ASSESSING CAPACITY DEVELOPMENT NEEDS OF EXTENSION AND ADVISORY SERVICES (EAS): A REVIEW

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September 2015

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Assessing Capacity Development Needs of Extension and Advisory Services (EAS): A Review

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CRISP, Hyderabad

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ACRONYMS

AESA	Agricultural Extension in South Asia
AET	Agricultural Education and Training
AIS	Agricultural Innovation Systems
CD	Capacity Development
CNA	Capacity Need Assessment
EAS	Extension and Advisory Services
FAO	Food and Agricultural Organization of United Nations
GFRAS	Global Forum for Rural Advisory Services
ISTD	Indian Society for Training & Development
NGOs	Non-Governmental Organizations
UNDP	United Nations Development Programme

ASSESSING CAPACITY DEVELOPMENT NEEDS OF

EXTENSION AND ADVISORY SERVICES (EAS)

I.   BACKGROUND

The Global Forum for Rural Advisory Services (GFRAS) has articulated a new vision for Extension and Advisory Services (EAS) within the Agricultural Innovation Systems (AIS). This vision articulated in its position paper, called "New Extensionist", argues for an expanded role for EAS (Box 1) within AIS and development of new capacities at different levels. The motive behind the development of 'New Extensionist' comes from the realisation that the existing EAS need new capacities to respond effectively to the emerging challenges in agricultural development (declining water availability, increasing soil degradation, and changing and uncertain climate and markets). In the past few years, capacities in EAS to perform their traditional roles such as training and communication of technical information have eroded. Meanwhile, the extension landscape has become increasingly pluralistic with greater participation of the private sector. All these warrant new knowledge, skills, and expertise among EAS providers.

Box 1: What is EAS?

Extension and Advisory Services (EAS) consists 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, organizational, and management skills and practices so as to improve their livelihoods and well-being'. It recognizes the diversity of actors in extension and advisory provision (public, private, civil society); much broadened support to rural communities (beyond technology and information sharing) including advice related to farm, organizational and business management; and facilitation and brokerage in rural development and value chains.

Source: (GFRAS, 2012)[1]

In addition to linking research to farmers, EAS is crucial for all other actors in the AIS involved in (a) delivery of credit and inputs; (b) provision of training and other services; and (c) marketing and policy development (Figure 1). To undertake the linking or bridging role effectively, EAS need to broaden their mandate and strengthen their capacities. The increasing pluralism in EAS delivery has also brought an additional challenge of ensuring quality, collaboration and synergy among diverse EAS providers.

One of the major priorities identified during the first meeting of the AESA (Agricultural Extension in South Asia) network was capacity development of EAS providers. The participants agreed that much more needs to be done to strengthen the capacities and deal with the rapidly evolving challenges in agriculture (AESA, 2014)[2].

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[1] GFRAS, 2012. The "New Extensionist": Roles, Strategies, and Capacities to Strengthen Extension and Advisory Services.
[2] AESA, 2014. Proceedings of the first face to face meeting of AESA Network, Kathmandu, Nepal http://www.aesa-gfras.net/Resources/file/PROCEEDINGS-First%20AESA%20Meeting%2014-15%20Jan%202014-Kathmandu.pdf

An essential feature of capacity development is a common understanding of what capacity and capacity development mean. To some the terms are synonymous with workshops and training. For senior managers, it might mean organizational development. Non-Governmental organizations (NGOs) associate the terms with empowering individuals and grassroots organizations. In the case of international agencies and donors, capacity and capacity development is about national institutions, governance and economic management (Horton 2002)[3]. Another related issue is the lack of systematic efforts to identify the capacity needs of EAS providers, which should be the starting point for organizing capacity development. Though a range of tools and approaches exist for assessing capacity at different levels, the tools are not used in designing capacity development interventions in EAS.
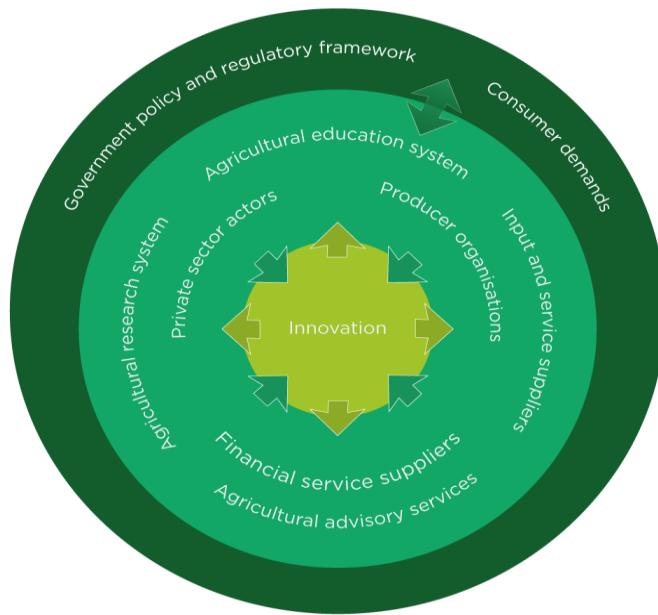
Figure 1: Agricultural Innovation System (Source: GFRAS, 2015)

This paper was developed primarily to guide the process of developing a facilitator's guide for capacity need assessment in EAS. We started this exercise by organizing a literature review on different dimensions of capacity, capacity development and capacity need assessment. From 4 June 2015 to 26 June 2015, AESA organized an e-discussion on Capacity Development for Extension and Advisory Service Providers in South Asia. This report also builds on the experiences and perspectives shared by 24 participants in this discussion. To know more about the current approaches followed in capacity needs assessment, we interacted with different stakeholders involved in capacity development of EAS in India.

The paper is organized as follows. The key concepts and dimensions of capacity, capacity development and capacity need assessment are discussed in Section II. The findings from the need assessment of capacities to support or enable agricultural Innovation, drawing from the work of the Tropical Agricultural Platform, are presented in Section III. Issues related to capacity

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[3] Horton, Douglas.2002. Planning, Implementing, and Evaluating Capacity Development. ISNAR Briefing Paper 50. July 2002.

development of EAS are discussed in Section IV. Section V is devoted the capacity development of EAS in India. Some of the existing mechanisms for capacity development and capacity need assessment are discussed in this section. The conclusions are presented in Section VI.

II.   DIMENSIONS OF CAPACITY DEVELOPMENT

Definition of key terms

Capacity

IUCN (IUCN, 2009)[4] has defined capacity as the overall ability of an individual or a group to perform their responsibilities. Capacity is also explained (UNDP, 1998)[5] as the ability of individuals, organizations, organizational units and/or systems to perform functions effectively and in a sustainable manner. Capacity is defined by FAO as "the ability of people, organizations and society as a whole to manage their affairs successfully.

The Tropical Agricultural Platform makes the following distinctions among these two terms competencies and capacity which are often used interchangeably (TAP, 2015)[6].

Competencies refer to the core knowledge, skills, attitudes and energies that individuals need to effectively work within the AIS. Thus beyond the skills, technical expertise and experience in their relevant fields to perform a given function, Capacity Development for AIS requires that individuals experience a shift in mindset, attitudes and behaviours. "Innovation competencies" include abilities to (a) create, access and use information and knowledge; (b) work and learn with others to improve the performance of innovation systems; and (c) facilitate the innovation process.

Capacity refers to the ability of individuals and organizations to use competencies in such a way that the collective potential is realized. This includes the "collective" ability of a group or system to (a) function as effective organizations; (b) provide space for organizational learning; (c) adapt to changing circumstances; (d) build effective partnerships; (e) take risks; (f) act towards organizational goals; and (g) acquire and manage the necessary resources. The collective skills involved may be technical, logistical, managerial or less tangible in nature (such as the ability to earn legitimacy or trust).

Capacity Development (CD)

Over the last two decades, the United Nations (UN) organizations have come up with various concepts and definitions on capacity development. The most important among these are as

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[4] IUCN (2009). Strengthening Voices for Better Choices: A capacity needs assessment process.
[5] UNDP, 1998. *Capacity Assessment And Development In a Systems and Strategic Management Context.* Technical Advisory Paper No. 3 Management Development and Governance Division Bureau for Development Policy January 1998.
https://www.cbd.int/doc/pa/tools/Capacity%20assessment%20and%20development.pdf
[6] TAP, 2015. Capacity Development Expert Group Workshop, Montpellier, 19 and 20 March 2015 -Draft Summary Report

follows:

- (OECD/DAC, 2006)[7] had defined capacity development as the process whereby individuals, organizations and society as a whole unleash, strengthen, create, adapt and maintain that capacity over time.
- FAO (Food and agricultural organization of the UN) upholds the above definition and works towards implementing it in the context of its own mandate. (FAO/ IPTRID, 2005)[8] It describes capacity development as "the sum of efforts needed to nurture, enhance and utilize the skills and capabilities of people and institutions at all levels- locally, nationally and regionally and internationally."
- UNDP (2009 a)[9] sees capacity development as the process through which individuals, organizations and societies obtain, strengthen and maintain the capabilities to set and achieve their own development objectives over time. An essential ingredient in the UNDP capacity development approach is *transformation*. Transformation goes beyond performing tasks, and it is more of changing mindset and attitudes.

Box 2: History of Global Efforts in Capacity Development

Since the early 1970s, the lead within the UN system for action and thinking on what was then called *Institution Building* was given to the United Nations Development Programme (UNDP). UNDP offered guidance to its staff and member governments on building up the ability of basic national organizations, in areas such as civil aviation, meteorology, agriculture, health, and nutrition. All UN specialised agencies were supposed to be actively supporting capacity building in the areas for which they were technically qualified. E.g., FAO in the rural sector and agriculture and WHO in health. But they achieved mixed results. By 1991, the term "Institution Building" had evolved and transformed into "Capacity Building".

By 1992, Capacity Building became a central concept in Agenda 21 and in UN Conference on Environment and Development (UNCED) agreements. Since then, the issue of capacity building has become a major priority within the global conventions, the Global Environmental Facility (GEF) and the international communities. In 2000, UNDP, through its Strategic Partnership with the GEF Secretariat, launched the Capacity Development Initiative (CDI). The initiative is a consultative process involving extensive outreach and dialogue to identify countries' priorities and issues in capacity development needs. Based on the findings, strategy and action plan was to be developed to meet the challenges of global environmental action.

In 2002, the World Summit in Sustainable Development (WSSD) and the Second GEF Assembly reaffirmed the priority of building the capacity of developing countries. The WSSD

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[7] OECD/DAC. 2006. The Challenge of Capacity Development: Working Towards Good Practice.
http://www.fao.org/fileadmin/templates/capacitybuilding/pdf/DAC_paper_final.pdf
[8] FAO/ IPTRID.2005. Workshop Proceedings on Capacity Development in Agricultural Water Management. Capacity needs assessment - Methodology and processes by Melvyn Kay, Tom Franks and Sonia Tato. International Programme for Technology and Research in Irrigation and Drainage.
[9] UNDP, 2009 a. Frequently Asked Questions. The UNDP Capacity Assessment Methodology.

recommended that the GEF resources be used to provide financial resources to developing countries so as to meet the capacity needs for training, technical know-how and to strengthen the national institutions.

Capacity development is increasingly recognised as a multi-dimensional and multi-actor process that goes beyond the transfer of knowledge and skills at the individual level and encompasses organizational and institutional dimensions (TAP, 2015)[10]. The focus of CD is on the process rather than just on the acquisition of skills and knowledge to perform a defined task.

