks such as development of networks, organizing producers, communicating research needs, mediating conflicts, facilitating access to inputs and output services, convening RAS and innovation platforms, advocacy for policy change and other negotiated changes in practice and action (Table 12.3). Collectively these have been referred to as innovation management tasks (Sulaiman *et al.*, 2010).

TABLE 12.3: Innovation management tasks observed in Research Into Use (RIU) Asia projects

FUNCTIONS	ACTIONS	TOOLS
• Networking and partnership-building • Setting up and strengthening user groups • Training • Advocacy for institutional and policy change • Enhancing access to technology, expertise, markets, credit, and inputs • Reflective learning	• Convening • Brokering • Facilitating • Coaching • Advocating • Disseminating information • Mediating	• Grain cash seed bank • Community-based seed producer groups • Community-based user groups • Producer companies • NGO-led private companies • Market-chain analysis • Market planning committees • Community germplasm orchards • Village crop fairs • Food-processing parks • Use of lead entrepreneurs

Source: Sulaiman *et al.*, 2010.

Thirdly, the innovation systems framework emphasizes the need for *promoting learning-based strategies to design locally-relevant arrangements*. Till recently, most extension programmes were designed at the national or state level, and were implemented as targets to be achieved. Therefore, staff at the lower level had almost no freedom to

experiment with locally-relevant strategies, or to reply to demands expressed by producers and to learn from these experiences.

However, the situation is changing now, towards RAS playing a wider role and experimenting and identifying locally-relevant strategies. Therefore, RAS needs new capacities at different levels (enabling environment, organizational and individual levels). Reforms should ideally target the whole range of actors concerned with the challenge at stake, and focus on ways of enhancing their capacity to deal with a changing environment, rather than tinkering with internal reforms within any one organization within the AIS, including RAS. In other words, emergence of an effective and efficient AIS depends on the enhanced capacity of all actors in the AIS to contribute towards knowledge flows and interaction among all the actors, and therefore capacity strengthening of all actors to innovate is important.

CAPACITY DEVELOPMENT FOR AGRICULTURAL INNOVATION SYSTEMS (AIS)

Capacity development (CD) is necessary to enhance interaction, build trust and create synergy between research institutions and public and private sector actors, support services, smallholder farmers and development organizations, to enable them to address a whole range of challenges, investments and policies and avail of opportunities to make change happen. The FAO-TAP Common Framework recognizes three dimensions of Capacity Development – enabling environment, organizations and individuals (as articulated in the FAO's Corporate Capacity development framework) – which must be viewed as interconnected and addressed concurrently. Particular importance is given to partnerships and networks, i.e. bringing together organizations and individuals to co-create new knowledge. Here RAS has a prominent role with its bridging and brokering function. However, participants of an FAO e-conference had the opinion that the existing advisors did not provide this role, and that the role could also be taken by other innovation actors. In fact, brokering might involve a network of individuals with different roles, rather than a single individual organization. Acquiring brokering competencies to perform these tasks is essential (Blum, 2012).

Capacity Development for bolstering the enabling environment

An enabling environment that promotes interactions and knowledge flows among different actors in AIS is important for innovation, and enhancing capacities at this level needs attention. The concept of enabling environment includes "intangible" or informal components such as social conventions, values and beliefs, as well as "tangible" aspects to do with governance, formal rules and regulations, and policy aspects.

Enhancing capacity across the system involves fostering interaction between organizations in the AIS, and building trust between them. In concrete terms, this means seeking and promoting effective coordination with organizations and individuals whose decisions and policies shape the way they relate to and interact with each other. This would require building incentives and political commitment.

Three main clusters of AIS enabling factors can be identified (TAP, 2016c):

1. agricultural and rural policies aimed at improving infrastructure, credit, and markets;
2. innovation policy and corresponding governance structures, providing vision and priorities, and linking AIS to the general knowledge infrastructure; and
3. framework conditions, which includes all the macro rules and regulations that define the country's business environment, guide resource allocation and drive production decisions.

