The "New Extensionist":

Roles, Strategies, and Capacities to Reduce Hunger and Poverty

GFRAS POSITION PAPER (draft)

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Contents

ACRONYMS

AIS	Agricultural innovation system
APAARI	Asia-Pacific Association of Agricultural Research Institutions
ANAFE	African Network for Agriculture, Agroforestry and Natural Resources Education
AFAAS	African Forum for Agricultural Advisory Services
AfDB	African Development Bank
ADB	Asian Development Bank
APIRAS	Asia-Pacific Islands Rural Advisory Services Network
APEN	Australasia-Pacific Extension Network
ATS	Agricultural Technical Schools
ATI	Agricultural Training Institute
CTA	Technical Centre for Agricultural and Rural Cooperation
CRS	Catholic Relief Services
EAS	Extension and Advisory Services
EBRD	European Bank for Reconstruction and Development
EWB	Engineers without Borders
FAO	Food and Agricultural Organization
FAS	Farm Advisory Services
FARA	Forum for Agricultural Research in Africa
GCARD	Global Consultation on Agricultural Research for Development
GFRAS	Global Forum for Rural Advisory Services
GCHERA	Global Confederation of Higher Education Associations for the Agricultural and Life
GFAR	Global Forum on Agricultural Research
IFAD	International Fund for Agricultural Development
INCAGRO	Peru Agricultural Research and Extension Programme
IALB	International Academy of Rural Advisors
IADB	Inter-American Development Bank
IFDC	International Fertiliser Development Centre
KHDP	Kerala Horticulture Development Programme
MoFA	Ministry of Food and Agriculture
MANAGE	National Institute of Agricultural Extension Management
MEAS	Modernising Extension and Advisory Services
NAADS	National Agricultural Advisory Services
NI	Neuchâtel Initiative
OECD	The Organisation for Economic Co-operation and Development
RCBP	Rural Capacity Building Project
RELASER	Latin American Network for Rural Extension Services
RUFORUM	Regional Universities Forum for Capacity Building in Agriculture
SEARCA	Science and Education for Agriculture and Development
UWICARICOM	University of the West Indies (Mona Campus), Jamaica and the Caribbean

1. INTRODUCTION

While much has been discussed during recent years on strengthening extension and advisory support to rural communities less is known about how to build the needed capacities within extension and advisory services (EAS). Little is known as well about the role of EAS within the agricultural innovation system (AIS). This paper intends to fill this knowledge gap by articulating a new vision for EAS within the AIS, which we call the "New Extensionist," recognising that this is not just individual roles and capacities but also those at organisational and system level. The paper discusses ways of developing capacities needed for operationalising this vision at these levels.

The urge behind the development of the "New Extensionist" comes from the increasing realisation that the existing EAS need new capacities to respond effectively to the new challenges in agricultural development such as declining water availability, increasing soil degradation and changing and uncertain climate and markets. The past few years have also witnessed erosion of capacities in EAS to perform their traditional roles such as training and communication of technical information. While EAS has to deal with the old as well as new challenges, political and financial support for extension has been on a decline in many countries. Many started questioning its relevance and its competence to deal with the above contemporary challenges. Governments responded to these criticisms by downsizing public extension, decentralising public extension to local administrative units, withdrawing from funding and delivery and promoting privatisation (mainly cost recovery and outsourcing).

Meanwhile, the extension landscape has also undergone changes, becoming more pluralistic with the increasing participation of the private sector (dealing with agro-inputs, agri-business, financial services), non-governmental organisations (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. All these brought additional manpower and resources for EAS and also brought new knowledge, skills and expertise. However this pluralism also brought additional challenges of ensuring quality, providing technical backstopping and ensuring collaboration and synergy between diverse EAS providers.

Though research on communication and innovation during the last decade brought better understanding on the innovation process, this has not influenced the underlying paradigm and practice of EAS in most countries. At the same time there have been few initiatives that tried to experiment with new ways of developing capacities for extension and innovation. This paper builds on the new insights from communication and innovation research, lessons learned from extension experiences over the past decades, the current debates around AIS and experiences with developing capacities for extension and innovation to clarify the role of EAS in AIS and to discuss potential ways for development of capacities to better serve rural producers (including livestock keepers and fisher folk), especially the large number of small farmers and entrepreneurs.

Box 1: Some key terms defined:

Extension and Advisory Services (EAS): This paper uses the definition of extension or rural advisory services articulated by GFRAS for EAS "as consisting 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 developing their own technical, organisational, and management skills and practices so as to improve their livelihoods and well-being"[1]. It recognises the diversity of actors in extension and advisory provision (public, private, CSOs), much broadened support to rural communities (beyond technology and information sharing) including advice related to farm, organisational and business management and facilitation and brokerage in rural development and value chains.

Agricultural Innovation Systems: An innovation system is defined as a network of organisations, enterprises and individuals focussed on bringing new products, processes and new forms of organisations into economic use, together with the institutions and policies that affect their behaviour and performance[2]. As per the innovation systems understanding, innovation is an interactive process among a large number of actors through which knowledge generation, adaptation and use happens. Institutions (rules, attitudes, routines and practices) and policies form the enabling environment that largely determines the capacity of the system to innovate. Improved interaction among the large number of actors in the AIS is critical for innovation and this process often has to be facilitated.

Capacity Development: OECD has defined "capacity" as the ability of people, organisations and society as a whole to manage their affairs successfully and "capacity development" as the process whereby people, organisations and society as a whole unleash, strengthen, create, adapt and maintain capacity over time[3]. It means that capacity development is needed not only at the individual level, but also at the organisational and systems level. This might involve several activities including improving individual skills and abilities, strengthening organisation's vision and mission, its organisational capacities, developing more effective and dynamic relationships among the actors and helping to promote collaboration and alliances.

The GCARD (Global Conference on Agricultural Research for Development) Roadmap emphasized actions to enhance capacities to generate, share and make use of agricultural knowledge for development among all actors involved in agricultural innovation and creating effective linkages for research to contribute to developmental change[4]. EAS are crucial for linking not only research to farmers, but all other actors (involved in delivery of credit, inputs, training, value chain, and engaged in policy development) who are also equally critical for agricultural innovation. But to play this bridging role effectively, EAS need to broaden their mandate, strengthen their capacities to perform traditional roles and develop new capacities to deal with new challenges.