Capacity development involves much more than enhancing the knowledge and skills of individuals. It depends crucially on the quality of the organizations in which they work. Capacity is not only about skills and procedures. It is also about incentives and governance (OECD/DAC, 2006)[11].

Analysing the various definitions, it can be summarised that capacity development is the process by which people, organizations and society systematically stimulate and develop their capacities over time to achieve social and economic goals, including through improvement of knowledge, skills, systems and institutions.

Approach to capacity development

According to the UNDP Capacity Assessment Framework (UNDP, 2008 a)[12], at the individual level, capacity building refers to the process of changing attitudes and behaviours;- imparting knowledge; and developing skills while maximizing the benefits of participation, knowledge exchange and ownership. At the institutional level, the Framework focuses on the overall organizational performance and functioning capabilities, as well as the ability of an organization to adapt to change. The aim of the Framework is to develop the institution as a complete system, including individuals, groups and the organization itself.

Traditionally, interventions at the systemic level were simply termed *institutional strengthening*. This reflected a concern with human resource development as well as assisting in the emergence and improvement of organizations. However, capacity development further emphasizes the overall policy framework in which individuals and organizations operate and interact with the external environment, as well as the formal and informal relationships of institutions. Capacity is not the mere existence of potential but rather existing potential must be harnessed and utilized to identify and solve problems in order to be considered as capacity.

Specifically, capacity building encompasses the country's human, scientific, technological, organizational, institutional and resource capabilities. A fundamental goal of capacity building is to enhance the ability to evaluate and address the crucial questions related to policy choices and modes of implementation among development options. The evaluation is based on an

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[10] TAP, 2015. Capacity Development Expert Group Workshop, Montpellier, 19 and 20 March 2015 -Draft Summary Report.
[11] OECD/DAC, 2006. The Challenge of Capacity Development: Working Towards Good Practice.
[12] UNDP, 2008 a. Capacity Assessment Methodology. User's Guide. Capacity Development Group. Bureau for Development Policy.

understanding of environmental potentials and limits and of the needs perceived by people of the country concerned (UNCED, 1992)[13].

(FAO/ IPTRID**,** 2005)[14] suggests five strategic phases/steps to capacity development.

Step 1: The first phase is an assessment to define present capacity within the system. It establishes the baseline and addresses the basic question - **where are we now?**

Step 2: The second phase looks ahead to the future desired state, the vision of what capacity is required on the future and asks the question - **where do we want to go?**

Step 3: The third phase compares the present situation and future desired state, identifies the capacity gaps and plans strategies and actions designed to fill these gaps to achieve the desired goals - **how we get there?**

Step 4: The fourth phase is the implementation phase, fulfilling the strategies and undertaking the planned capacity development activities in order to meet the desired objective and answers the question - **what actions do we take?**

Step 5: The final phase is monitoring and evaluation to feedback experiences into the planning phase and answers the question - **how do we stay there?**

Capacity building vs Capacity development

"Capacity building" and "capacity development" are often used interchangeably.

Capacity development (CD) is a concept that extends the term capacity building to encompass all aspects of creating and sustaining capacity growth over time. CD involves learning and various types of training, along with continuous efforts to develop institutions, political awareness, financial resources, technology systems and the wider social and cultural enabling environment.

Capacity development is used advisedly in preference to the traditional capacity building. The 'building' metaphor suggests a process starting with a plain surface and involving the step-by-step erection of a new structure, based on pre-conceived design. Experience suggests that capacity is not successfully enhanced in this way. According to JICA (2004)[15], the term "building" connotes "creating something that does not exist". The word "development" stresses on endogenous development process.

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[13] UNCED, 1992. Agenda 21 – Chapter 37. National Mechanisms And International Cooperation For Capacity-Building In Developing Countries. United Nations Division for Sustainable Development. https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf

[14] FAO/ IPTRID.2005. Workshop Proceedings on Capacity Development in Agricultural Water Management. Capacity needs assessment - Methodology and processes by Melvyn Kay, Tom Franks and Sonia Tato. International Programme for Technology and Research in Irrigation and Drainage.

[15] JICA, 2004. Supporting Capacity Development in Solid Waste Management in Developing Countries

The term "building" often implies that activities are carefully planned and executed. However, capacity development involves more experimentation and learning (Horton, 2002)[16]. Hence, the term capacity development, which implies an organic process of growth and development, is more appropriate and relevant than capacity building.

Capacity is not something that can be built through a series of carefully planned and executed activities that follow a clear and detailed plan or blueprint with specific time frames and strict budgets. Capacity is an organic process of growth and development involving experimentation and learning. Therefore, many people now speak of capacity development, rather than capacity building.

Experience indicates that capacity development is promoted by the following key factors: (Harvard Business School, 1998)[17]

- An external environment that is conducive to change
- Top managers who provide leadership for institutional change
- A critical mass of staff members involved in and committed to the change process
- Availability or development of appropriate institutional innovations
- Adequate resources for developing capacities and implementing changes
- Adequate management of the capacity development process.

Capacity development and training

Capacity building is much more than training and includes the following:

a) *Human Resource Development:* The process of equipping individuals with the understanding, skills and access to information, knowledge and training that enables them to perform effectively.

b) *Organizational Development:* The elaboration of functional concepts, structures, processes and procedures, not only within the organizations, but also the relationships between different factors, approaches and sectors (public, private, community).

c) *Institutional, Legal and Policy Framework:* Making legal and regulatory changes, strategies and enabling organizations, institutions, agencies and the people at all levels and in all sectors to enhance their capabilities. (UNDP, 2009 b)[18].

Capacity development is fundamentally about change and transformation- at individual, organisational, sectoral and societal levels with long-term investments. Experience shows that capacity development cannot be confined to training although this has often been the case in the past. It is also important to look at the need for organisational change and review the legal and other institutional framework (SIDA, 2000)[19].

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[16] Horton, Douglas.2002. Planning, Implementing, and Evaluating Capacity Development. ISNAR Briefing Paper 50. July 2002.

[17] Harvard Business School, 1998 Harvard Business Review on Change, Boston, Harvard Business School Press

[18] UNDP, 2009 b. Capacity Development: A UNDP Primer.

[19] SIDA, 2000. Capacity Development. Sida Working Paper No. 4. Analysis of Needs for Capacity Development.

ADB (2009)[20] views training as an important part of the capacity development initiative. Organisations are increasingly adapting appropriately targeted and structured training for enhancing knowledge and skills. The organizations are also focusing on bringing a positive change in the attitude of their staff members. Training needs to be driven by the demand of the functionaries at different levels.

Though education and training are treated separately in the human resources and capacity development formation, the two are to some extent overlapping in their modes of implementation and achievements, particularly the case of higher and professional education. Training and capacity building process should be seen as a collaborative learning process, linked to concrete pilot field actions as well as evolving international policy instruments and market opportunities.

Types of capacities

According to UNESCO (2013)[21], four types of capacities are required:

- Institutional capacities (include the rules, regulations and practices that set the overarching contextual environment)
- Organisational capacities (how various actors come together to perform given tasks)
- Individual capacities (technical, functional and leadership skills)
- Knowledge base (creation, absorption and diffusion of information and expertise towards effective development solution).

Figure 2: Capacity Framework (FAO, 2012)

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[20] ADB, 2009. Training Needs Assessment and Strategic Training Plan.
[21] UNESCO, 2013. Towards Effective Capacity Development – Capacity Needs Assessment Methodology (CAPNAM) for planning and managing education.

FAO's corporate strategy on capacity development (FAO, 2012)[22] provides a useful framework for approaching capacity development. The framework is equally relevant for capacity development in EAS (GFRAS[23], 2012).

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 (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, regulatory and economic frameworks; national public sector budget allocations and processes; governance and power structures; incentives and social norms.
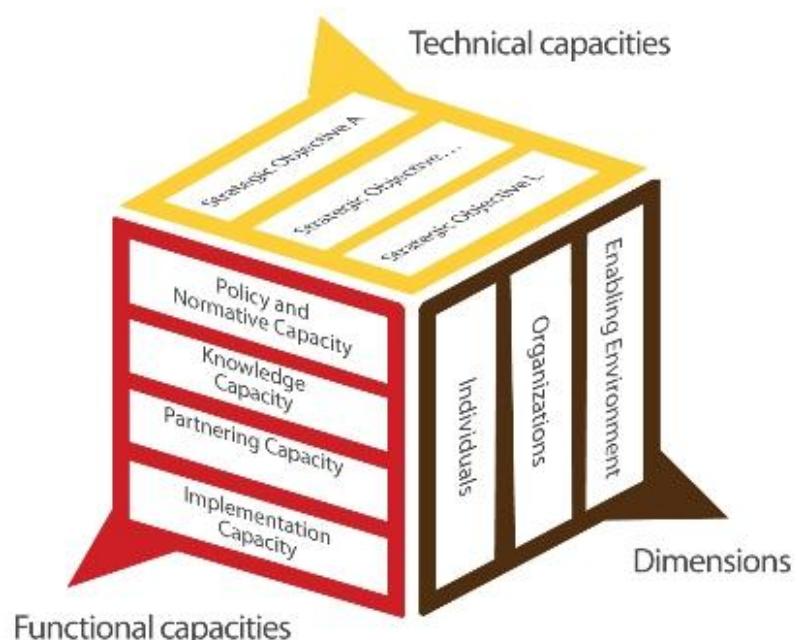

Figure 3: FAO's CD Framework

Source: FAO (2012)[24]

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[22] FAO, 2012. Corporate Strategy on Capacity Development.
[23] GFRAS, 2012. The "New Extensionist": Roles, Strategies, and Capacities to Strengthen Extension and Advisory Services.

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

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.

Capacity assessment

Capacity assessment is a term for the process by which the capacity of a group is reviewed against desired goals, and the capacity gaps are identified for further action.

A Capacity Need Assessment (CNA) is not only about recognising gaps, but also about identifying existing capacity and latent capacity (current capacity that is neither used nor recognised) and ensuring that both are enhanced and clearly linked with the outcomes to achieve a desired result.

UNDP (2009 b)[25] makes the case for capacity assessment as a structured and analytical process, whereby the various dimensions of capacity are assessed within the broader socio-economic environment as well as evaluated for specific organisations and individuals.

UK's Department for International Development (DFID 2003)[26] "Organizational Sourcebook" suggests a number of different possible approaches to assessing organisational capacity, including the following:

- *Open system model* - Considers the strategic and institutional environment, the organisation's inputs and resources, its strategy, culture, human resources management policies, system, structure, output and performance

- *The 7 S model* - Describes interdependent variables to examine an organisation's internal dynamics in terms of strategy, structure, system, shared values, skills, style and staff

- *SWOT*- Assesses an organisation in terms of internal strengths and weaknesses and external opportunities and threats.-

- *Organisational elements model* - Covers inputs, process, products, output and outcomes

- *Problem Tree Analysis* - Establishes the hierarchical relationship between cause and effect by illustrating the linkages between various issues contributing to an institutional problem.

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[24] FAO, 2012. Corporate Strategy on Capacity Development.

[25] UNDP, 2009 b. Capacity Needs Assessment In Disaster Risk Reduction. County, District and Community Assessment, National Disaster Management Commission, Ministry of Internal Affairs, Monrovia, Liberia, UNDP

[26] DFID, 2003. Promoting Institutional and Organisational Development. A Source Book of Tools and Techniques.

How to assess existing capacity and define capacity needs?