Jansen and Wartenberg (2012) noted that:

"in 2009, Chile's Ministry of Agriculture commissioned the World Bank to identify the long-term changes required for its AIS to be more effective. The World Bank collaborated with Chile's Foundation for Agricultural Innovation (FIAS) to design a participatory process combining analysis of major trends with input from opinion leaders, sector representatives and others. The project had two interlinked objectives. The first objective was to identify the main opportunities and challenges that Chile needs to address if it wishes to reinvigorate agricultural growth and propose a vision for Chilean Agriculture toward 2030. The second objective was to identify the adjustments required for AIS to contribute effectively to realizing this vision. The project team followed a 2-step process to achieve these objectives:

- **Developing scenarios and building the vision**: This involved undertaking four driver studies to identify key trends and driving forces of change, collecting information on seven sub-sectors, interviewing opinion leaders from the public, private and academic sectors, together with civil society actors, identifying important elements of the Vision 2030, organizing a scenario building workshop and further development and validation of scenarios with other experts and peer reviewers.

- **Action planning and dissemination of results**: This involved development of the action plan and sharing it through presentations, press release and web publishing. Feedback from these events concluded the process and initiated the preparation of budget proposals.

The Capacity Development for Agricultural Innovation Systems (CDAIS) project is an example of a global partnership on capacity development for agricultural innovation systems. CDAIS is a partnership between Agrinatura, a consortium of 31 European universities and research institutes, and the Food and Agriculture Organization of the United Nations (FAO). Launched in 2015, the overall objective of CDAIS is to make agricultural innovation systems more efficient and sustainable in meeting the demands of farmers, agri-business and consumers. CDAIS operates in eight pilot countries, in Africa, Asia and Latin America. The capacity development interventions in these eight countries are demand-driven and integrate development of organizational capacities and individual competencies with policy dialogues.

At the national level, CDAIS uses continuous learning cycles to improve the functional capacities for innovation in Africa, Asia and Central America. In the eight pilot countries, CDAIS brings together key partners and actors to address jointly identified challenges and opportunities in specific regions or value chains. Together with, international, national and local partners, they come together to develop and implement capacity development plans for agricultural innovation.

At the global level, CDAIS provides support to the Tropical Agriculture Platform (TAP) to review knowledge on capacity development for AIS, and consolidates concepts and approaches into a common framework. This is used to assess and improve the innovation capacities of institutions and individuals, and is enhanced through continual feedback through lessons learned from national and local actions. (TAP, 2018).

Innovation Platforms

Innovation Platforms are increasingly being proposed in agricultural research for development projects and programmes since they provide space for farmers, agricultural service providers, researchers, private sector actors and other stakeholders to jointly identify, analyse and overcome constraints to agricultural development (Schut *et al.*, 2017).

The interest in innovation platforms emerged from the innovation systems thinking that stakeholders can generate innovation by combining their indigenous knowledge, business interests and organizational skills. Several such platforms were set up in Africa under the aegis of the Forum for Agricultural Research in Africa (FARA) during the past few years as part of the Integrated Agricultural Research for Development programme. Innovation Platforms were also tried under the Research Into Use (RIU) programmes in Africa (Gildemacher and Mur, 2012).

Recent studies from sub-Saharan Africa have shown that multi-stakeholder platforms contribute to enhancing agriculture innovation, and even to livelihood improvement (Nederlof *et al.*, 2011). To succeed, Innovation Platforms require ownership, commitment and trust. Nederlof *et al.* (2011) noted that there are three main factors that frequently lead to the disintegration of established innovation platforms: lack of funding; irreconcilable conflicts among partners; and unfavourable changes in the institutional and political context. Innovation Platforms need facilitation, but the competency required for this facilitation role is scarce and in many cases investors are unwilling to fund development of this crucial role. There is a need to develop capacities for interaction, especially in situations where stakeholders are used to work on their own. Public support for organizations playing facilitation and brokering functions is therefore critical for the success of innovation platforms. Though there is a lot of interest in innovation platforms in Agricultural Research for Development (AR4D) projects led by researchers, this has not been an important strategy in extension practice. However, pluralistic RAS providers are increasingly becoming organized as country forums in countries under the regional networks of the Global Forum for Rural Advisory Services (GFRAS), and this is an encouraging development.