The current discussion on the "New Extensionist" is expected to clarify the roles of different actors in enhancing capacities at different levels and contribute to operationalising the GCARD Roadmap. It should however be noted that all these capacities mentioned in this document need not necessarily have to be developed everywhere and even when they are required they must be developed in stages depending on the challenges and opportunities specific to each location. The intention of GFRAS as a global network of EAS is to provide a menu of ideas and opportunities through this position paper, so that for all those who are interested in strengthening EAS provision can consider these options.

2. ROLE OF EAS IN AGRICULTURAL INNOVATION SYSTEMS

2.1 New demands on EAS

Historically public extension services were established and strengthened to disseminate new information and technologies generated by agricultural research to farmers. The assumption was that new knowledge generated by research once transferred to farmers by extension agencies would lead to adoption of that knowledge and thereby contribute to improved productivity and increased incomes. In other words, the role of EAS was about

communicating and disseminating of information on new and better agricultural practices. While this kind of approach has value in promotion and application of simple technologies by individual farmers, it is not sufficient to deal with many of the new challenges.

Since the early 1990's, the nature of agriculture began to change rapidly. Though agricultural production and productivity have generally increased, poverty (including nutritional insecurity) is widespread in many of the less-favoured agricultural regions. For maintaining and improving land productivity, the natural resource base needs to be sustainably managed. 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. This has further necessitated the development and implementation of gender-sensitive extension approaches. Opening of agricultural markets has further increased the vulnerability of poorer countries and small farmers who have weak bargaining power and limited political voice. Climate change has made agriculture more vulnerable to extreme weather events and managing scarce water resources will be an increasing challenge.

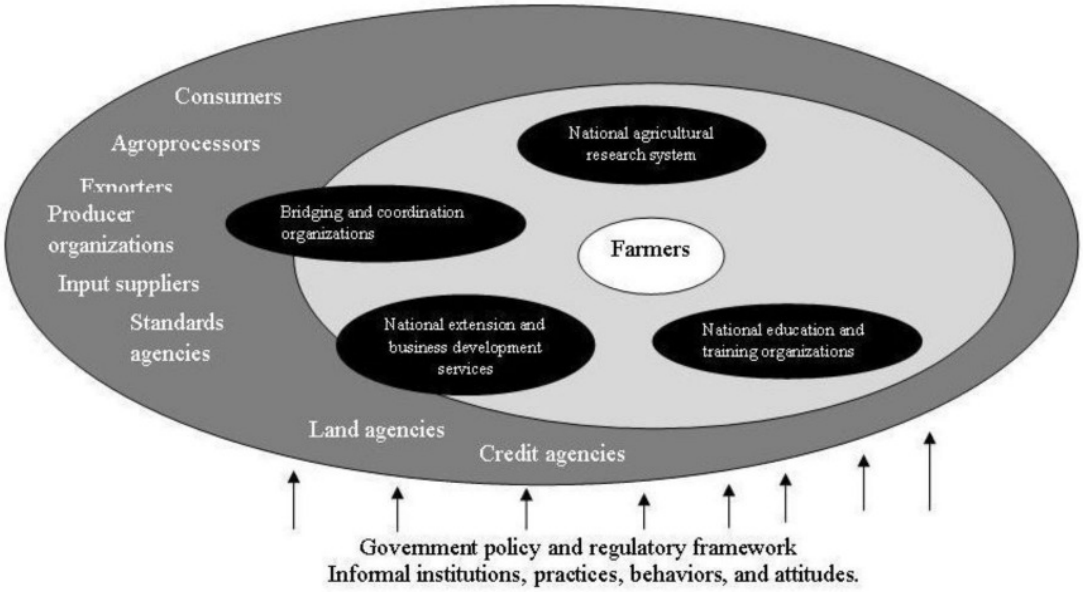
These new challenges also mean that EAS need to tackle a diversity of objectives that include, but go well beyond, transferring new technology. This encompasses the need to: link more effectively and responsively to domestic and international markets[5] where globalization is increasingly competitive; reduce the vulnerability and enhance the voice and empowerment of the rural poor[6],[7] promote environmental conservation[8]; couple technology transfer with other services relating to credit, input and output markets[9],[10]; and enhance the capacity development role that includes training but also strengthening innovation processes, building linkages between farmers and other agencies, and institutional and organisational development to support the bargaining position of farmers[11],[12] .

Addressing these global challenges require generation, adaptation and use of new knowledge. This involves interaction and support from a wide range of organisations in the agricultural innovation system. Moreover solutions for most of the new challenges would require "new forms of interaction, organisation and agreement between multiple actors"[13].

2.2 AIS and implications for EAS roles, strategies, and capacities

The agricultural innovation systems concept is increasingly recognised as useful to identify interventions, design investments and organise complementary interventions that appear most likely to promote agricultural innovation and equitable growth[14]. Agricultural research, extension, education and training are key components of an AIS (Figure 1) though their role and importance vary across production environments in different countries. Application of the innovation systems concept in different agricultural settings provided several useful insights on innovation and the potential role of extension in the AIS. The great value of the AIS concept for extension is that it allows the role and organisation of extension to be understood as part of a wider canvas of actors, processes, institutions and policies that are critical for innovation (Box 2).

Figure 1 An Agricultural Innovation System



Source: The World bank (2012) Agricultural Innovation Systems An Investment Source Book (Modified from Rivera et. al.n.d.)