The starting point of any capacity development planning process is assessing existing capacity. For any given context that means starting with the initial definition of capacity, in response to the question '*Capacity for What*?', which is then considered at the different levels. Individual, organisational (network/sector) levels are framed in terms of performance and results, and at the institutional level in terms of conditions, but there may be overlaps between these categories (LENCD, 2011)[27].

Steps in the process:

1. Identify (a) key actors and stakeholders and (b) how to engage them in the assessment and analysis

2. Frame the assessment in terms of the following:
- The definition of capacity and any capacity development framework that is being applied in the particular context being assessed
- The purpose of the assessment
- The mandate of the entity to be assessed
- Change readiness and stakeholder agreement about the need for the assessment

3. Decide what to assess and how to analyse data. For example, think about the:
- *Levels of capacity***:** whatever the starting point, 'zooming in and out' leads to a holistic understanding of all the factors enabling or inhibiting performance and capacity change, (see below for an example)
- *Types of capacity:* remember to assess both the hard and soft capacities, including power distribution, incentives and sanctions, leadership, and values and beliefs
- *Themes for application:* the capacity development framework helps in prioritising the areas for the assessment

4. Choose the overall approach and specific tools
- An *incremental* approach (Box 3) starting with identification of existing capacity as the foundation for identifying realistic steps
- A *gap analysis* (Box 3) starting with the definition of how things 'should be', then looking at how they are and defining the difference between the two as what is missing, i.e. 'the gap'
- There are many tools available for different aspects of assessment. They should be adapted to the local context.

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[27] (LENCD, 2011) http://www.lencd.org/learning/howto-assessneeds. Learning Network for Capacity Development.(LENCD)

Box 3: Choosing Assessment Frameworks and Tools

The approach to assessing capacity can start with choosing one of two basic questions – 'What capacity is already in place?' or, 'How should it be and what is missing?', and the choice determines how the assessment is conducted. 'What capacity is already in place?' starts the **incremental** approach of identifying existing capacity and using that as the foundation for moving forward. 'How should it be and what is missing?' starts the **gap analysis** approach, which works from how things 'should be', then looks at how they are now, and define the difference between the two as what is missing 'the gap'.

An **incremental** approach has a much more positive feel to it and, because of its affirmative starting point, it is very helpful for involving targeted stakeholders in participatory self-assessment. The incremental approach defines needs as realistic steps that move the organisation forward in the right direction, rather than aiming for ambitious, high-level capacity targets. The approach has the advantage of being more flexible, allowing key stakeholders to define what they consider to be important for the context, including soft capacities and their role and importance in the overall analysis. The main weakness of this approach is that the stakeholders may not necessarily have the appropriate technical knowledge or other information necessary to frame their next capacity steps in a meaningful way.
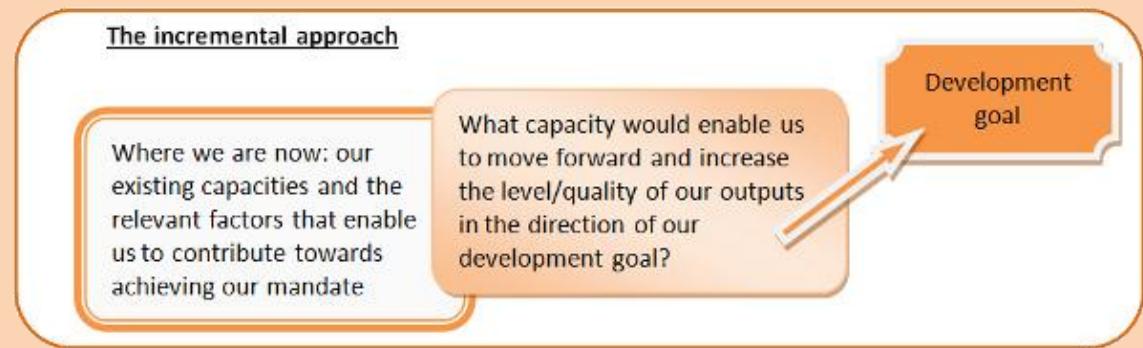
The **gap analysis** tends to be based on externally defined criteria for full and effective functioning of the organisation or sector according to its mandate -- the ideal situation. This approach can be helpful for some types of needs. However, the approach has three weaknesses that need to be taken into account when deciding whether or not to use it. The first is that gap analyses tend not to recognise or value existing capacity sufficiently well to make it the starting point of new initiatives. The second is that the statement of the ideal situation is often far too ambitious to be helpful in setting realistic goals and objectives for moving forward. The third is that gap analyses tend to focus on hard capacities, with little attention given to essential soft capacities. Another problematic aspect of gap analysis is that it tends to depend on outside experts and their assessment of how things should be, which often means that the people concerned do not have sufficient say in the assessment process.

The gap analysis approach

Ideal situation: the system (individual, organisational and institutional) functioning at full capacity

The gap to be filled between the ideal situation and where we are now

Where we are now: What can't be done? What is missing in terms of the ideal situation?

The difference between an incremental analysis and a gap analysis can be shown in a very simple example of a rural school. If at present the school has the capacity to teach only the first two years of the primary school curriculum, an incremental analysis would look at the strengths and capacities that enable the school to teach at that level and ask, what does the school need to build on those existing capacities and move forward to teach year three? The teaching staff and other local stakeholders would be the primary informants for the data gathering. The gap analysis would start with the assumption that the school should be able to teach the full primary curriculum and specify why the school can't do it, in terms of its weaknesses and what is missing.

Source: LENCD (2011)

What to assess?

The entry point and the focus of assessment are decided by several factors: the way that capacity is defined; any capacity development framework in use; the mandate of the entity being assessed; and the purpose of the assessment.

Guiding principles for assessing capacity

Milen (2001)[28] offer some guiding principles for assessing capacity:

- *Being realistic when assessing capacity:* In most cases, existing capacity can provide a useful starting point to design future capacity. Experience suggests that it is better to build from existing strengths rather than inventing something new from scratch.
- *Capacity assessment must follow policy, but policy must be in place:* Capacity assessment should follow policy or programme goals. Therefore, the nature of the assessment needs to vary according to the nature of these goals. Furthermore, effective policy reform is an essential prerequisite.
- *A continuous process:* Capacity is not static. Rather, it is continually developing and changing – a dynamic process. The process is lengthy and requires continuous attention and investment. The capacity of an individual or organization is never complete or in a steady state.

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[28] Milen, A. 2001. What do we know about capacity building? An overview of existing knowledge and good practice. World Health Organization. Geneva.

- *Involving all levels:* Initial capacity assessment activities may focus on a particular area; although it is important to find ways of involving all levels at some stage. The initial focus may be on strengthening an organization.
- *Perform in stages:* Capacity assessment needs to be accomplished in stages, because the nature and detail of the process depends on the state of the organization or system.
- *Finding the appropriate entry point:* Finding the most appropriate entry point for assessing capacity is critical to a successful outcome. Logically assessment should start with the big picture at the level of the enabling environment and then proceed to the lower levels. UNDP suggests the most common entry point is at the organization level.

UNDP (UNDP, 2008 b)[29] has developed a capacity assessment framework which has three dimensions:
- *Points of entry:* Capacity resides at three levels, viz., enabling environment, organisational and individual. Each of these can be the point of entry for a capacity assessment.
- *Core issues:* Four core capacity issues identified are as follows: institutional arrangements, leadership, knowledge and accountability.
- *Functional and technical capacities:* Depending on the context, there are three levels which are described as follows:
  Individual: Refers to the process of changing attitudes and behaviours-imparting knowledge and developing skills while maximizing the benefits of participation, knowledge exchange and ownership.
  Institutional: Focuses on the overall organizational performance and functioning capabilities, as well as the ability of an organization to adapt to change.
  Systemic: Emphasizes the overall policy framework in which individuals and organizations operate and interact with the external environment.

Table 1: Matrix for Assessing Capacity

Dimensions of Capacity	Existing capacity	Possible future capacity	Estimated capacity gap	Possible strategies
Environment- Level 1				
Policy framework				
Legal & regulatory framework				
Management accountability				
Resources				
Processes and relationships				
Organisation- Level 2				
Strategic management				
Culture/structure				
Processes				
Human resources				
Financial resources				

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[29] UNDP, 2008 b. Capacity Assessment practice note.
http://www.undp.org/content/dam/aplaws/publication/en/publications/capacity-development/capacity-assessment-practice-note/Capacity Assessment Practice Note.pdf

Information resources				
Infrastructure				
Inter-relationships				
Individual – Level 3				
Job skills & needs				
Professional development				
Access to information				
Performance/incentives				
Values/attitude/motivation				
Relationship/interdependence				
Professional integrity				
Communication skills				

Source: (UNDP 1997)[30]

FAO Capacity Assessment

The FAO Capacity Assessment (FAO, 2010)[31] attempts to assess the three dimensions of CD framework. The assessment is in the four functional capacity areas through a series of questions, which are sector-specific. If the assessment concerns a functional capacity such as the Policy and Normative capacity, the questions seek to broadly identify the existing legal and regulatory framework related to the sector under assessment. The questions should also help to understand how these laws are implemented in practice, such as the internal capacity of regulatory agencies in terms of mandates, strategies, inter-sectoral collaboration, processes and systems, human and financial resources, knowledge and information management, skill levels and learning needs. The assessment process focuses on dialogue, collection and analysis of qualitative information related to major issues, perceptions and suggestions of various stakeholders on the dimensions (enabling environment, organizations, individuals) and capacity areas.

The questions can be summarised in the form of a matrix (Table 2) which can be used for bringing together the assessment results:

- The first and second column show the dimensions and the selected capacity areas under assessment
- The third column provides a snapshot of the existing situation and lists the main findings generated by the context analysis and the key informant/group interviews
- The fourth column includes the suggestions of national stakeholders on where they wish to be in the medium term
- The fifth column compares the present with the future situation and identifies the needs

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[30] UNDP, 1997. Capacity Development Technical Advisory Paper 2, Management Development and Governance Division.
[31] FAO, 2010. FAO Capacity Assessment Approach and Supporting Tools- Discussion Draft.

- The last three columns are for listing suggested interventions, responsible actors as well as to assign priorities to the future interventions for each capacity area. The priorities can be assigned as: 1- Urgent; 2- Medium term, 3- Long term, 4- Not a priority

Table 2: A summary of the FAO Capacity Assessment Matrix

Dimensions	Capacity areas	Existing situation	Desired situation	CD needs	Suggested interventions	Responsible actors	Priorities 1 - urgent 2 - medium term- 3 - long-term 4 - not a priority
Enabling Environment	Policy and legal frameworks						
	Economic framework and national public sector budget allocations						
Organizations	Institutional motivation						
	Operational capacity						
Individuals	Skills levels						
	Competency development						

III. CAPACITY DEVELOPMENT FOR AGRICULTURAL INNOVATION

Many developing countries are endeavouring to address the major challenges facing agriculture and natural resources management, which can be addressed through effective agricultural innovation (Box 4). However, the countries lack resources and capacities to develop their innovation systems effectively. There are numerous existing interventions targeted at addressing the gaps in capacity, education, and knowledge in agricultural innovation in tropical areas. Taken together, these interventions have insufficient alignment with country, regional

policy, planning frameworks and institutional development needs. There is very little coordination and synergy between each other (TAP, 2013)[32]. Strengthening local capacities and institutions remains a major challenge for the effective design and implementation of agricultural and rural development programs and policies in developing countries.

Box 4: Tropical Agricultural Platform

The Tropical Agriculture Platform (TAP) was initiated by G20 to promote agricultural innovation in tropical countries. To achieve this goal, TAP acts as a multilateral and dynamic facilitation mechanism that enables more effective and streamlined capacity development interventions in AIS. TAP was created to focus specifically on capacity development in the Least Developed Countries (LDCs), more than 90% of which are located at least partly within the tropics.