Recent years have also witnessed greater interest in investing in innovation brokering. Any advisory service or related individual or organization can broker, connecting farmers to different service providers and other actors in the agricultural food chain. A broad range of specialized innovation brokers has emerged in the Netherlands (Klerx and Leeuwis, 2009), Kenya and India. It should be noted here that most of these examples are from outside the public sector RAS. Though the role of innovation brokering expands the role of agricultural extension from that of a one-on-one intermediary between research and farmers to that of an intermediary that creates and facilitates many-to-many relationships, many participants retain a linear, transfer-of-technology mindset, and lack the capacity to fulfil this role (Rivera and Sulaiman, 2009).

Experiences to date, and challenges

Research and analysis of agricultural innovation processes and policies over the last 20 years has made a major contribution to scholarship on and the understanding of the nature of innovation (Hall, 2017). Despite the recent development and application of a variety of methods that can support AIS analyses, the potential of the AIS approach to address complex agricultural problems remains underutilized in many fields of study (Schut *et al.*, 2015).

Evidence from experiences with promoting innovation platforms shows that it can be used by advisory services and other actors as a means to bring different actors together to discuss and negotiate collective or coordinated action. However, innovation platforms will not lead to immediate and direct impact as such, as their contribution is supporting people to talk to each other and to act together towards putting new ideas and solutions into practice. Often, the benefits from working with innovation platforms are found elsewhere than originally planned, reflecting their dynamic nature. The main potential of innovation platforms is to achieve changes in the behaviour of the platform members, which has the potential for achieving large tangible impacts in the long term (Posthumus and Wongtschowski, 2014).

> *"Those putting AIS approaches into practice appear to have largely failed to convince primary donors of its robustness in supporting development efforts and contributing to making a difference at scale. Rather than continuing to advocate AIS approaches and blaming conditions for limiting AIS potential, work needs to be done to better articulate AIS-related theories of change, which includes articulating how AIS principles and practices can support the capacity to innovate and achieve inclusive impact at scale. This will need to include the development of practical decision-making support tools in the same field. Conditions for working from an integrative perspective, which is the strength of AIS, will remain challenging, but rather than putting greater effort into convincing the, as yet, unconvinced, work should focus on upgrading and extending the utility of AIS thinking and practice"* (Wigboldus *et al.*, 2017).

STRENGTHS AND WEAKNESSES OF AIS

Sulaiman (2015) has identified the following strengths and weaknesses of AIS.

Strengths

- AIS explicitly recognizes the complementary knowledge and expertise held by different actors and the importance of combining different types of knowledge (technical, institutional, policy, etc.) through facilitated interactions, for innovation to happen.
- AIS highlights the existence and importance of several types of innovation processes and the importance of institutional and policy changes that facilitate innovation processes.
- For RAS, the application of AIS is helping them to widen their role from an agency for technology delivery, to that of an enabler of innovation processes.
- The AIS framework presents and recognizes a diversity of approaches to be experimented and adapted for innovation, but it is not a blueprint for organizing innovation in agriculture, even though it is often considered as such.
- There has been a tendency to "cherry pick" innovation system ideas such as innovation platforms, public–private partnerships, etc., and to apply the concept to existing transfer of technology type of initiatives, without considering the process character, institutional and policy reforms and learning and capacity development ideas inherent to the AIS framework.
- Competencies needed for facilitating interactions among different actors within AIS are often scarce and many funders are unwilling to invest in such intangible capacity development efforts, which yield impact least in the short term, but more over the medium or long term.
- In general, functional skills for managing innovations – such as facilitation, brokering and relationship building – are scarce and there are not enough professionals who can coach those interested in piloting and learning from AIS approaches.
- While AIS should focus on scaling up all types of knowledge from varied actors, including indigenous and local knowledge, there has been a tendency to focus only on research-derived knowledge.