Box 2. Insights from research on AIS and implications for EAS

1. Innovation is an interactive process through which knowledge is generated, accessed and put into use*. It is not a linear process of science developing new knowledge and transferring it on to extension for wider dissemination*[15].
2. Central to this process are the interactions among a large number of actors having complementary knowledge and expertise. *This process quite often needs to be facilitated as actors often need an initial push or opportunity to break barriers against joint discussion, action, sharing and learning (increasingly referred to as innovation platforms)*[16].
3. *Intermediation activities (increasingly referred to as brokering) aimed at creating, maintaining and strengthening one to one relationships within organisations and among wide range of actors have to be organised to promote innovation*[17].
4. Institutions (the attitudes, habits, rules, laws, norms, practices and ways of working) shape how individuals and organisations interact. Similarly policies and the nature of the policy environment also affect innovation[18]. Advocating for change in institutions and policies is therefore critical for innovation.
5. Innovation requires a combination of technical, organisational and institutional adaptation. New *investments and partnerships are required to couple technological innovation with organisational and institutional change*[19].
6. Traditional interventions such as support to research, extension and education and creation of links among research, extension and farmers are not sufficient to bring about innovation. *This should be supported by complementary interventions including professional skills, incentives and resources to develop partnerships and businesses, improving knowledge flows and learning; and ensuring that the conditions that enable actors to innovate are in place*[20].
7. Putting new knowledge into use is not a post-research, information dissemination task per se. *Innovation often needs further research support, sometimes as a source of expertise, sometimes to adapt existing techniques and sometimes to solve a new problem or learn how to do something new*[21,22].
8. Innovation involves a wide range of functions, activities and tools (performed by several agencies that work through platforms, alliances or partnerships) that are collectively referred to as innovation management. *While facilitating access to technology is important in putting*

research into use, it has value only when it is bundled together with other innovation management tasks such as development of networks, organising producers, communicating research needs, mediating conflicts, facilitating access to credit, inputs and output services, convening innovation platforms, advocacy for policy change and other negotiated changes in practice and action[23].

9. Innovation is a process of constant learning and adaptation. Capability to learn to work in new ways and to incrementally build new competencies is an important part of innovation capacity at the organisation and sector or systems level[24]. *The focus of capacity building should therefore include not only improving technical expertise but also strengthening the capacity for interaction, learning and adaptation.*

As evident from Box 2, EAS can better contribute to the process of innovation if they could play new roles, undertake new functions, devise appropriate strategies and build new capacities. It also means that communicating new knowledge and information, the traditional task of public extension alone is not sufficient to bring about innovation. EAS has to play several other roles the institution is to enable innovation.

2.2.1 Role of EAS: In the AIS, specific role of each EAS would essentially depend on a diagnosis of the roles and functions and activities of other EAS providers and all other actors in the AIS.

The role of public sector extension in each country is shaped to a large extent by the national agricultural development goals. These could be achieving national food security, improving rural livelihoods, empowering farmers by building social capital or improving natural resource management[25]. *As public extension is only one important intermediary actor among the many other actors in the AIS, its comparative advantage lies in its transformation as a "bridging" organisation, linking the different bits of knowledge held by different actors by promoting platforms and networks, and facilitating their application and use, thereby facilitating innovation. Public sector extension should also strive to develop the capacities of other EAS providers so that they are able to contribute better to the larger national goals.*

In the case of other EAS providers (outside the public sector), their roles are often shaped by the business interest (private sector), donor priorities and local interests (NGOs), member concerns (producer organisations) and demand for specific services (consultants) and their roles and capacities varies significantly. Most of them have been working in isolation focussing their initiatives in specific geographical niches and among specific types of farmers. *In all these cases, their roles should expand from implementing specific set of activities to supporting other actors in the AIS and collaborating with other EAS providers.* For instance, NGOs with knowledge and experience of building social capital should collaborate with the public sector extension in joint implementation of programmes dealing with farmer organisational development and/or train farmer leaders and other EAS providers, including the public sector staff, in approaches to building social capital. Similarly, private sector agribusiness companies should partner with public sector extension and NGOs to initiate joint activities to link small farmers to high value markets. Some organisations (that can do brokering) are better placed to develop relationships between the different actors and enable collaborative action.

2.2.2 Functions of EAS

As the role of EAS within the AIS is more about sharing and facilitating access to information, knowledge and expertise and working with others to bring about innovation, EAS should perform a wide range of innovation management functions mentioned above

(Box 2, point 8). However, it is important to note that all EAS providers do not have to perform all these functions. Actual functions performed by each will depend on farmer demands for services, the local context, the organisational mandate, the availability of resources and capacity.

One way of arriving at the specific functions is to convene platforms that bring different stakeholders together and enhance their interaction to change the way their organisations function and collaborate with others ("innovation platforms")[26]. For instance, the national innovation platform for the agricultural sector in Benin representing seven stakeholder groups (farmers' groups; agri-processors; academics and researchers; NGOs; policy makers from different ministries; and international organisations) is involved in conducting innovation needs assessments, facilitating public-private partnerships and encouraging regular consultation of different stakeholders[27]. To make sure that multiple actors in the system interact and enable innovation, other communication functions such as network building, supporting social learning and dealing with dynamics of power and conflict are critical[28]. These functions are also called "boundary work"[29], "intermediation"[30] and recently "innovation brokering"[31].

In an increasingly pluralistic extension environment, public sector EAS should (ideally in collaboration with extension platforms) take a lead in identifying gaps in service delivery and in ensuring that these gaps are addressed through public delivery or funding for extension and promoting capacity development, collaboration and synergy across the different EAS providers. It may also take a lead in coordinating activities of diverse EAS so that the resources are used most efficiently. Coordination is also important to ensure that the poor, small farmers, women and disadvantaged farmers are also served well. Coordination is facilitated when potential partners share a common vision of their problems and opportunities. Similarly, interaction and collaboration thrive only if they are based on trust, which fosters greater commitment, more through knowledge sharing and better conflict resolution[32].

2.2.3 Reform strategies

As performance of EAS (or for that matter the performance of other organisations in AIS) depends on the technical skills and how each actor behaves or interacts with its clients and other AIS actors and contributes its knowledge and expertise to the innovation process, reforms should not be limited to only extension. Ideally reforms should target the whole range of actors in AIS based on the findings from the innovation systems diagnosis (see Section 2.2.5). Reforms should also explicitly address institutional and policy changes that enhance the ability of the different actors, especially those who have the capability of exerting the biggest influence on the AIS, to work as a system.