TAP provides a mechanism for all actors to communicate; exchange ideas, knowledge, experiences, and practices; and work in a more coordinated way, learning from each other about capacity development policies and practices that work. Interventions do acknowledge national leadership and ownership and are aligned with national plans and demands. TAP fosters partnerships and shared visions to steer agricultural innovation along a more coherent path and to arrive at development solutions at scale with lower transaction costs.

TAP also works to establish close linkages with relevant existing multi-partner initiatives that promote coherent institutional approaches, such as those being implemented by regional fora and international agencies.

Source: GFAR, 2014.[33]

Agricultural Education and Training (AET) has a major role as a creator of capacity and supplier of the human resources that populate key segments of the AIS and enable that system to function more effectively. Aside from the technical knowledge that is the traditional focus of AET, graduates require knowledge and tools to (a) recognize innovative ideas and technology, (b) catalyse communication between other AIS actors, and (c) provide feedback to researchers and investors. Graduates particularly require new "soft skills" such as leadership, communication, negotiation, facilitation and organizational capabilities. Employers increasingly demand these skills, which foster active participation in the AIS (Maguire, 2012)[34]. Apart from the diploma, graduate and post graduate education, in-service training should also be used to maximise the use of previously acquired knowledge and skills. Experience from peers and advances in knowledge and skills in different areas can be leveraged.

TAP organised three regional assessments during December 2012 to August 2013 to define the current priorities, capacities and needs in AIS in selected target countries. The three regional assessments of AIS were conducted by three partner organizations located in the regions: Forum for Agricultural Research in Africa (FARA) in Africa, International Center for Tropical

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[32] TAP, 2013. Capacity Development for Agricultural Innovation Systems- Key Concepts and Definitions

[33] GFAR, 2014. http://www.egfar.org/news/imported/gfar-meeting-fara15

[34] Maguire, 2012. Module 2: Agricultural education and training to support agricultural innovation systems. Overview. Agricultural Innovation Systems: An Investment Sourcebook. The World Bank.

Agriculture (CIAT) in Latin America and Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) in Asia (see Annexure 1 for more details)

The methodology for the regional needs assessment consisted of the following:
- Review and mapping of stakeholder's involvement in national AIS
- Review of the institutional and political context
- Review of capacity levels and needs
- Questionnaire based survey on perceived gaps distributed to stakeholder organisations of the target countries.

The final reports of the regional needs assessments revealed two aspects:
- Many of the institutions involved in agricultural research and extension are highly dependent on development assistance.
- Capacity development interventions in agricultural innovation are often focused on individual rather than the enabling environment and organizational dimensions of capacity.

AIS often lack incentives to respond to the expressed needs of local producers, producer cooperatives and agribusinesses.

The needs assessments in the three regions identified constraints that all the selected low-income tropical countries seem to have in common. Some constraints are as follows:,
1. Capacity development (CD) interventions from internal and external actors are not sufficiently targeted to meet the AIS capacity needs of tropical countries.
2. CD interventions are frequently implemented independently from each other, and are often too small in scale, narrow in scope, and neglect institutional and organizational capacity dimensions.
3. High-level political and operational mechanisms to coordinate interventions for capacity development in tropical AIS are lacking.

Promoting application of new knowledge at a scale is one of the main functions of EAS. Research into this process revealed that several functions, activities and tools (Figure 4) are critical for enabling innovation, which is collectively referred to as 'innovation management tasks' (Sulaiman et al., 2010)[35]. Building capacities for innovation management in extension and advisory services would, to a large extent, allow extension and advisory services to respond better to this changing environment. To build this capacity, three aspects need to be considered.

First, the focus of capacity building should shift from strengthening technical expertise to developing innovation management expertise. Capacity building within the context of

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[35] Sulaiman, R.V., Andy Hall, Vamsidhar Reddy, T.S. and Kumuda Dorai (2010). Studying Rural Innovation Management: A Framework and Early Findings from RIU in South Asia. RIU Discussion Paper Series #2010-11, December 2010, Research Into Use (RIU): UK.

extension is often understood as enhancing technical capacity of extension personnel to deal with current and emerging technological bottlenecks in the field. This is often achieved through training in and demonstration of new technologies and training in communication skills. As technology dissemination is only one element of innovation management, the focus of capacity-building within extension and advisory services should move towards building capacity in other functions and activities that are critical for applying new knowledge.
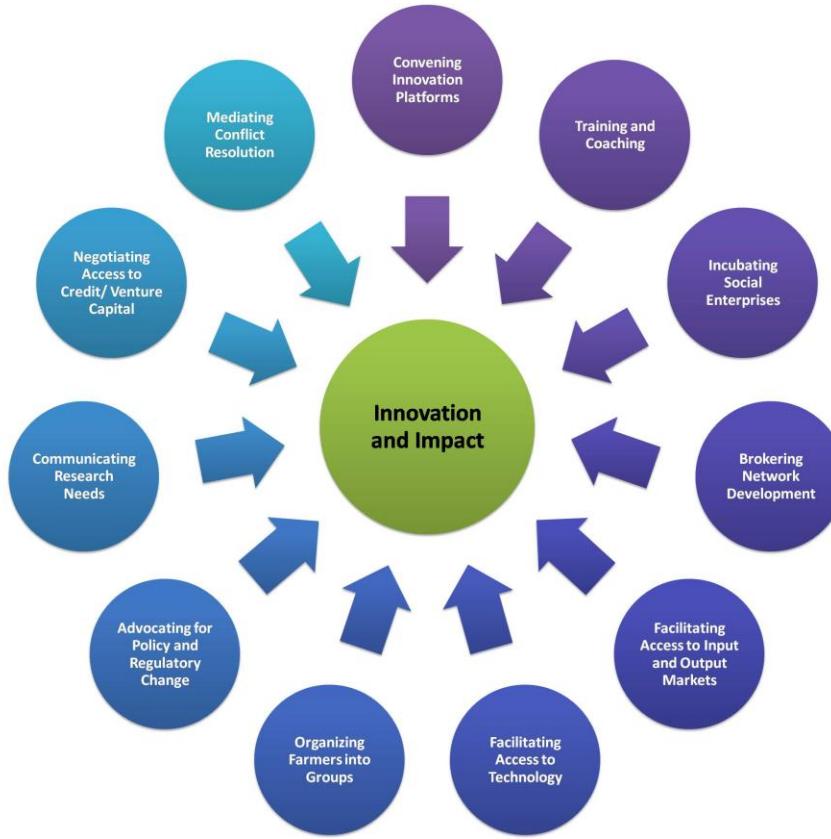
Figure 4: Innovation Management Tasks

Second, skills and expertise in some of these areas can only be learned by action on the ground. Therefore, the approach to building capacity must be designed in an action-research mode, involving experimentation, reflection and learning. Developing new platforms for interaction by various actors (e.g., stakeholder dialogues) and promoting joint interventions by coalitions of different actors are two important means of developing this capacity. Creating a platform to share successes, mistakes and failures and subsequent reflection is essential. Developing better habits and practices that promote wider interaction and learning is perhaps the greatest challenge for building capacity in extension organizations.

Third, extension and advisory services must be staffed with people with expertise in some of these tasks. While partnering with other organizations to access diverse skills and expertise continues to remain important, extension should have a core group of specialists with some of these skills to technically backstop extension personnel.

IV.   CAPACITY DEVELOPMENT FOR EXTENSION AND ADVISORY SERVICE (EAS) PROVIDERS

An effective and efficient agricultural extension system, in terms of services, methods and processes, is a prime mover of agricultural growth and development. Historically public extension services were established and strengthened to disseminate new information 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 subsequently leads to improved productivity and increased incomes. In other words, the role of EAS was about communicating innovation. While this kind of approach has some value in promotion and application of simple technologies by individual farmers in well-endowed regions, the new challenges remain.

Since the early 90s, the nature of agriculture has begun to evolve rapidly. Though agricultural production and productivity have generally increased, poverty (including nutritional insecurity) is widespread in many of the less-favoured agricultural regions. Managing the natural resource base in a sustainable and integrated manner is essential to maintain and improve land productivity. Opening of agricultural markets has further increased the vulnerability of poorer countries, especially small farmers, who have weak bargaining power and limited political voice. 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. Climate change has made agriculture more vulnerable to extreme weather events and managing scarce water resources is an increasing challenge.

These new challenges also mean that that EAS need to tackle a diversity of objectives that include, but go well beyond, transferring new technology. This encompasses the need to (a) link more effectively and responsively to domestic and international markets[36] where globalization is increasing competition; (b) reduce the vulnerability and enhance the voice of the rural poor[37],[38] (c) promote environmental conservation[39]; (d) couple technology transfer with other services relating to credit, input and output markets[40],[41]; and (e) enhance the capacity development role that not only 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[42],[43].

[36] Swanson, B.E. and Rajalahti, R. (2010) Strengthening Agricultural Extension and Advisory Services.

[37] Swanson, B.E. and Rajalahti, R. (2010) Strengthening Agricultural Extension and Advisory Services. Washington, DC, The World Bank, ARD Paper 45.

[38] Berdegue, J. A. and Escobar, G., (2001) Agricultural Knowledge and Information System and Poverty Reduction. AKIS Discussion Paper, The World Bank.

[39] Alex, G., Zijp, W. and Byerlee, D. (2002) Rural Extension and Advisory Services-New Direction, Rural Development Strategy Background Paper No 9, Agricultural and Rural Development Department, The World Bank, Washington DC.

[40] Neuchatel Group (2002) Common Framework on Financing Agricultural and Rural Extension, Neuchatel Group, Swiss Centre for Agricultural Extension and Rural Development, Lindau.

[41] APO (2006) Enhancement of Extension Systems in Agriculture, Sharma, V.P. (eds) Report of the Seminar on Enhancement of Extension Systems in Agriculture, Asian Productivity Organisation, Tokyo.

[42] Sulaiman, R.V. and Hall, A. J. (2003) India: The emergence of Extension- Plus: Future for Extension Beyond Technology Transfer? In Rivera W M and Alex, G. (eds) Volume 1. Decentralized Systems, Case Studies of International Initiatives Agriculture and Rural Development, Discussion Paper 8, Extension and Rural Development, Washington DC.

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 AIS. Moreover solutions for most of the new challenges would require 'new forms of interaction, organisation, and agreement between multiple actors'[44].

Currently innovation is increasingly recognised as a process by which new knowledge is generated, diffused, adapted and used to result in social and economic change. This process requires interaction and knowledge flows among multiple actors within the AIS (GFRAS, 2012). It also means that merely communicating new knowledge and information (the traditional task of public extension) is not sufficient to bring about innovation. EAS has to play several other roles if it has to enable innovation. The AIS is increasingly recognised as useful to strengthen capacities in EAS. A 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.