POTENTIAL IMPACT

While there is an increasing appreciation of the AIS framework, and many organizations are interested in using it, there is little progress on using these ideas holistically to reform agricultural innovation arrangements. Governments can play an important role in creating enabling conditions for agricultural innovation through coordination, promoting horizontal and interactive working approaches, strengthening knowledge management, and creating networks for managing partnerships (IICA, 2014). As the focus of AIS is on accelerating institutional and policy changes that enhance the capacity for innovation, the impact of AIS has to be ideally evaluated based on these changes.

Research is in progress on understanding and attributing the impact of AIS. Though there are many ways to monitor and evaluate the impact of these changes, capacities to experiment with interventions and monitor, evaluate, and learn from the results of these experiments have to be built among the actors in the AIS (Sulaiman, 2015).

The FAO International Symposium on "Agricultural Innovation for Family Farmers: Unlocking the potential of agricultural innovation to achieve the Sustainable Development Goals" (Rome, 21-23 October 2018. Website: http://www.fao.org/about/meetings/agricultural-innovation-family-farmers-symposium/en/) highlighted several principles to further strengthen AIS. These include:

1. Innovation requires long-term commitment by different actors.
2. Assessment of agricultural innovation systems (national and sub-national) is required.
3. Innovative partnerships are needed to accelerate transformation of agricultural innovation systems.
4. It is necessary to recognize the diversity of family farmers and their different needs in different contexts for the scaling up of innovation.
5. Scaling up of innovation requires partnerships and digital technologies.
6. Demand-driven innovation processes are required.
7. Inclusiveness is essential for effective innovation (e.g. gender, youth, indigenous groups, etc.).
8. Provide formal and informal mechanisms for networking, co-learning and co-creation, knowledge exchange and information sharing to accelerate innovation.
9. Empowerment is fundamental for family farmers and their organizations to innovate (e.g. capacity development in leadership, negotiation, advocacy, data analysis, collective action, etc.).
10. Key elements for successful adoption and use of innovation must lead to efficiency, profitability and the sustainability of family farmers.
11. In order to address current and future challenges faced by family farmers, a wide range of options should be considered.

Source

Extract of Chair's summary, see http://www.fao.org/3/CA2632EN/ca2632en.pdf

CASE STUDIES

CASE 12.1: SMALLHOLDER DAIRYING IN BIHAR: AN INNOVATION SYSTEM DIAGNOSIS

Dairy development plays a crucial role in strengthening the economy and job creation in rural Bihar (Government of Bihar, 2012). Though there are several agencies in Bihar promoting dairy development, milk productivity has hardly increased in decades. The substantial rises in milk production are due to increases the number of animals in milk, rather than increased milk productivity from cows and buffaloes. Although the state has taken several breed-improvement initiatives, improving animal health, and enhancing fodder and feed availability, smallholder dairy farmers continue to face several challenges. A study to diagnose this situation using the AIS diagnostic tool (see Tool 1 in the next section) was undertaken in 2014. The findings from this diagnosis are discussed below.

Actors and their roles

There are two types of actor in the smallholder dairy innovation system:

- agencies and individuals that directly handle milk and its products; and
- agencies and individuals from the enabling environment that provide support and services to value chain actors.

The enabling environment actors include research and development actors. An examination of the roles played by these agencies revealed that they often act independently of each other, with no collaboration. This is true even though some of them have similar roles. It was also found that the ability to play designated roles is severely affected by lack of personnel, especially in case of the Bihar Livestock Development Agency (BLDA) which does not have enough dedicated staff, and the Department of Animal Husbandry (DoAH). Within the latter, out of about 1850 veterinarian positions, only approximately 630 are regular staff.