The innovation systems concept emphasises the importance of learning and adaptation. As innovation is a process of incremental adaptation, new extension arrangements have to evolve based on demands from clients and markets, local conditions, constraints and opportunities. In other words, reforms should be based on experimentation and learning (see section 4.2.3) which could be piloted by innovation platforms or national network of EAS. Considering the wide variation in actors, development objectives, challenges, constraints and opportunities as well as the lessons learned from past experiences, implementing a single model of extension or pursuing one reform strategy across the whole country, province or state, should not be the way to go about reforming EAS.

2.2.4 New capacities for EAS

EAS need new capacities considering the evolving challenges in agriculture, and the new roles, functions and reform strategies envisaged. EAS should have capacities to perform the range of innovation management functions discussed earlier (Box 2). Apart from this, they should also have technical and functional capacities to promote appropriate agricultural technologies, apply participatory approaches, help organise producers, understand markets and value chains and address changing forms of climatic social and economic vulnerability.

2.2.5 Diagnosing existing capacity

As the existing context influences the organisation(s), it is essential to focus on organisations in their context. The context provides incentives to the organisation(s), stimulating them to act in a certain manner. Diagnosing the existing capacity for innovation of the AIS is therefore a good starting point for initiating capacity development. The "Four Element Tool"[33] developed for diagnostic assessment of innovation capacity could be a good starting point. Its elements are:

a. Actors/stakeholders and the roles they play (including their expertise, skills and interests and demand for support)
b. Patterns of interaction between actors
c. Institutions (rules, laws, norms, habits and practices) and
d. The enabling policy environment

Keeping in view the increasing pluralism in EAS as well as extension's interdependence on other actors in the AIS to facilitate or enable innovation, diagnosing this broader capacity for innovation in the AIS is important. In other words, diagnosis of existing capacity within EAS should follow from this broader diagnosis of capacity within AIS. Moreover capacity assessment should be organised as a consultative process. This is essential for ensuring ownership of actions and reducing resistance to change.

However developing capacities at the individual level without broadening the organisational mandate and developing new capacities at the organisational and the enabling environment level never had the desired impact. Capacity development has to therefore focus on all three dimensions in an integrated manner. The next session discusses these dimensions.

3. CAPACITY DEVELOPMENT LEVELS IN EAS

FAO's corporate strategy on Capacity Development[34] provides a useful framework for approaching capacity development and this is equally relevant for capacity development in EAS. The FAO framework talks about functional and technical capacities across three levels: individuals, organisations and enabling environment. The capacity requirements across these three levels are as follows:

- *The individual level* relates to: knowledge, skills (technical and managerial) and attitudes that can be addressed through facilitation, training and competency development.
- *The organisational level* relates to: public, private and civil society organisations and networks of organisations in terms of: a) strategic management functions, structures and relationships; b) operational capacity (relationships, processes, systems, procedures, sanctions, incentives and values; c) human and financial resources (policies, deployment and performance); d) knowledge and information resources; and e) infrastructure.

- *The enabling environment level* relates to: political commitment and vision; policy, legal and regulatory and economic frameworks; national public sector budget allocations and processes; governance and power structures; infrastructures; incentives and social norms.

Some of the following functional capacities as identified by FAO are required at all these three levels. These include:

a) *Policy and normative capacity*: Capacities to formulate and implement policies and lead policy reform
b) *Knowledge capacity*: Capacities to access, generate, manage and exchange information and knowledge
c) *Partnering capacity*: Capacities to engage in networks, alliances and partnerships
d) *Implementation capacity*: Management capacities to implement and deliver programmes and projects, from planning to monitoring, and evaluation.

3.1 Individual level

Effective advice is no longer a matter of simply providing messages about set technological packages. EAS should have individuals with a good understanding of appropriate technological options, how to access and analyse markets, and standards and regulations. Staff with capacities to manage organisational and social processes required to facilitate innovation are also important (Table 1).

Table 1: Capacities required at the individual level in EAS

Technical	Functional
Good understanding about appropriate/relevant/new technologies/practices/ standards/regulations/ policies in agriculture and natural resource management Some of these technical areas include: Technical options to support climate change adaptation; agri-business, value addition and value chain development; improving resource use efficiency; application of biotechnology; intellectual property and farmer rights; use of new Information & Communication Technologies (ICTs)	*Community mobilisation* (organising producers and rural women into different types of interest/activity groups) *Farmer organisation development* (organising, sustaining and federating farmer organisations to take up new extension and advisory service tasks in agriculture and linking them to new source of knowledge and services) *Facilitation* (facilitating discussions, enabling consensus building and joint action, accompanying multi-stakeholder processes) *Coaching* (guided self-reflection and expert advice for improvement) *Reflective learning* (organising experience sharing workshops and facilitating learning) *Mediating in conflicts* (by improving dialogue and helping to reach agreement) *Negotiating* (helping to reach a satisfactory compromise or agreement between individuals or groups and developing negotiating capacity among other stakeholders) *Brokering* (creating many-to-many relationships among the wide range of actors) *Networking & partnership development* *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-organisational and multi-sectoral teams *Working with rural women and using gender sensitive extension approaches*

This long list of hard and soft capacities in Table 1 will never be found or developed in one person or even one organisation. Moreover all these capacities are not required in all situations. Therefore, extension agents with diverse profiles, multi-disciplinary teams and partnership with other organisations in the AIS are critical. Capacity development at the individual level therefore has to be organised as follows:

Staffing: EAS need a combination of generalists and specialists with different backgrounds. For instance, in big organisations (public sector, private agri-business, international NGOs etc.) employees at the lowest level of the hierarchy (who are directly dealing with the clients) could be generalists (who have generic understanding about technologies related to agriculture and skills related to needs assessment, communication, training, facilitation, networking and gender sensitive approaches). These competencies need to be integrated into their training curricula. They should however be supported by a team of specialists who have expertise in different aspects of production, business and markets, building social capital, relationship management, policy advocacy, learning and evaluation, capacity development, troubleshooting and linking up with organisations at the meso and higher level. In many cultures, it is unacceptable for male extension agents to address women in the villages. In such cases, there is a need to increase the number of women extension advisors and also enhance their capacities[35]. It is estimated that only 15% of the world's extension agents are women and only 5% of women farmers benefit from extension services[36].