As a framework for building capacity, the idea of an AIS (Mbabu, N. A. and Hall, A . 2012)[45] embodies many principles including the following:

- *Organisational and system focus*: Organisations need to build a range of skills and competencies, which include tackling the enabling environment of the system through policy and institutional changes
- *Hard and soft skills focus*: Most important are the facilitation and negotiation skills
- *Institutional development focus*: An effective innovation capacity is one that can generate the policy and institutional changes
- *Facilitation rather than training*: It is more effective to facilitate organisations to explore their goals and performance and to help organizations develop their own effective ways of working
- *Learning and performance management focus*: A systems perspective on capacity development places great emphasis on learning and performance management. Emphasis on learning means that monitoring and evaluation systems are a critical capacity building tool helping to continuously reflect on performance and improves ways of working
- *Capacity building as a dynamic, ongoing process*: Learning by doing, reflection and adaptation are considered key elements of capacity development
- *Need for organisations with an intermediary role*: There is a need for actors in the system with a definite role in facilitating links between organisations

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[43] Christoplos, I., (2010) Mobilizing the potential of rural and agricultural extension, Food and Agricultural Organisations of the United Nations and the Global Forum for Rural Advisory Services.

[44] Leeuwis, C and van den Ban, A.W. (2004) Communication for Rural Innovation: Rethinking Agricultural Extension (3rd Edition) Wiley, Chichester, UK.

[45] Mbabu, N A and Hall, A 2012, Capacity Building for Agricultural Research for Development – Lessons from Practice in PNG, UNU-MERIT, Netherlands

GFRAS (2012) has identified new capacities for EAS considering the evolving challenges in agriculture and the new roles, functions and reform strategies envisaged. EAS should have technical and functional capacities to promote appropriate agricultural technologies, apply participatory approaches, help organise producers, understand market and value chains, and address changing forms of social and economic vulnerability and climatic and market forces. The FAO Framework (2012)[46] envisages functional and technical capacities across three levels -- individual, organisational and enabling environment level.

At the individual level, EAS need staff with good understanding of technical knowledge plus skills to manage social processes. At the organisational level, EAS should have capacities to put in place systems and procedures to manage human and financial resources, institutions to facilitate partnerships and learning, and frameworks to deal with institutional, legal, and regulatory issues. At the enabling environment level, capacities for interaction, learning, and adaptation are important.

GFRAS provides a long list of hard and soft capacities at individual level, which is furnished in Table 3.

Organisational level capacity includes individual organisations, systems, procedures and institutional frameworks which basically allow an organisation to operate and deliver demand driven services. Capacities required at the organisational level in EAS as given by GFRAS are furnished in Table 4.

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 hamper) development of an organisation. 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 (a) ensure fair competition, (b) offer a level playing field and (c) enable collaboration among different EAS providers.
The enabling environment could be influenced by building the following capacities:
- Capacity of policy making bodies to adapt policies based on lessons learned from policy implementation
- Initiating joint activities and collaboration between organisations in the AIS and the actors of the farm sector
- Supporting organisation of workshops, seminars and joint evaluation that would bring out major areas that needs policy attention
- Organising sector co-ordination mechanisms and multi-stakeholder working groups to develop and manage relationships among multiple actors

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[46] FAO, 2012. Corporate Strategy on Capacity Development.

- Generating adequate data that are required for evidence based policy advocacy and decision making
- Sharing information on the activities of the EAS with farmers and different stakeholders
- Managing relationships with the media.

Table 3: 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

Source: GFRAS, 2012.

Table 4: 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 and 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

Source: GFRAS, 2012

It would be really useful to review the curricula of academic programmes in extension and also the contents of the in-service training programmes for extension. The review helps in understanding how far the knowledge and skills required for dealing with current challenges are covered in the curricula. A review of the AET curricula in South Africa revealed that "there is a marginalisation of agricultural extension subjects and content in the majority of agricultural qualifications offered at the institutions that formed part of the research. It was found that extension modules were totally absent in the majority of cases; it featured as an elective in few programmes and as a required area of learning in a very small number of qualifications. This implies that the current agricultural education system is not producing agricultural graduates that are geared and skilled to work with the majority of farmers in the country (namely land

reform beneficiaries and emerging and resource poor farmers) within an extension context"(DAFF, 2008).[47]

So far, only very few countries have identified the specific competencies needed by extension professionals. South African extension service (Department of Agriculture/ South Africa ,2005) [48] has suggested that EAS has to be competent in the following areas:

- Willing and able to deliver services effectively and efficiently
- Exchange information and ideas in a clear and concise manner
- Explain, persuade, convince and influence others to achieve the desired outcomes
- Plan, manage, monitor and evaluate specific activities in order to deliver the desired output
- Promote the generation and sharing of knowledge and learning in order to enhance the productivity of farmers
- Explore and implement new and innovative ways of delivering services that contribute to the improvement of productivity of farmers.
- Identify, analyse and resolve existing and anticipated problems in order to reach optimum solutions.
- Display and build the highest standards of ethical, moral and professional conduct in order to promote confidence, credibility and trust in extension.

In addition to the spectrum of agricultural production (technical) related knowledge and skills required by Extensionists to cater in the majority of emerging farmer's needs, the following list (Table 5) reflects so-called non-production skills and competencies to facilitate and support farmers with the management and general operation of their business enterprises:

Table 5: Required Non-Production Skills and Competencies

Broad Areas	Related Topics to enhance skills and competencies
Agricultural Economics	Agricultural marketing Branding Packaging Distribution
Agricultural Management	Farm management Farm planning
Community Development	Communication skills Conflict management Facilitation skills
Business Skills	Business plan development (including economic viability) Basic financial management (including Business Plan Development) Human resources management Project management (including project viability)

Source: Department of Agriculture/South Africa (2005)

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[47] DAFF, 2008. Evaluation Of Agricultural Education And Training Curricula In South Africa.
[48] (Department of Agriculture/ South Africa ,2005). Norms And Standards For Extension And Advisory Services In Agriculture.

The proposed training should address skills and knowledge shortfalls on the topics catering to the broader areas of agricultural economics, agricultural management, community development and business skills.

As part of the New Extensionist Learning Kit Development, the GFRAS Consortium on Extension Education and Training has identified the following (Box 5) as the core competencies for extension professionals (at the individual level).

Box 5: Competencies Required: Extension Professional Should be Able to…
- Define the framework of AIS and position himself or herself within the innovation system
- Define his or her new roles and new capacities that are required for the new extensionist
- Practice adult learning design and implement adult learning programmes
- Initiate and support social networks for agricultural innovation
- Communicate with all stakeholders in the AIS
- Manage knowledge effectively
- Identify and use appropriate ICTs
- Identify cultural and gender implications in communication and innovation
- Vision and organise demands
- Build local organisational capacities
- Broker and build linkages with actors in the innovation system
- Give an overview of paradigms/ principles/methods/approaches/systems
- Explain the role of extension in innovation and development
- Define concept of the new extensionist
- Conduct extension programme planning, implementation, monitoring, and evaluation
- Use different types of problem solving techniques
- Build strategic partnerships, network, and manage stakeholders
- Pluralism in extension and the need for and methods of coordination and linkages
- Conduct livelihoods assets assessment
- Use problem solving and decision making approaches
- Explain leadership principles and leadership development
- Explain implications of culture and diversity, including gender and youth
- Mobilise resources
- Explain basic concepts and tools for value chain approaches
- Link farmers to market (input and output markets)
- Analyse consumer preferences
- Respond to standards certification and regulatory systems
- Analyse business opportunities and conduct market analysis
- Promote farm entrepreneurship
- Explain or define theory, models, and types of groups and organisations
- Manage group dynamics
- Explain how the policy environment and "rules of the game" influence organisations
- Appreciate gender differences
- Undertake gender analysis
- Use gender sensitive approaches
- Attract and retain youth in agriculture

• Enhance adaptive capacities of communities to different types of risks and uncertainties related to climate change, markets and disasters
• Analyse tools for adaptation options
• Deal with risks, change, and uncertainties
• Apply values and good principles such as honesty, respect, accountability inclusion, transparency, integrity
• Recognise extension as a science and extension as a profession

Source: GFRAS, 2015[49]

The Ohio State University in the United States has identified the following 14 competencies (which are grouped conceptually into three clusters in Table 6) as the core competency for extension professionals. Similarly many of the Land Grant Universities in the United States have identified core competencies for their extension staff.

Table 6: Core Competency for Extension Professionals

People (Interpersonal)	The Business of Extension	Self (personal competencies)
Communication	Customer service	Continuous learning
Diversity	Knowledge of extension	Flexibility and change
Interpersonal relationships	Resource management	Professionalism
Teamwork and leadership	Technology adoption and application	Self-direction
	Thinking and problem solving	
	Understanding stakeholders and communities	

Source: OSU (2013)[50]

SIDA (2000) has developed a simple tool (mainly for the analysis of extension work in the agricultural sector) to understand the capacity gaps at different levels (Table 7).

Table 7: Matrix for Understanding Dimensions of Capacity Development

Dimensions	Reasons for not putting knowledge into practice			
Levels / Categories	Lack the knowledge (Don't know what to do)	Don't want to do it	Not allowed to do it	External limitations (Money/Material)
Individual level				
Organizational level				
Institutional framework				

Source: SIDA (2000)[51]

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[49] GFRAS, 2015. New extensionist learning Kit.Modules and competencies required.
[50] OSU, 2013. http://extensionhr.osu.edu/compmodel/corecomp.htm

To conclude, identification of core competencies is an important step towards assessing capacity gaps. This identification should start at the organisational level and it should guide the whole capacity development strategy from hiring of staff to their professional development and evaluation of performance. However, the depth, scope, and weight of each competence varies due to differences across job descriptions, classifications, and unit expectations. In the case of EAS, capacity could be defined as the ability to deliver effective services for the benefit of farmers. Components of the capacity would be physical resources such as the existence of infrastructure for carrying out extension services in the field, sufficient extension personnel with the right set of skills and knowledge, and so on. Where the entity's mandate is clear, perhaps defined by law or in a mission statement, this can be the starting point for assessing current capacity and future needs. Where the mandate isn't clear, it is harder to assess those issues and it could, in fact, represent a capacity need in its own right. This is a crucial issue.

V.   CAPACITY DEVELOPMENT OF Extension And Advisory Service (EAS) IN INDIA

EAS in India

India has a wide diversity of extension service providers representing the public, private and the voluntary sector (Box 6). Most of them provide new information, knowledge and skills through trainings; visit to farmer groups; organizing demonstrations, farm schools and exhibitions; and disseminating information through different media and ICT tools such as mobiles. Farmers also visit research centres and extension units to access new information and knowledge and also go to other districts and states on exposure visit currently supported by ATMA. But it is quite astonishing to note that the large majority of farmers are not getting adequate support in addressing their expanding and complex challenges. Many of them remain untouched from many of these initiatives.

> **Box 6: EAS in India -- Current Status**
> India has a complex extension network comprising of government departments at the national, state, district and village levels, as well as universities, private sector, research institutes, semi-autonomous and autonomous bodies, and civil society institutions (NGOs)(IFPRI, 2013)[52]. In terms of number of staff and organizational reach, the public sector extension staff of the Department of Agriculture (DoA) of the states dominates extension provision in India. Majority of the states have their staff up to Block level and they perform multiple roles. Over the past few years, the ATMA (Agricultural Technology Management Agency) programme has helped the states to fund additional manpower for extension activities at the block level (ATMA is a district level autonomous agency entrusted with the role of agricultural technology management in the district). Compared with the DoA, the other line departments, such as animal husbandry, fisheries, horticulture, sericulture have only very few field personnel. Research and Extension in some of the select commodities such as Rubber, Spices, Coffee and

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[51] SIDA, 2000. Capacity Development. Sida Working Paper No. 4. Analysis of Needs for Capacity Development.
[52] IFPRI, 2013. http://esa.ifpri.info/files/2013/02/INDIA-Extension-and-Advisory-Services-387KB.pdf

Tea are handled by the respective Commodity Boards functioning under the Central Ministry of Commerce.