More importantly, the smallholder dairy innovation system lacks an actor and/or a mechanism mandated to bring agencies together to share knowledge and resources in order to engage in concerted action.

Patterns of interaction

Analysis of the patterns of interaction further highlighted the need for synchronization of efforts by different agencies. Actors from the informal sector and the private dairy sector have the least interactions with rest of the actors. Some agencies, such as the Bihar Veterinary Association, displayed the potential to play a sector coordination role.

Institutions

An analysis of the habits and practices of different agencies revealed five factors giving rise to the current situation:

The first reason was the limited capacity for programme implementation, insufficient infrastructure and too many existing staff whose knowledge and skills needed to be updated.

The second reason was the low morale of the veterinarians due to dominance by non-technically trained bureaucrats who oversee technical departments but are often from non-technical backgrounds. The veterinarians feel their experience and expertise is often unvalued by senior bureaucrats, who only remain in their position for short periods, six-months to two years periods, before being transferred to another government department. Moreover, in recent years, several technocrats have been suspended on corruption charges, and this has also demoralized many technical staff in dairy and livestock agencies.

The third reason was the top-down approach to planning, with little consultation with staff or local communities.

A fourth reason was the mixed perception of the role of the private sector in milk processing. Some argued that the dairy cooperative faced a lot of hardship in promoting the sector throughout the region, and thus deserved government support. They see the private dairy sector as exploitative, only interested in operating in the profitable milkshed sector. The private dairy actors complained about the lack of a level playing field, and about the dairy cooperative being able to exercise monopoly power within the sector.

Lastly, the fifth reason was the underestimation of the role of knowledge in enhancing productivity and income. With most dairy and livestock interventions focusing on providing hard inputs and services, such as artificial insemination, vaccinations, fodder seeds, cattle feed, or milk collection centres, there was lack of emphasis on knowledge provision through extension and advisory services.

Enabling environment

While there is a positive environment for the expansion and strengthening of milk cooperatives through Bihar State Milk Co-Operative Federation Ltd. (COMFED), there was little on offer for the informal or private dairy sector. Apart from the Breeding Policy of Bihar from 2009, and a chapter on animal husbandry in the Bihar Agricultural Road Map (Government of Bihar, 2012), there were no specific dairy or livestock policies in the State. Policy development was characterized by inertia. There had been a lack of action on the most important issues, particularly relating to the severe shortages of fodder, the lack of expansion of the veterinary support infrastructure, and quality control of milk and milk products, feed, vaccines and drugs. There were dispensaries and one veterinary polyclinic per district. The lack of policy implementation capacity was another major challenge. This was clearly evident in the failure of Bihar Livestock Development Agency (BLDA) to implement the breeding policy, allowing a large number of public and private sector agencies to undertake artificial insemination without professional leadership or oversight. There were no effective mechanisms for drawing lessons from past and ongoing interventions, or to share lessons to help improve future policy design and implementation.

The way forward

The diagnosis of the dairy innovation system in Bihar clearly reveals the diversity of organizations that need to be involved to promote smallholder dairying in Bihar. The sector clearly needs coordination and collaboration to ensure that knowledge and resources are shared freely among diverse stakeholders for concerted action. This is not easy considering the low levels of trust among various actors, and the veterinarians' morale, the tradition in the sector of working independently, and the lack of capacity to engage in coordination. There is policy incoherence or, in other words, a lack of synergy between agricultural and livestock policy and the objectives of organizations outside the sector, meaning in industry, health, education, research, skill development, etc. Unless these constraints that affect the performance of each actor individually and the system as a whole are addressed, the sector can make no real progress.

One way to address this is by creating a multi-stakeholder consultation forum or platform to share and discuss the nature of interventions each organization is undertaking in the dairy livestock sector. This group, a 'dairy innovation platform' or 'dairy innovation policy working group' (DIPWG), should comprise representatives of the public, private, cooperative and NGO sectors that meet at regular intervals to examine, comment on and evaluate policies and interventions in the dairy livestock sector. Nothing of the like currently exists in the sector, and there is an increasing recognition among the stakeholders of the need for such a platform. Such a platform should be hosted by an organization identified by the stakeholders, take on an advisory and learning function, and its activities (meetings and other identified interventions) be adequately funded.