Specialists could also be hired on a part-time basis depending on the situation. In some organisations, such as consultancy firms that may have a flatter organisational structure, mostly specialists, who can solve or advice on specific technical or managerial issues, are found. Similarly, if a programme is working on linking farmers to high value markets, it needs specialists on value chain development. The point is that the mandate of the programme/organisation and the challenges in the specific context should determine the right combination of generalists and specialists.

Targeting capacity development to the nature of the task: The nature of technical and functional capacities required at different levels in the organisational hierarchy vary depending on the types of functions performed at different levels as well as the special features (constraints, opportunities) of the location where the organisation is working. For instance, staff working at the middle and senior level management in EAS needs more or superior competencies in management, partnering, facilitation and policy advocacy aspects than those working at the field level. Similarly the nature of the ecosystem, farming or enterprise (commodity, farm size and management, socio-economic status) also determines what aspects of technical and functional capacity should be enhanced. In a similar vein, EAS specialising in providing media support in agriculture may need only capacities in use of media and communicating to different audience.

3.2 Organisational level

Organisational level capacity includes individual organisations, systems, procedures and institutional frameworks which basically allow an organisation to operate and deliver demand-driven services to their constituents by capitalising the individual capacities of its workforce[37]. The institutional setting and organisational relationships within an EAS largely

determine this capacity and therefore having the right institutions (routines, habits, practices, rules and laws) that favour or support interaction, learning and sharing is important.

As institutions shape innovation processes, institutional change is a crucial element of capacity development. The current "institutions" in public extension may include: rigid hierarchy and centralized modes of 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 of 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[38]. These institutions need to change if public extension is to play a wider role. There is also a need to identify and address similar habits and practices in other EAS organisations and actors in the AIS that constrain productive interactions among the various actors at different levels.

To perform the roles and functions envisaged under the AIS properly in terms of quantity and quality, EAS should also have the following capacities at the organisational level (Table 2).

Table 2: Capacities required at the organisational level in EAS

Broad Areas	Specific areas to support capacity strengthening
Strategic management Functions	Leadership (inspiration and motivation), vision building, change management, capacity to respond to emergencies, policy relations, advocacy
Structures	Ability to structure the organisation as different units in the organisational hierarchy and ensure the different units relate and are flexible
Relationships	Clearly defining authority, roles and responsibilities and resources among different units within an organisation and across organisations within the AIS; building trust; creating time and space for learning from each other
Processes, systems and procedures	Planning, organising, leading and controlling Methods used in internal communication, performance assessment, human resource development, financial management, learning, monitoring & evaluation, ensuring accountability to different stakeholders and the range of approaches used to deliver extension and advisory support
Values, Incentives/rewards	Integrity, science-based knowledge, inclusion, partnership, learning, mechanisms to reward and incentivise good performance, acceptable standards which govern behaviour of individuals in an organisation, opportunities for feedback and reflection, reputation
Human resources	Ability to provide adequate number of staff and access to experts in other organisations to complement and supplement its expertise; clear job descriptions, well defined roles and tasks, career development and incentives, access to new knowledge, mechanisms to mobilise, nurture and retain human resources
Financial resources	Ability to provide adequate budget for staff salaries, other operational expenses and investments and to develop and implement programmes benefiting smallholders; or a sustainable business model that keep the organisation in business
Knowledge and Information resources	Knowledge management including relationship management to access skills and knowledge to deal with new challenges and opportunities
Infrastructure	Ability to support EAS in terms of mobility, telecommunication, ICT, buildings and training facilities, roads, market infrastructure

If organisations do not reflect critically on their mission, services, products, cultures and procedures on a regular basis, they may well become dysfunctional and go bankrupt or abolished[39]. Many organisations do not have a culture of learning. Creating platforms to

share success, mistakes and failures and reflect upon them is essential. There should also be space to experiment with new approaches. EAS need visionary and inspiring leadership to continuously learn from experience and creating a culture of excellence. Swanson and Rajalahti (2010) have developed a simple survey instrument to collect data and information on many of these aspects from major EAS providers[40].

3.3 Enabling environment level

Enabling environment relates to political commitment and vision; policy, legal, and economic frameworks, national public sector budget allocations and processes, governance and power structures, incentives and social norms that facilitate (or hampers) development of an organisation[41]. Performance of EAS depends crucially on these conditions that prevail in the environment in which they are embedded. For example, poorly conceived agricultural policies would create a disabling environment with significant consequences for the extension programmes. Appropriate regulatory frameworks are essential in pluralistic extension system to ensure fair competition, offer a level playing field and enable collaboration among different EAS providers. Some of the conditions in the enabling environment include:

- Macroeconomic policies, incentives for increasing production, market reforms and access to credit
- Political commitment to agricultural development and recognition for EAS
- Political and fiscal decentralisation and clearly demarcated roles and responsibilities of local government in agricultural development including support to EAS.
- Availability of policy framework or policy for EAS and ways in which such policies shape behaviour of different organisations in the sector and AIS?
- Capacity and willingness of other actors in the AIS (research, education, private sector, NGOs) to share resources and expertise and engage in joint action with EAS and farmers/farmers' organisations.
- Institutions that facilitate and stimulate problem-solving collaboration between different EAS providers and between them and other organisations in the AIS, rather than constraining organisations to formal mandates
- Capacity of policy making process to adapt policies based on lessons learned from policy implementation and for defining policies in multi-stakeholder processes involving all parties concerned
- Financing arrangements that stimulate client-orientation, demand-responsiveness and collaboration among EAS providers
- Level of literacy as well as education in the country/province/region
- Infrastructure (roads, telecommunications, markets, etc.)
- Availability and access to financial services
- Availability and access to inputs
- Training institutions that can provide tailor made training and learning support