The Indian Council of Agricultural Research (ICAR) has set up 642 Krishi Vigyan Kendras (KVK or Farm Science Centres) that are engaged in promoting technology application through on-farm trials, demonstrations and training. ICAR has also established Agricultural Technology and Information Centres (ATICs) in some of the State Agricultural Universities (SAUs) and ICAR institutes mainly to serve as a single window offering the institute's technology, advice and products. The Directorate of Extension of the State Agricultural Universities are engaged in training extension staff and promoting new technologies through publications, exhibitions and use of media. SAUs also engage in some extension activities, often in villages near to their location. They do support the state DoA in terms of technological backstopping by way of training and problem solving advisory support. Some states such as Punjab and Andhra Pradesh have established extension centers in each district to directly advise farmers.

To tap the expertise of a large pool of agricultural graduates in the country, the Ministry of Agriculture in association with NABARD (The National Bank for Agriculture and Rural Development) and MANAGE is implementing the Agri-Clinics and Agri-Business Centres (ACABCs) Scheme. The objectives of this scheme are as follows: (a) supplement the efforts of government extension system; (b) make available supplementary sources of input supply and services to needy farmers; and (c) to provide gainful employment to agricultural graduates in new emerging areas. Till July 2015, 18571 agri-ventures have been established with support from this programme. The Government has also been using the media, especially the radio and television to promote information on different aspects of agriculture. The MoA initiated the "Kisan Call Centre" (KCC) scheme in January 2004 to provide information to farmers seeking information on telephone, by the local agricultural specialists in their local language.

India has a number of NGOs with varying levels of capacity, implementing a wide range of programmes. Most of the private companies engaged in seed, fertiliser and pesticides organise some extension programmes mainly to promote their specific products. Some of them also organise farmer training programmes, conduct farmers meetings, organise crop seminars, arrange soil testing facilities and also implement village-adoption programmes. There are a large number of private input dealers (about 280,000) selling agri-inputs who also advise farmers on input use. Some of the major agri-business firms engaged in procurement of produce for processing have initiated innovative arrangements to provide farmers with integrated production and marketing support. Private consultants also advise farmers but these are restricted to mostly high value horticultural crops. Apart from these there are several mobile advisory service providers who provide SMS/text based advisory services covering weather, market prices and crop advisory to their subscribers.

User groups, including farmer interest groups, farmer clubs, commodity groups, women farmer groups, special interest groups' etc play a very important role in extension. Government is also keen on promoting farmer organizations as it could create mechanism at the village level among farmer members to empower them for their own problem solving.

"Despite the variety of agricultural extension approaches that operate in parallel and sometimes duplicate one another, the majority of farmers in India do not have access to any source of information" (Glendenning, et al 2010)[53]. At all India level, around 41 percent of the cultivating households accessed technical help from any of the listed agencies/ sources (extension agent, Krishi Vigyan Kendra, Agricultural University/College, Private commercial agent, progressive farmers, Radio/TV/Newspaper/Internet, Veterinary Department, NGO etc) during the period July 2012 to December 2012. Progressive farmer and radio/ TV/newspaper/ Internet were the two main sources accessed by the agricultural households for technical advice (NSSO, 2014)[54].

Several initiatives were taken during the XI Plan (2007-2012) by the Planning Commission and the Ministry of Agriculture to strengthen extension provision. For instance, the expansion and strengthening of ATMA brought additional funds for field extension activities and also for hiring staff at the district and block level. It also strengthened the manpower for extension training at the state level training centre (SAMETIs). The additional central assistance for agriculture through the RKVY (Rashtriya Krishi Vikas Yojana) brought additional funds for agricultural development at the district level. During the Twelfth Plan (2012-2017), the Central Government has taken forward these initiatives by amalgamating some of these schemes and initiating a new National Mission on Agricultural Extension and Technology (NMAET). The new Mission consists of four sub-missions including "Sub Mission on Agricultural Extension" (SMAE).

Though there is greater attention at the Central Government level on enhancing funding and promoting reforms in extension, a corresponding interest to invest more resources in extension or experiment with new extension models is not witnessed in many states. Extension reforms depend fully on the central assistance which is somewhat worrying. Though the private and the NGO sector are increasing their field presence and broadening their support to farmers, these are not widespread across all regions/districts or blocks. The following point to the inability of extension services to address the knowledge and support needs of farmers:
- The huge yield gaps (between demonstration fields and farmer fields as well as huge variation in yields among farmers within the same block)
- The agrarian crisis or the rural distress being witnessed in several districts
- The increasing migration from rural-to-urban areas in search of employment

Capacity Development initiatives in EAS in India

Importance of developing new capacities among EAS has been highlighted by the Twelfth Plan Working Group on Agricultural Extension, constituted by the Indian Planning Commission. The working group reiterates that a strong, vibrant and responsive extension with an expanded mandate is a prerequisite for achieving a faster, sustainable and more inclusive growth through

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[53] Glendenning, C, Suresh Babu and Kwadwo A Okyere (2010), Review of Agricultural Extension in India- Are farmers' Information Needs being met?, IFPRI Discussion Paper 01048, December 2010, available at http://www.ifpri.org/sites/default/files/publications/ifpridp01048.pdf
[54] NSSO (2014) Key Indicators of Situation of Agricultural Households (70th Round), Ministry of Statistics and Programme Implementation, Government of India http://mospi.nic.in/mospi_new/upload/KI_70_33_19dec14.pdf

agriculture. The working group also recommends that annual competency assessment of every extension personnel may be done to identify capacity gaps and needs for training planning, manpower development and career progression. The recommendation also includes strengthening of institutions like MANAGE, EEIs and SAMETIs to enhance their capacity and support capacity building of extension professionals.

"The rapid changes in the nature of agriculture and rural sector during the last two decades have reiterated the need for expanding the mandate of extension services beyond disseminating technologies. However, ways of operationalizing this expanded vision and building the needed capacities haven't been very well articulated so far. There is a need to develop a sound Human Resource Development (HRD) policy for continuous development of capabilities of farmers, extension personnel and other stakeholders. Farmers' capacity building has to be central to the HRD policy so that over the period they should be able to manage their farming enterprise and decide & control his destiny. The HRD policy should aim at building capacities of all extension service providers in agriculture and allied sectors representing public, private and civil society" (Planning Commission, 2012).[55]

In this context, the Working Group on Agricultural Extension for Agriculture and Allied sectors for the Twelfth Plan constituted by the Planning Commission, Government of India has put forward the proposal to develop an HRD policy for Extension in Agriculture and allied sectors based on a census of extension service providers and supported by Agricultural Extension.

Areas for capacity development

A national workshop on "Redesigning Agricultural Extension in India" jointly organised by NAARM and IFPRI in August 2010 has recommended the following:

Human resource development is a critical imperative for redesigning agricultural extension at all levels. While a large network of infrastructure exists for training and capacity building of farmers and extension personnel, new training areas such as quality management, post-harvest management and product development, environmental safeguards in food and agriculture, intellectual property rights, biodiversity conservation, group mobilization, etc should be accorded due space and time in HRD. There is a need to enhance the capacity of the staff at the middle and lower levels to design, experiment, learn and improve locally relevant approaches.

There should be rigorous capacity building of extension personnel to promote professionalism, partnerships, pragmatism, prudence, technology interface (ICTs) and pride in the form of morale boosting, attitudinal improvement and knowledge intensive training programmes in addition to skill development.

The Twelfth Plan working group on Agricultural Extension noted that "to remain relevant, extension personnel would require competencies in technical, organizational, managerial,

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[55] Planning Commission, 2012. 12th plan Working group report on Agricultural extension.
http://planningcommission.nic.in/aboutus/committee/wrkgrp12/agri/wg_agriextn.pdf

communication and business skills. Expertise of extension personnel needs to be strengthened in frontier areas of technology (for instance, biotechnology) and conventional areas like resource conservation and management. Market related skills must be the top priority of all HRD initiatives" (Planning Commission, 2012).

The AESA e-discussion (AESA, 2015)[56] has identified some of the following areas for developing capacity among EAS:
- Development of producers as effective producer groups/organisations - social mobilisation, developing forward and backward linkages
- Management of natural resources
- Traceability, good agricultural practices
- Contingency crop planning to better adapt to climate change
- Capacities for partnering and Implementation
- Development of value chains and sustainable farmer business enterprises
- Entrepreneurship and business management
- Support farmers to move from subsistence farming to commercial farming

The participants noted that capacity development is important not only at the production/cultivation stage, but across entire value chain including processing, packaging, marketing etc. The conventional extension approaches have traditionally focused on production advice only. But with the new set of demands from the ground, farmers as well as EAS providers have to equip themselves with information related to the entire value chain. The EAS providers should become more of a facilitator than disseminators of technologies and therefore developing specific competencies among extension providers and certifying them as recognised advisors as important. Areas like how to design a training course for maximum impact, conflict resolution, negotiation skills, formation and management of farmer producer organizations etc are some areas to be paid attention too.

The participants noted that all these competencies are not required by all EAS providers. Depending on the job profile and area of work (production, processing, marketing etc), the EAS providers should develop the specific competencies.

The discussion also raised the issue of capacity development of researchers and faculty in extension: The areas suggested include:

- Research Methodology
- Impact Evaluation
- Designing, testing and evaluating new modes of EAS delivery
- Developing intrinsic motivation to participate in e-discussions, webinars etc to share information and discuss important areas of concern related to the profession.

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[56] AESA, 2015. Summary of E-discussion on Capacity needs assessment of EAS providers in South Asia.

Existing mechanisms for capacity development of EAS in India

In India, capacity development within the context of extension is quite often understood as enhancing technical capacity of extension personnel (to better deal with current and emerging technological bottlenecks in the field) and this is often achieved by training them or sending them for exposure visits to organisations and regions where new technologies are developed, demonstrated and adopted. A few programmes are also organised to enhance their communication skills, especially the use of media and ICTs (Box 7).

Box 7: Existing Mechanisms for Capacity Development of EAS in India

Most of the extension staff members in India obtain their pre-service education in extension from the different state agricultural universities spread over the country. Facilities for in-service training of extension staff are available at many institutions such as MANAGE, EEI, SAMETIs, SAUs and KVKs.

In India, the National Institute of Agricultural Extension Management (MANAGE) established by the government in 1987, is the main agency involved in capacity development of EAS. This institute offers several training programmes every year. It also offers two post-graduate diploma programs, one in general management and the other in agricultural extension management. In addition, a one-year diploma program in agricultural extension services for input dealers was started in 2004 for imparting formal agricultural education to the dealers. MANAGE is also responsible for implementing the Agri-Clinics and Agri-Business Centers Scheme (ACABC), which aims at providing value-added extension services to the doorsteps of farmers by agricultural professionals. Its training programs are open to both public and non-public stakeholders.

Trainings related to agricultural marketing at the national level are organized by NIAM (The National Institute of Agricultural Marketing). They train mostly the staff involved in agricultural marketing activities. The National Academy of Agricultural Research Management (NAARM) under the ICAR also organizes training on topics related to extension for the staff of ICAR, SAUs and KVKs.

The country has four EEIs (Extension Education Institute) at the regional level that cater to the training needs of middle level extension functionaries of line department officials. They also provide training to faculty of farmer training centres, KVKs and SAMETIs. The trainings at EEI focus on new technologies, methodological and management aspects and also on enhancing communication skills. Training of field extension personnel of line departments in frontier areas of technology is one of the objectives of KVKs. KVKs are also involved in training of "farmer friends" selected by ATMA.