In addition, there is a need to establish a research group that will support the DIPWG in analysing evidence and experiences in Bihar State and elsewhere and help in evaluating possible steps forward. This research group should respond to knowledge-based requests of DIPWG, supporting it to develop policy responses, such as to problems related to fodder, human resources, or ways of enhancing the private sector contribution to the livestock and dairy sector.

Source

Reddy, T.S.V. & Sulaiman, R.V. 2016. Smallholder dairy transformation and innovation in Bihar, India. Policy Brief 20. Nairobi. International Livestock Research Institute (ILRI). (also available at: https://cgspace.cgiar.org/bitstream/handle/10568/69543/Policy_Brief_20.pdf?sequence=5&isAllowed=y).

SUMMARY

The application of the Innovation Systems framework in agriculture has resulted in development of fresh perspectives on development and promotion of new knowledge in agriculture. Not many stakeholders in agricultural development currently recognize the importance of collaboration and knowledge flows among multiple stakeholders in enhancing agricultural innovation. There is also an increasing interest in strengthening the capacity of the various actors in the AIS.

RAS can effectively contribute to linking different actors in the AIS, although their capacities need a lot of strengthening. Similarly the AIS framework also offers new insights on broadening the mandate of RAS and enhancing its capacities. In addition, to linking innovation stakeholders, RAS stakeholders also need to be better interlinked, e.g. through national and local RAS platforms, and to harmonize their goals, coordinate their actions and exchange their experiences to draw lessons for further improvements.

However, a lot more effort is needed to further enhance the contribution of the AIS framework in providing clear policy-relevant advice on organizing institutional arrangements for enhancing innovation, as well as for monitoring, evaluation and lesson learning from application of the AIS framework.

Tools

TOOL 12.1: FOUR-ELEMENT TOOL FOR DIAGNOSING INNOVATION CAPACITY

The four-element tool explores the four elements that determine innovation capacity, namely the actor roles, patterns of interaction, institutions and enabling environment.

The four guiding questions

What actors are relevant for agricultural innovation? In the case of agricultural innovation, it will include not only researchers, farmers, advisory services and development organizations, but also cooperatives and other enterprises related to agricultural input and output markets. What role do these organizations play? Are they sources of technical knowledge on livestock production, disease management or milk marketing and/or organizations engaged in social mobilization, institutional development, pro-poor development and addressing gender issues? Are they engaged in provision of inputs, value addition or output marketing? Do they act as intermediary organizations that link together different groups within the wider system? Do they have a policy or a policy advocacy function? Are they champions for a particular cause, playing a catalytic role in change? Are they associations, clubs or coordinating bodies that help knit together networks of different players and help foster system coherence?

What patterns of interaction exist among different players? Are certain groups better connected together? Are key organizations isolated or well integrated into the wider set of activities and organizations in the system? How are these organizations linked? What function do existing patterns of interaction and linkage facilitate, such as exchange of information on technology, or developmental interventions?

How can the current pattern of roles and interactions be explained? What are the habits and practices that cause organizations to behave the way they do with respect to how well they link with others? Are there traditions or routines that cause organizations to work in certain ways because they have always worked like that? Do patterns of social, economic and political power influence the way organizations work, and how does this affect patterns of interaction? Are there specific policies of organizations, or in the form of legislation, that cause actors to work in certain ways that may affect interaction, transmission and use of knowledge and innovation?

What are the key technical, policy, market or environmental challenges and opportunities being faced? How well have organizations adjusted their patterns of interaction to meet these challenges?

Source

World Bank. 2006. Enhancing agricultural innovation. How to move beyond strengthening research. Washington, DC, The World Bank. (also available at http://siteresources.worldbank.org/INTARD/Resources/Enhancing_Ag_Innovation.pdf).