Having all these enabling conditions is not necessary for a successful AIS, but having many of these conditions improve the opportunities for innovation and therefore a strategy is needed to influence these conditions. The enabling environment could be influenced by building the following capacities:

a. Capacity of policy making bodies to adapt policies based on lessons learned from policy implementation, for reflective learning and adaptive change management
b. Initiating joint activities and collaboration between organisations in the AIS and the actors of the agricultural sector

c. Supporting organisation of workshops, seminars, joint research, commissioned studies and joint evaluation that would bring out major areas that needs policy attention
d. Organising sector co-ordination mechanisms and multi-stakeholder working groups to develop and manage relationships among multiple actors and collectively develop strategic directions and policies for the sector
e. Generating adequate data that are required for evidence based policy advocacy and decision making
f. Sharing information on the activities of the EAS with farmers and their organisations, researchers, policy makers and politicians who are interested to address constraints through policy changes (use of websites, policy briefs, social networking sites)
g. Managing relationships with the media (communication and media management)

4. SUPPORTING CAPACITY DEVELOPMENT

Capacity development is a long term investment and change process. It should go beyond strengthening capacities needed to produce technical results to building more effective and dynamic relationships between different actors within a system (be it an organisations, a sector or a country or region)[42]. It should build on existing capacities and requires on-going learning and adaptation, long-term strategic partnerships, effective coherence and coordination between the actors offering capacity development and those whose capacity is being enhanced[43]. The question of roles and how they are negotiated is centrally important in capacity development.

A broader range of approaches is required to develop capacity at the three levels. The following section discusses some of the ways in which support for capacity development is currently organised by various agencies. The purpose of this section is to mainly illustrate the diversity of different approaches in supporting capacity development and some of the interesting initiatives.

4.1 Supporting capacity at the individual level

Competence in areas such as market development, business management, adaptation to climate change, and application of ICTs can be learned through courses at different levels (from vocational to academic). This requires that schools, universities and training units develop curricula for these. The new soft skills needed by EAS professionals and by organisational leadership require new and unconventional approaches to learning (action learning). These are not currently offered through schools and universities, and would require important changes in the way schools and universities design and implement courses. Hence, development of separate training organisations, less constrained than academic institutions would be appropriate. Implementing modular system for training and developing course materials to impart as distance education can go a long way in enhancing the capacity of those who are already on the job.

4.1.1 Setting up training centres and strengthening their capacity: Over the years, many countries set up their own training centres attached to the Ministry of Agriculture/Education for organising continuous capacity building of its staff. Most of these efforts have been on developing technical skills related to production of crops/enterprises and functional skills related to social mobilisation, participation, communication, linking farmers to markets etc.

Some of them also organise programmes for enhancing various capacities of other providers (e.g. for input dealers in India by the National Institute of Agricultural Extension Management (MANAGE), agro-dealer development by International Fertiliser Development Centre (IFDC) and local government staff in Philippines by Agricultural Training Institute (ATI). In India, the Government reimburses the fees of extension staff in the public sector enrolling for the Post Graduate Diploma in Agricultural Extension offered by MANAGE.

Several efforts have been made during recent years to address the poor quality of training in these centres. For instance, strengthening capacity for vocational and extension training has been one of the components of the recently concluded Rural Capacity Building Project (RCBP) in Ethiopia. In Vietnam, CIAT, Helvetas and SDC jointly developed a guide to "agricultural marketing extension" to support extension officers to provide effective, market oriented farmer advisory services[44]. USAID-Egypt is supporting reform of Agricultural Technical Schools (ATS) in Egypt by way of curriculum revision, provision of improved teaching aids and training teachers in its use[45]. In Ghana, the Engineers without Borders (EWB) and the Ministry of Food and Agriculture (MoFA) staff have jointly created and implemented courses on agri-business and enterprise development to strengthen the delivery of these skills among students in agricultural colleges[46]. While vocational, induction and in-service training would continue to remain important; there is a need for more "on the job" capacity development for EAS providers. In Europe, IALB (The International Academy of Advisors in Agriculture, Home economics and Rural Development) offers certificate course for advisors to enhance their methodological, communicative and social knowledge and skills.

4.2 Supporting capacity at the organisational level

EAS need mechanisms to ensure technical backstopping from organizations involved in research, education and training. Apart from these, developing new organisational capacities requires action learning, learning by doing, including such services as: coaching for leadership in strategic and change management, in managing learning organisations towards high performance; facilitation of self-reflection within the organisation and with its partners and clients on experience, aimed at enhanced performance (based on lessons from implementation); facilitation of organic development of structure and self-design of participatory planning and implementation processes; facilitation and coaching to improve communication, staff motivation and performance assessment and career planning. This kind of coaching and facilitation service will probably need to come from management consultancy firms and business schools. This may in some countries require developing the capacity of such firms and business schools in designing programmes relevant for the rural sector.

4.2.1Establishment of agricultural advisory services: Donors have played an important role in supporting the establishment of agricultural advisory services in central and eastern European countries during the transition phase (post-1991). For instance the US Department of Agriculture supported Russia in establishing information and advisory services modelled on the US extension system. Many US Land-Grant universities also participated in this programme. Advisory systems in new member countries of the EU are still evolving. The EU Rural Development policy supports Member States in setting up Farm Advisory Services (FAS) where needed. The existence of a national FAS guarantees that each farmer can seek and receive advice on at least the basic cross-compliance requirements in the field of the environment, public health, and animal and plant health.

4.2.2 Demand side strengthening: In the case of INCAGRO (Peru Agricultural Research and Extension Programme), competitive bidding was used to increase the demand and supply of extension services[47]. An important aspect of the Agricultural Technology Fund of INCAGRO is that farmers own the project and they contract extension providers to complete a specified number of activities. This helped farmer groups to gain organisational and project development skills. NAADS (National Agricultural Advisory Services) in Uganda was another attempt at empowering farmers to demand and control advisory services.

4.2.3 *Action learning*: Action learning is a learning and problem-solving strategy to increase employees' learning capacity within an organisation and between organisations. Though this has not been used much in capacity development of EAS, it promises to be of great potential in developing functional capacities in EAS. This approach takes advantage of staff members' tacit knowledge and experiences and creates opportunities to experiment, reflect and share their learning while solving real problems in the organisational context. For instance, the EU-funded Kerala Horticulture Development Programme (KHDP) in India approached implementation of its activities as a series of small experimental projects in partnerships with others and assisted staff to reflect on their meaning and outcomes[48]. In this process, it developed new capacities for experimentation, learning and adaptation to evolving circumstances. Action learning needs facilitation and an outside facilitator can often help in this process. Organisations do need a culture of learning to appreciate this strategy. Action learning can succeed in organisations that provide flexibility to lower and middle level staff to experiment with different approaches.