There are SAMETIs (State Agricultural Management and Extension Training Institutes) in most Indian states. SAMETIs are autonomous state level institutes with a mandate of conducting training courses on new agricultural technologies, extension management, gender issues,

extension reform and new information technologies. SAMETIs provide extension management training for extension agents and functionaries for all the line departments.

There are five statutory commodity boards under the Department of Commerce and another thirteen centrally governed commodity boards. Many of these boards and councils have their own training centres to train their staff. The staff members also attend different types of trainings organized by IIPM (Indian Institute of Plantation Management) which is an organization under the Ministry of Commerce.

NGOS like PRADAN and BASIX have a HRD cell to support their staff to align their perspectives with the larger organizational goals of change and transformation among rural communities. This cell carries out regular trainings and need assessment of their personnel depending upon the current needs and goals of the organization concurrent to the needs of the individuals. These NGOs are able to create in-house resources for training and development of their personnel. As and when needed they also outsource resource person. Unlike the public extension system, these organizations undertake rigorous processes in recruitment and induction to make the new entrants well versed with the difficulties involved in working in the sector as extension personnel. Follow-up and monitoring are conducted from time to time to continuously upgrade the knowledge, skills and attitude of the personnel followed by interim trainings/CD. These organisations also promote peer learning and self learning.

The participants in the e-discussion pointed out several limitations in the existing programme for capacity development of EAS. These are as follows:
- Mostly training and that too targeted at individuals
- More focus on sharing knowledge and less emphasis on developing skills
- Mostly supply driven-not based on analysis of capacity development needs
- Learning objective is not set and the contents are decided not based on meeting the specific learning objectives
- Training organisations in most cases decide on the training topics (mostly title of the lecture only and leave the rest to the available faculty)
- Trainings evaluated based on number of participants, expenditure utilised and not on behavioural changes the training has brought about
- Trainers not exposed to other forms of capacity development beyond training
- Content, duration and purpose of training is not matching in many cases
- Seminars and workshops are often attended by researchers and teachers and only a few field professionals participate in such events

Though the country has several agencies involved in training extension personnel, the number and quality of trainers is inadequate to support the increasing training demands. Training infrastructure for animal husbandry and fisheries is considerably weak. Inadequate 'training of trainers' and lack of incentives to attract best talents to the training profession are areas of grave concern. Accreditation of training institutions and trainers is non-existent. This needs to be addressed by evolving appropriate institutional, structural and operational framework for a

rigorous accreditation mechanism for institutions and trainers alike. Apart from this a database on training infrastructure, funding and personnel does not exist and this affects planning for HRD.

Though there are different way of capacity development and training, most of the training in extension could be classified as in-service or refresher training. There is a need to extend both the reach and coverage of training by evolving multiplier mechanisms like farm schools, Open and Distance Learning, Information & Communication Technologies (ICTs) and Augmented Training (web-based, on-line as well as through conventional farm school on air, television, etc.). Similarly there is a lot of scope to include on-the-job training (training in the forms of learning by doing at work/practices), interactive training (mutual learning peer-to-peer in a working group) and most importantly probationers/induction training for extension staff.

Assessing capacity gaps

Participants from the e-discussion observed that quit often, capacity development programmes such as trainings are organised without undertaking rigorous analysis to identify capacity gaps or consultation with the potential clients.

Currently MANAGE takes a lead in organising national level workshop every year on training needs by bringing the EEIs, SAMETIs and personnel from the state Department of Agriculture. However, the private and NGO sectors are not invited to these workshops. EEI, Hyderabad, also organises a similar workshop by inviting the officers who oversee training (e.g.: Joint Director, Training) in different line departments from nine states under its jurisdiction to a workshop every year. These are taken into consideration while preparing the training calendar. EEI also undertakes follow-up visits to conduct assessment of the effectiveness of their training programme on work performance by interacting with a sample of their trainees.

However, a lot more needs to be done to improve the quality of assessing capacity gaps (Box 8). For instance, at the state level, there needs to be a mechanism for assessing capacity gaps by brings together the Director, SAMETI, state nodal officer ATMA and Heads of the different line departments to discuss the training needs. There should also be a mechanism to bring the private and the NGO sector into this fold. Some of the SAMETIs such as SAMETI Kerala have a Technical Support Group with representation from the Heads of the different line departments to discuss and decide on the topics for training. SAMETI Kerala is also using the inputs from the revisit SREP (strategic research and extension plan) exercise (the state conducted at each district about two years back to identify the priority areas for training).

> **Box 8: NARS Scientists and their Training Needs**
> NAARM has carried out a survey to identify the training needs of agricultural scientists working in the Indian National Agricultural Research System (NARS). The major training needs identified in the area of Agricultural Research Management were Research Project Management, Research evaluation/Impact assessment methods, Research prioritization techniques, Research

productivity assessment and enhancement, Patent procedure for agricultural technology, Quality management in agricultural research and Management of Intellectual Property rights. Human Resource Management was the most felt training need of the NARS scientists in the HRD category of training followed by leadership development, motivational techniques, personality development, building effective research teams and stress management.
(Source: Samanta, R.K., 2005)[57]

Participants in the e-discussion (AESA, 2015) pointed some of the challenges in identifying capacity gaps in EAS. These are as follows:

- *Lack of role clarity*: If the roles of EAS providers are not clear, how can they self assess their capacity gaps? Different stakeholders have different expectations about EAS.
- *Focus only on individual capacity*: More focus on addressing individual capacities and low or no emphasis on addressing capacity gaps at the organisational and enabling environment level
- *No mechanisms to undertake capacity needs assessment* that should ideally determine the content of the capacity development programmes. Sometimes individuals are asked to identity their need for training, but that alone cannot determine the capacity development requirements at different levels
- *Low personal motivation* from the trainer and trainee side to provide or acquire new competencies: There is no desire to acquire new capacities, nor ability and willingness to pay for it.
- *Different EAS providers need different types of capacities*: Requirements of public sector EAS providers which focus more on free advice vary with those from the private sector where the cost of services is directly or indirectly paid by the farmers.
- *No manpower for providing EAS* in the livestock sector and so no effort to identify the capacity gaps of EAS

"One of the weaknesses of the training system in most government organizations is that training need identification and training need analysis is not done properly. There is a need to develop an 'Institutionalized System of Training Need Identification' on continuous basis once in three to five years based on individual training needs as well as group training needs." (ICAR, 2015)[58].

Lack of a framework or a policy for capacity development and capacity needs assessment for EAS has been pointed out by many participants as the main challenge in organising relevant capacity development programmes for EAS in India. Lack of policies related to capacity development has resulted in lack of convergence and coordination among the different training organisations working for EAS in India. There is no induction training for EAS which is very essential for orienting the staff with the values and approaches of EAS. Moreover, there are no

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[57] Samanta, R.K., 2005. National Agricultural Research System (Nars) Scientists And Their Management Training Needs. NAARM, Hyderabad.

[58] ICAR. 2015. Training Policy 2015. http://www.icar.org.in/files/hrmworkunit-12082015.pdf

mechanisms for monitoring the effectives of these training programmes. Increasingly the Government organisations are asked to undertake a third-party evaluation of their training programmes. Hopefully, issues related to improving the effectiveness of the training programmes are addressed to some extent.

Effective training depends on the trainers' content knowledge and trainers' interpretation and transformation of the subject matter knowledge in the context of facilitating trainees' learning. Developing training content entails developing training materials for trainees like manuals, documents, case studies, study materials, reference materials and other training resources. Currently there are no mechanisms to ensure the quality of the trainers or the training materials or the training process employed in capacity development of EAS.

The participants in the e-discussion pointed to the need for using self-assessment questionnaire, monthly review meetings and placing suggestion box to elicit the capacity development needs of EAS. For instance, the Ohio State University has developed a core competency self-assessment questionnaire for their extension staff.
 (http://extensionhr.osu.edu/compmodel/howimprovecorecomp.pdf)

Competency framework

The importance of developing a competency framework for Extension personnel, similar to competency framework for Civil Services in India was also highlighted in the e-discussion. In India the Department of Personnel and Training (DoPT) has developed a competency framework for civil servants (Box 9).

Box 9: Competency Framework for Civil Servants

Competencies may be broadly divided into those that are core skills which civil servants would need to possess with different levels of proficiency for different functions or levels. The other set of competencies relate to the professional or specialized skills, which are relevant for specialized functions such as building roads, irrigation projects, taking flood control measures, civil aviation, medical care, etc.

A fundamental principle of the competency framework is that each job should be performed by a person who has the required competencies for that job. Training has usually been based on the duties that are to be performed in a particular post. There has been no comprehensive review or classification of all posts in accordance with functions that are to be performed and the competencies required thereto. Thus, the issue of whether an individual has the necessary competencies to be able to perform the functions of a post has not been addressed.

Under the Competency Framework, a brief directory of the Competencies has been released by Training Division. The directory of competency is for all Services, Cadres at present and the idea is that all training programmes should be in accordance with the general competencies, inter-personal skills etc.

Each Department in the state shall adopt a Systematic Approach to Training and some of the important roles are:
-Develop the Cadre Training Plans (CTP), based on the competencies required and training needs, for ensuring that all cadres under the Department or its attached/sub-ordinate offices have a clearly articulated scheme for the development of their competencies while also indicating the programmes that are mandatory
- Link the training and development of competencies of individuals to their career progression and ensure this by suitably amending service rules/issuing administrative instructions
-Prepare an Annual Training Plan (ATP) for all the cadres under its control
- Implement the Annual Training Plan, by using the institutions under it or outside, so that the limitations on internal training capacity do not constrain the implementation of the training plan
- Allocate appropriate funds to enable the training to be carried out by institutions under its control or outside.
Source: DoPT, 2014.[59]

The Department of Personnel and Training (DoPT) under the Government of India has come up with a National Training Policy (1996 and 2012). The National Training Policy 2012 has recommended that each state should formulate/adopt a training policy (so that there is a formal articulated framework within which training is conducted at the state level). There hasn't been much progress on this front. The National Training policy has strongly recommended that, it is essential to match individuals' competencies with the jobs they have to do and bridge competency gaps for current and future roles through training. For moving to a competency-based approach, it would be necessary to classify the distinct types of posts and to indicate the competencies required for performing work in such posts. Once the competencies are laid down, an individual's development can be more objectively linked to the competencies needed for the current or future jobs. Career progression and placement need to be based on matching the individual's competencies to those required for a post (Box 9).

ICAR in its draft training policy noted that "training has usually been based on the duties that are to be performed in a particular post. There has been no comprehensive review or classification of all posts in accordance with functions that are to be performed and the competencies required thereto. Thus the issue of whether an individual has the necessary competencies to be able to perform the functions of a post has not been addressed." (ICAR, 2015).

In India, the Ministry of Panchayati Raj has also developed a National Capacity Building Framework (NCBF) which provided for the first time a comprehensive guide to planning and implementing capacity development investments for local governments. While the NCBF is being supported by the BRGF (Backward Regions Grant Fund), it also provides a potential

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[59] DoPT, 2014 Civil Services Competency Dictionary: Strengthening Human Resource Management of Civil Service, DoPT, GoI

framework for capacity building components of other programs of the Panchayati raj and rural development. Unlike other programs where the budgets for capacity development are exclusively for training, the NCBF supported some of the critical gaps other than training that are necessary for the capacity development of local governments. It made provision to access technical support and also for availing services to cover the functional gaps at the PRI level.