TOOL 12.2: RAPID APPRAISAL OF AGRICULTURAL INNOVATION SYSTEMS (RAAIS)

Rapid Appraisal of Agricultural Innovation Systems (RAAIS) is a multi-method toolkit that combines qualitative and quantitative data collection and analysis techniques. RAAIS facilitates interaction between stakeholders (e.g. farmers, NGOs, civil society, the private sector, government and researchers) to:

- identify, analyse and prioritize complex agricultural problems;
- create awareness that overcoming such problems requires collaboration;
- facilitate experimentation and joint action;
- alleviate structural constraints for innovation in the agricultural system; and
- reflect and learn on what works and what does not work to ensure that objectives are being achieved.

RAAIS provides a stepwise approach to achieving impact in R4D programmes by supporting:

1. Participatory identification and analysis of constraints and opportunities for innovation in agri-food systems. The RAAIS toolkit can facilitate going from a broad Entry Theme towards more specific Entry Points for innovation across specific levels.
2. The design of a Theory of Change that consists of a coherent set of stepwise interventions that guide the implementation of research and development activities that are feasible and cost-effective.
3. The start of multi-stakeholder processes to overcome specific problems experienced by farmers and other value chain actors in a specific locality, as well as more generic constraints for innovation faced by policymakers and other scaling actors at higher levels.
4. Continuous monitoring, evaluation and learning (M&E&L) to enhance adaptive management of research for development projects with the objective of maximizing outcomes and impact.

In this way, RAAIS can provide specific *entry points* for innovation to address concrete problems experienced by farmers and other agripreneurs in a specific locality, but it can also provide more generic entry points for innovation to address constraints faced by policy-makers and other scaling actors at higher levels. RAAIS is a tool that can facilitate going from a broad entry theme towards more specific entry points for productivity, natural resource management (NRM) and institutional innovation.

Source

Schut, M. and 19 others. 2017. *Guidelines for Innovation Platforms in Agricultural Research for Development.* Decision support for research, development and funding agencies on how to design, budget and implement impactful Innovation Platforms. International Institute of Tropical Agriculture (IITA) and Wageningen University (WUR) under the CGIAR Research Program on Roots Tubers and Bananas (RTB). 88p. (also available at: http://www.rtb.cgiar.org/blog/publication/guidelines-innovation-platforms-agricultural-research-development/?wppa_open=yes).

TOOL 12.3: ASSESSMENT OF INNOVATION CAPACITIES – A SCORING TOOL

FAO has developed a capacity scoring tool that serves as a method to assess innovation capacities, identify strengths and weaknesses and ultimately evaluate changes in these capacities. It is focused on soft skills required for successfully participating in or leading innovation processes, but also touches upon technical skills and the enabling environment for agricultural innovation. If applied correctly, this methodology can provide important evidence on progress and thus the performance of a capacity development project or programme. It also offers insights into how far innovation capacities are available and put to use. This is important when identifying capacity development needs of innovation partnerships and/or specific organizations.

Step-By-Step Guidelines

The following section provides practical guidance on how to implement the scoring tool, outlining the most important aspects to consider for each of the steps. The guidelines are based on experience from the Capacity Development for Agricultural Innovation Systems (CDAIS) project, and might need to be adjusted for other contexts.