4.3 Supporting capacity at the enabling environment level

A supportive enabling environment is critical for the development, sustainability and effectiveness of EAS and it requires a wide range covering political, financial, organisational, institutional and infrastructural support. This section discusses developing the needed capacities at the organisational and institutional levels, which is mainly a matter of action learning jointly with other actors in the AIS. This requires coaching and facilitation support from high quality management consultancy firms specialised in multi-actor platforms and partnerships, change management, and policy advocacy. Again, this will probably require developing the capacity of such firms. Perhaps universities can also be interested in developing special schools for this service that are attached to universities, but not subject to the normal academic constraints. Universities can also play a major role in reviewing EAS offered by different agencies, conducting action research in partnership with EAS, developing new frameworks for organising EAS as well as integrating this approach in the existing curricula.

4.3.1 Action learning in innovation platforms: This is another approach that is increasingly used in promoting agricultural innovation, especially in Africa and Latin America. Innovation platforms were set up to provide space for negotiation, planning and action learning by bringing together different stakeholders working towards a common goal. To play their appropriate roles in innovation platforms different actors require strengthening capacity in multi-stakeholder interaction, trust building, conflict resolutions, team building, listening skills and mediation. But more importantly, workings in platforms contribute to developing many of these new capacities by way of action learning. If sufficient opportunities are built in to document and reflect on the processes, institutional changes and outcomes of this approach, it can contribute to development of new capacities and their institutionalisation.

4.3.2: Networking and policy advocacy: Lack of space for advocacy and leadership at different levels for EAS has also contributed to poor recognition and the declining interest among policy makers (politicians and senior bureaucrats) involved in agriculture. Establishment of regional and global networks of EAS in recent years has been partly a response to this situation. GFRAS currently has been playing a catalysing role, promoting and stimulating interactions between and within the global policy level and the regional and national levels. This is expected to enable a supportive environment for investments in EAS[49]. Similarly regional networks of EAS such as AFAAS (Africa), RELASER (Latin America); APEN (Australasia-Pacific Extension Network), APIRAS (Asia-Pacific Islands Rural Advisory Services Network) also play an important role in influencing policies in the respective regions. More efforts are needed in this area to develop regional and national networks and promote sharing of experiences within and across countries and regions.

4.3.3 Documentation and development of new frameworks: Apart from FAO and the World Bank, other development partners during the last decade have also started valuing the importance of documenting experiences with EAS reforms and developing new frameworks for guiding investments and reforms. Most important among them was the Neuchâtel Initiative (NI), a platform funded by European Donors. Over the last 15 years, the NI has produced several useful publications on different aspects of extension reforms. GFRAS has taken over these functions of the NI since 2010. Regional networks of EAS such as AFAAS and RELASER are also bringing out several useful knowledge products related to reforms in advisory services and frameworks to deal with new challenges.

MEAS (Modernising Extension and Advisory Services) is another global initiative that is trying to define and disseminate good practice strategies and approaches to establishing efficient and effective EAS. NGOs are also involved in developing new training modules for their extension staff. For instance, the Catholic Relief Services (CRS) developed training modules to develop capacities among its extension agents in their work with farmer groups[50]. FAO recently developed a training module for senior extension managers, policy makers and students on different aspects of extension reforms and new and emerging challenges in EAS delivery. More efforts are required to link these knowledge products to curricula reforms and changes in policies and practice at the regional and national levels.

Donors have played an important role in developing capacities of EAS in several countries by way of providing technical and financial assistance. Donor engagement still continues across many countries and this varies from setting up new extension arrangements in Eastern and Central Europe to promoting demand-driven and decentralised approaches to extension in Asian countries and piloting new institutional innovations in extension in Latin America and Sub-Saharan Africa. These contributions are still critical for developing capacity of EAS. However much could be achieved through enhanced and sustainable investments and efforts in capacity development by national governments and all actors engaged in EAS and other organisations in AIS. This process should be informed by lessons from the past efforts in capacity development (Box 3).

Box 3: Emerging insights from capacity development initiatives

Capacity development efforts in general have a long history. So far, several billion US dollars have been spent on building capacities by way of technical assistance/cooperation in developing countries. Reviews of the effectiveness of technical co-operation revealed that "technical co-operation has been less effective at developing local institutions or strengthening local capacities; and that it was expensive, donor-driven, often served to heighten dependence on foreign experts and distorted national priorities"[51]. Cherry-picking of more visible activities (that appeal to the home constituency of the donors) and their preference for tangible outputs led to less emphasis on host country priorities

and less tangible capacity development activities[52]. Capacity development has also suffered from lack of clear definitions, coherent conceptual frameworks and effective monitoring of results[53].

The last decade saw improved understanding of how to develop capacities and some of the insights that emanated from reviews and evaluations on this theme are as follows:

1. *Diagnosis*: Assessing capacity is a pre-requisite for deciding if and how support to capacity development is feasible. *Diagnosis should start at the AIS level and the challenge is to identify and strengthen the weakest links. Much of this diagnosis should be self-diagnosis. Try to understand why a system work as it does, rather than just seeing why it does not work*[54].
2. *Ownership*: Unless developing countries fully own technical co-operation programmes, having already agreed on their objectives and shaped their content, they will never have the commitment needed to make such programmes work[55],[56].
3. *Sustainability:* When new and innovative approaches are being introduced in capacity building, sustainability issues need to be considered early in the introduction of initiatives[57] . Project design should be founded on realistic assessment of the domestic resources to sustain project activities[58]. Apart from material resources, sustainability is also dependent on institutional, cultural and motivational factors.
4. *Not necessarily through formal projects:* Capacity development shouldn't be conceived as necessarily involving outside support to EAS with specific capacity development objectives. Capacity development also takes place through learning by doing, participation, observation, comparison of experience. It can be an important spin-off or by-product of the way in which development, extension or research is done[59].
5. *Long term process:* Capacity development is a lengthy process, particularly where initial capacity is very weak. Improvements often require commitments beyond the customary time limits of donor projects[60].