The NCBF does not require the States to conduct a capacity needs assessment for each district, which is a major flaw (MoPR 2009 a)[60]. A Framework that emphasizes stakeholder's engagement in capacity development assessment and planning would be grounded in the specific needs of the local government and also improve ownership of the plan.

The objectives of creating the National Capacity Development Framework for local government are as follows:
1. Define the concept, issues and needs related to overall capacity development of local governments and supporting institutions to effectively perform the responsibilities entrusted to them;
2. Assess the needs and define priorities for capacity development initiatives;
3. Prepare an overall implementation plan for capacity development initiatives that is coordinated and efficient;
4. Provide a common approach to assess the results achieved; and
5. Guide capacity development investments.

Table 8 (below) illustrates the features of these capacity factors:

Table 8: Capacity factors and its Elements

Capacity Factors	Definition	Elements on which the capacity is based
Competency of Individual	The will and ability to set objectives and achieve them using one's own competence	Knowledge, skills, attitude, self-rated power, etc.
Effectiveness of Organizational arrangements	Factors that influence an organization's performance	Human resources (adequacy of competent individuals in organizations)
		Physical resources (facilities, equipment, materials, etc) and budget
		Intellectual resources (organizational vision, strategy, planning, performance management, business know-how & technology, inter-institutional linkage, etc.)
		Organizational structure and systems that enables efficient utilization of resources to realize development goals
		Leadership of the change agents

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[60] MoPR, 2009 a. National Capability Building Framework for Panchayati Raj Elected Representatives and Functionaries, MoPR, GoI

Efficiency of policy instruments	The formal mechanisms to be used to guide stakeholder actions toward achievement of the development goal.	Policy instruments include policies, laws, regulations, administrative rules, standards, etc. Enforcement of policy instruments
Conduciveness of socio-political environment	The political and social forces that determine the priority given to the development goal by the government, the private sector, and civil society	Compatibility of social norms & beliefs with development goals, awareness of rights, power to voice concerns and hold local government accountable by the stakeholders

Source: MoPR, 2009 b[61].

Besides DoPT, another important organisation involved in training and development in India is the Indian Society for Training & Development (ISTD), which is a national level professional and non-profit society involved in the area of training and development of human resource from government, public and private sector organization and enterprises; educational and training institutions and other professional bodies. ISTD organizes training programs all over the country both at the chapter and national levels. The programs cover selected areas of HRD with special emphasis on training of trainers, training goals and objectives and training tools and technologies. A very large number of public and private sector organizations, training institutions of central and state government participate in these programs, some of which are held in collaboration with Planning Commission, Bureau of Public Enterprises and the Training Division of Department of Personnel, Government of India. ISTD is designated as the National Nodal Agency to `Testing and Certification' of skilled workers in the organized and unorganized sectors. ISTD seeks to bring together individuals from government, industry, education and such other institutions to evolve and develop improved and effective HRD/training practices tools and technologies. Experiences with capacity development frameworks of other organisations are given in the Annexure of this report.

VI. CONCLUSIONS

EAS providers need new capacities at the individual, organisational and the enabling environment level to deal with the diverse and evolving challenges faced by rural communities. While capacity development envisages changes in capacity at different levels, within EAS, the focus has been more at the individual level. Refresher or in-service training is the main and in most cases the only form of capacity development in India, especially within the public sector EAS. EAS providers in the private and NGO sector generally organise induction training for a longer duration. However, induction training is mostly a recent phenomenon in the public sector. During the past few years, SAMETI's have started organising induction/orientation training for newly recruited BTMs/ABTMs for 3-5 days.

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[61] MoPR, 2009 b. Assessment of State level capacities for the implementation of the NCBF and to undertake District Planning-Draft, MoPR-UNDP

While the importance of developing new capacities among EAS providers is increasingly recognised, there is very little appreciation on the need for a systematic capacity need assessment to guide CD interventions. A lot more needs to be done to strengthen the capacity needs assessment among EAS providers. Organisations do need frameworks and policies to guide capacity development. However EAS generally lack such frameworks and policies and this has been affecting the quality of CD interventions in EAS. Core competencies needed in extension are yet to be identified or clearly articulated. Lack of a clearly articulated list of core competencies for EAS also adversely affect the recruitment of new staff, professional development of existing staff and also the quality of professional education in extension.

Undertaking capacity needs assessment (CNA) is critical for organising appropriate CD interventions. CNA is a capacity-strengthening process in its own right, and that the process is as important as the outcomes and it should be a continuous and iterative process (IUCN, 2009). While several approaches and tools on CNA exist, there are yet to be adapted and used in the context of EAS. The review on CD and CNA and the consultations around CD for EAS capacity development which we did in this report are being used to develop and test a facilitators guide for undertaking capacity needs assessment in four countries in South Asia.

Annexure 1: TAP Capacity Assessment Framework

The elements of the Framework, Needs Assessment and Monitoring and evaluation related to TAP (Tropical Agricultural Platform) capacity assessment are as follows:

Framework
Framework should be generic (globally relevant), addressing conceptual and operational issues (practical application at regional and country level with options). Generic guidelines and practical tools are required at the systems as well as at the project level. The Framework should specify the trade-offs, just like the options for two-ways learning between time-bound CD projects and developing long-term systems capacities. Framework needs to be adaptable and catalyse innovations.

Assumptions for the Framework need to be explicit. The starting point should be the AIS, add existing CD concepts and operational principles with particular emphasis on the organizational and enabling environment dimension of CD. Framework should be conceived as a decision-making tool for CD interventions such as investment in R&D, grounded in the practical realities and needs of countries.

Framework should provide guidelines that can be used for project formulation and used as an instrument to create synergies and provide policy advice. Case studies of successful CD for AIS should be identified to deduct principles and guidelines. There is need to explain which approaches and tools work better than others i.e. provide future users with choices to make a strategic decision.

Assessment

- Assess national and international political economy;
- Technical skills and soft (i.e. functional) skills such as facilitation are essential for AIS;
- Diverse needs of different target groups for various similar locations need to be considered;
- Identify entry points and assess needs at different levels and areas;
- Scoping and pre-assessment dialogue to engage stakeholders are essential steps before starting needs assessment;
- Assessment should include / lead to work plan(s) and budget(s) for CD interventions;
- Identify and capitalise on previous needs assessments relating to CD for AIS;
- Develop a conceptual model to ground the needs survey of an organization or target communities and groups;
- Need for prioritization by stakeholders of the components of the needs survey;
- Engage target groups in visioning the desired change (i.e. analyse present status, desired status and how to achieve the desired status; this can also involve fore-sighting);

- Define who is a stakeholder and identify their roles / functions in the AIS through stakeholder mapping;
- Specify the system boundaries to help in characterizing the AIS;
- Identify the financial capacity of the system i.e. to undertake the AIS functions and even self-assessment;
- Create an awareness-raising loop either prior or as part of the actual assessment;
- Consider social inclusion, including diversity issues – gender, youth, and others;
- Specify the domain of the assessment depending on the nature of the innovation i.e. is it a process or product innovation;
- Take into account previous experiences in needs assessments by other agencies (i.e. stocktaking and scanning during the scoping phase at country level);
- Define the mechanisms for collecting, aggregating, combining the needs assessments;
- Needs assessment should be repeated in a few years, should link to M & E.

Monitoring and Evaluation

- M&E framework needs to build on a theory of change developed as part of the Framework and try to capture contribution rather than attribution;
- Principles of and good practices for M&E need to be stated in the Framework;
- M&E tools need to be clear, simple and relevant, ensuring that they will be widely adopted and applied;
- M&E tools need to ensure comparability of CD interventions and make an explicit link to the needs assessment where the baseline is determined;
- Framework should include web-based, simple, off the shelve data collection tools as well as tools which can be used for quick analysis and reflexive monitoring;
- M&E tools should be flexible and appropriate to different contexts;
- Develop a catalogue of core measures for each progress and results dimension of CD for AIS laid out in the Common Framework;
- Joint monitoring with stakeholders required to enable learning and capturing of unintended results;
- Network mapping should be done at different points in time;
- Explore the use monitoring information for benchmarking;
- Specify the impact pathway: CD $\rightarrow$ AIS $\rightarrow$ Productivity, Food security, resilience, incomes;
- Indicators and measures for M&E should be identified, along with cross-cutting indicators on gender and youth.

Source: TAP, 2015. Capacity Development Expert Group Workshop, Montpellier, 19 and 20 March 2015 -Draft Summary Report.

Annexure 2: Conceptual Framework for Development of Human Talents

An overview of the capacity building and human talents management and development activities carried out under Agricultural Research and Development Support Facility (ARDSF) in Papua New Guinea highlights the shift of emphasis from capacity building to human talents management and development.

Strategic Management and Development of Human Talents (SMDHT) framework is suggested to support the Agricultural Research for Development approach which adopts a systemic thinking approach, which is robust but non-prescriptive and demonstrate a competence based view that sees human talents as vital assets within the organisation. It should rely on the logical framework that enables the strategic integration required to align human talents with organisational goals.

The successful implementation of SMDHT framework requires four kinds of integration to make sure that it is systemic so as to bring about the expected results-
- Total integration- coherence among the organisational strategies, structures, systems and culture
- External integration- linkages between and among different organisations
- Strategic integration- alignment between the organisation' s strategic objectives and its human talents in order to achieve effective performance
- Internal integration- Coherence among four components of the Human talents management system, namely, human talents planning, performance assessment, performance rewards and learning and capacity building.

Source: Mbabu, N A and Hall, A 2012, Capacity Building for Agricultural Research for Development – Lessons from Practice in PNG, UNU-MERIT, Netherlands.

Annexure 3: Capacity Building for REDD by Forest Action, Nepal

Reducing emissions from deforestation and forest degradation (**REDD**) is a mechanism that has been under negotiation by the United Nations Framework Convention on Climate Change (UNFCCC) since 2005, with the objective of mitigating climate change through reducing net emissions of greenhouse gases through enhanced forest management in developing countries. As the REDD agenda is getting rooted in Nepal's forest sector, the stakeholders are evolving, or at aligning with the new agenda with clear interests. Current initiatives span four key dimensions of REDD implementation:
- Technical methodological development
- Dissemination and outreach
- Advocacy action mainly by indigenous groups
- Policy analysis and documentation.

REDD capacity building is well appreciated agenda among the forest and REDD stakeholders in Nepal. Five major types of institutions are involved in capacity building, especially in providing training in diverse aspects of forest management and in REDD. The major institutions involved are government agencies, bilateral projects and international NGOs, networks, research organizations and media. Forest policy processes and REDD implementation in Nepal operate at three different levels: national, meso (district, sub-district) and community. Five training packages have been developed considering diverse target group:
- REDD governance (at national and local level)
- Carbon assessment and monitoring
- Gender and REDD
- Indigenous People and REDD
- Mass Media in REDD.

These trainings cover three majors aspects of knowledge required for REDD implementation:
- Awareness and rights related trainings,
- Trainings that directly help to improve policy or mobilise public opinions for appropriate policy framing, and
- Trainings and technical and methodological aspects of REDD implementation.

The training and capacity building processes should be seen as a collaborative learning process, linked to concrete pilot field actions as well as evolving international policy instruments and market opportunities. There should also be a balance in capacity development among various key aspects such as technical analysis, institutional development, policy framing and conflict management aspects to ensure REDD is implemented properly.

Source: Paudel, Naya S., Ojha, Hemant and Rana, Sushila, 2010. Capacity Building Needs Assessment and Training Strategies for Grassroots REDD Stakeholders in Nepal. Report Prepared by Forest Action, Nepal for RECOFTC – The Center for People and Forests, Bangkok.