1. **Preparation – Getting to know the partnership**
   - Clear definition of the boundary of the partnership is required.
   - Thorough preparation of assessment involves getting to know the actors and issues in the partnership, developing a simulation game or role play, tweaking questions in the questionnaire, ensuring meaningful translation, etc.
   - The team of trained facilitators needs to be provided with background information, trained in the approach and closely involved in the preparation.
   - The number of facilitators needs to be adequate to the number of participants and planned self-assessment groups (ca. one facilitator per 5 participants).
2. **Primer – Simulation game or role play with decision-making situations**
   - The participants can develop an intuitive understanding of challenges they are facing and the capacities required to address these, as well as the underlying contextual issues.
   - Examples of innovation capacities related to the questions in the questionnaire can be elicited through the game or role play (e.g. problem solving skills, collaboration, information sharing, and engagement).
   - Behaviour of participants can be observed to complement scoring data.
3. **Data collection – Facilitated self-assessment in small groups – individual responses (scoring)**
   - Respondents need to be instructed to assess the partnership as a whole and not their individual capacity.
   - A sufficient number of responses need to be collected in a timely manner.
   - Sample size needs to be adequate to support external validity (obtaining representative results and generalizing back to the population).
   - Based on population size (overall number of individuals involved in the partnership), sample size can be determined with a sample size calculator, e.g. https://www.surveymonkey.com/mp/sample-size-calculator/.
   - When determining the sample size, the confidence level should not be lower than 90 percent (better 95 percent) and the margin of error should be lower than 10 percent (better 5 percent).
   - To obtain most observations within a limited time, individual scoring can be carried out in groups of three to five respondents with one facilitator rather than in one-on-one interviews.
   - Facilitators need to be familiar with the local context and be able to fine-tune questions;
   - Questions need to be concise, clear and free of jargon.
   - Questions should be illustrated with examples, obtained through game or role play and the assessment should follow the game or role play without much delay.
   - Facilitators need to provide some quality control, assuring complete and realistic responses.
4. **Data entry – Scores recorded in database**
   - The data is entered in a pre-configured spreadsheet, which can quickly generate summary statistics and basic graphs.
   - Results are aggregated by indicator and by topic: scores are averaged over the questions and over the observations.
   - The dataset needs to be as complete as possible in order to interpret the results meaningfully, 'No Opinion' and 'Don't Know' answers need to be recorded and analysed as one means of gauging the validity of the results obtained for each indicator.
   - Quality assurance is required to minimize data entry errors.

5. **Data analysis – Capacity profiles**

- Not only average values are of interest, but also the spread of data (standard deviation).
- Analysis is best done at the level of indicators, but data can be further aggregated (by topic).
- Capacity profiles (CoxComb or Radar Plots) can be used to visualize capacities by indicator (strengths and weaknesses) and to identify gaps.
- Bar charts can display the information for the enabling environment indicators.
- Scoring information can be complemented by qualitative information for each indicator.

6. **Roadmap – Feedback and discussion of needs and actions**

- It is important to provide quick feedback to stakeholder groups on the findings in order to validate them and jointly discuss the implications.
- Open-ended forward-looking questions related to the capacity scoring questionnaire can be asked in focus group settings for action planning.
- Next steps and actions should be agreed before the end of the assessment.

Source

FAO. 2017. *Assessment of Innovation Capacities – A scoring tool.* Occasional Paper on Innovation for Family Farming. Rome. (also available at: http://www.fao.org/3/a-i7014e.pdf).

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AGRICULTURAL EXTENSION IN TRANSITION WORLDWIDE: POLICIES AND STRATEGIES FOR REFORM

This publication contains twelve modules which cover a selection of major reform measures in agricultural extension being promulgated and implemented internationally, such as linking farmers to markets, making advisory services more demand-driven, promoting pluralistic advisory systems, and enhancing the role of advisory services within agricultural innovation systems. The reform issues consider the changing roles of the various public, private and non-governmental providers, and highlights the collaboration required to create synergies for more efficient and effective high quality services responding to the needs and demands of smallholder farmers.

The modules draw on reform experiences worldwide and provide an introduction, definitions and a discussion for each specific reform measure, as well as case studies, tools, exercises and a reference list. The reform topics are envisaged for policy-makers, management and senior staff of institutions providing agricultural and rural advisory services. It can also be very useful for students studying agriculture, rural development, and extension in particular.

This is a substantially up-dated version of the 2009 publication of the same title, but with only nine modules. These nine modules were restructured and up-dated, and three modules were added. The layout of the modules changed to allow a better overview for the reader.

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