5. RECOMMENDATIONS FOR CAPACITY DEVELOPMENT IN EAS

While sections 3 and 4 of this paper discussed the nature of capacities and how they could be developed, this section attempts to summarise the specific set of actions that should be taken at the global, regional and national levels to develop capacities. All these actions are not required to be implemented together in all settings. While attempting to develop capacities of EAS one should keep in mind the wide diversity of policy frameworks, service providers, institutional leadership, management structure and availability of human, financial and other resources in different countries. The goal should be to determine whether specific investments can develop capacities at various levels so that EAS can contribute better to the defined roles in the innovation process. As discussed earlier, capacities need to be built at the level of individual; organisational and enabling environment and actions have to be taken at the local, national, regional and global level by the actors mentioned below.

5.1 Actions and actors at the national level

N1. Diagnosis of roles and functions in the agricultural innovation system and synthesis and sharing of existing studies (*Action by: Specialist agencies/consultants in consultation with different stakeholders)*

N2. Undertake survey of EAS providers in the country *(Action by: Government through the Ministry of Agriculture; EAS platforms and networks).*

N3. Undertake capacity self-diagnosis of EAS *(Action by: EAS management, country EAS networks; EAS fora and platforms supported by facilitator)*

N4. Create innovation platforms, undertake needs assessment and initiate pilot projects to experiment with new approaches and learning from these *(Action by: EAS and other actors in the AIS especially universities)*

N5. Create mechanisms for regular monitoring, reflection, learning and evaluation; review of systems and processes create arrangements for co-ordination and collaborative action among EAS *(Action by: EAS platforms and networks supported by facilitator).*
N6. Strengthen technical backstopping to EAS from organisations involved in research (*Action by: Research councils, universities, private sector, and NGOs*).
N7. Establish and strengthen training centres; contract in specific competencies required for supporting capacity development; encourage management training centres and business schools to organise tailor made capacity development programmes for EAS on coaching, facilitation, leadership, vision building. *(Action by: Ministries of Agriculture and EAS in collaboration with training/management institutions)*
N8. Develop curriculum for vocational and continuing education and skill up-gradation of individuals in EAS and farmers *(Action by: Universities, research centres, training centres and NGOs (e.g.: Catholic Relief Services, Engineers without Borders) in collaboration with EAS, FOs and organisations such as FAO)*
N9. Establish collaboration and partnerships with different actors in the AIS in action research and learning by doing *(Action by: Research and extension councils, training centres in collaboration with EAS)*
N10. Support establishment of national networks of EAS providers *(Action: Extension division in the Ministry of Agriculture, EAS providers, Professional societies in extension, regional networks of EAS and private foundations (e.g.: Syngenta Foundation for Sustainable Agriculture)*
N11. Initiate policy research on EAS and AIS to support evidence based reforms and policy advocacy *(Action by: EAS platforms with universities, research councils and other policy research centres and farmer organisations, and FAO and CGIAR)*
N12. Enhance public funding for promoting EAS providers *(Action by: National, provincial and local governments, EAS networks)*

5.2 Actions and actors at the regional level

R1. Support establishment of regional networks and engage them in design, implementation and evaluation of EAS interventions and strengthen similar existing networks (*Action by: Regional lending organisations such as ADB, AfDB, IADB, EBRD etc.; Regional economic groupings such as regional economic communities e.g. SADC in Africa, ASEAN in Asia & Pacific, SAARC in South Asia*)
R2. Collect and synthesise evidence on different aspects of EAS in the region (*Action by: Regional EAS networks; FAO, CGIAR; regional university, education and research networks e.g. ANAFE, RUFORUM in Africa, AGRINATURA/Agreenium in Europe, APAARI, FARA; regional farmer organisations)*
R3. Develop policy briefs and position papers to influence policy process to support EAS (*Action by: Regional networks of EAS in collaboration with regional policy bodies, regional farmer organisations, researchers in the region in universities and research centres)*
R4. Develop and promote new frameworks and methodologies related to EAS *(Action by: Regional EAS networks in collaboration with farmer organisations, researchers and practitioners/Regional universities and academic centres (e.g.: RUFORUM in Africa; SEARCA in South East Asia, UWI-CARICOM in the Caribbean*)
R5. Organise regional consultations and training programmes to share experiences and influence conditions in the enabling environment (*Action by: Regional networks of EAS supported by other actors in the AIS*).

5.3 Actions and actors at the global level

G1. Support GFRAS and other international actors to lead and guide networking and capacity development and policy advocacy for EAS at the global level (*Action by: Donors and intergovernmental bodies engaged in agriculture and rural development such as World Bank, FAO, CTA, IFAD, World Farmers Organization, GCHERA, GFAR and others)*

G2. Strengthen, support and co-ordinate sub-/regional networks of EAS to achieve their respective goals *(Action by: GFRAS, international and regional development agencies)*
G3. Develop frameworks, tools, training modules, investment source books, discussion papers to shape the evolution of EAS and share these outputs widely *(Action by: GFRAS in collaboration with donors, researchers and practitioners linked to EAS; FAO, World Bank, CTA, MEAS, others)*
G4. Liaise with donors at the global and regional levels engaged in EAS *(Action by: GFRAS, GDPRD)*
G5. Policy advocacy on strengthening the role of EAS in agricultural development and poverty reduction and advocating for enhanced funding support and institutional and policy reforms in AIS *(Action by: GFRAS in collaboration with regional networks and other bi-lateral and international development agencies)*
G6. Promote inter-regional sharing of experiences with reforms and new approaches in EAS *(Action by: GFRAS in collaboration with Regional Networks, FAO, World Bank and other donors)*
G7. Provide long term financial and technical support to EAS to manage change and develop new capacities; Use new investments to experiment with new approaches and promote institutional reforms *(Action by: Donors and intergovernmental bodies engaged in agriculture and rural development such as World Bank, FAO, IFAD and others*

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