Global Food Security Strategy Technical Guidance for Capacity Development

This is one of 18 technical guidance documents for implementing the U.S. Government's Global Food Security Strategy. The entire set of documents can be found at www.feedthefuture.gov and www.agrilinks.org.

Introduction

Capacity development is essential to achieving the U.S. Government's Global Food Security Strategy (GFSS) objectives of inclusive and sustainable agriculture-led economic growth, resilience among people and systems, and a well-nourished population. While there are numerous definitions and approaches to capacity development, a Capacity Development for Agricultural Innovation Systems (CDAIS)[1] approach offers a framework under which strategies for capacity development in agriculture and food systems can be developed and harmonized.

Terminology and Context

Definitions[2] for the following key concepts provide a common understanding of CDAIS.

Table 1. Definitions of Key Concepts

Agricultural Innovation	The process whereby individuals or organizations generate and bring existing or new technologies, practices, and forms of organization into social and economic use to increase effectiveness, competitiveness, resilience to shocks, and/or environmental sustainability, thereby contributing to food and nutritional security, economic development, and sustainable natural resource management.
Agricultural Innovation System	A complex network of actors (individuals and organizations) and supporting institutions and policies that generate and bring existing or new agricultural innovations (technologies, practices, and processes) into social and economic use.
Capacity	The ability of people, organizations, and society as a whole to manage their affairs successfully.
Capacity Development	The process whereby people, organizations, and society as a whole unleash, strengthen, create, adapt, and maintain capacity over time.
Capacity Development for Agricultural Innovation Systems	The process directed to develop the skills or competencies (both scientific and non-scientific) required for the agricultural innovation system to perform effectively.
Innovation	The process of putting knowledge into use, be it in the form of technology, practice, or a particular way of working.

Capacity Development for Agricultural Innovation Systems Overview

Capacity Development for Agricultural Innovation Systems (CDAIS) builds conceptually on the Agriculture Innovation System (AIS) perspective, which emphasizes that agricultural innovation is a result of complex, multi-stakeholder interactions. As depicted in Figure 1, the AIS is comprised of four components: (1) research and education; (2) business and enterprise, which includes value chain actors like smallholder farmers and consumers; (3) bridging institutions, such as stakeholder platforms and agricultural extension; and (4) the enabling environment, consisting of formal and informal rules.

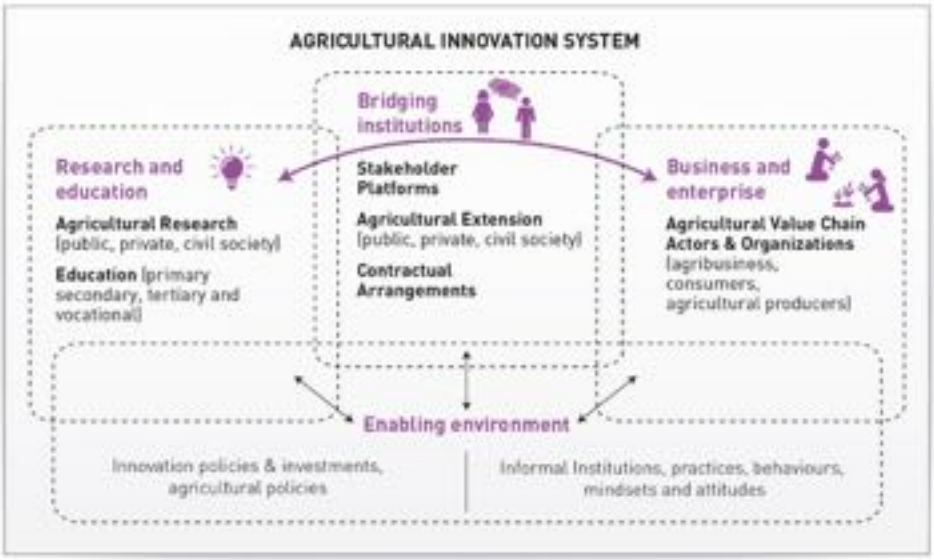


Figure 1: Conceptual diagram of an Agricultural Innovation System

The CDAIS perspective builds on and integrates more traditional approaches of capacity development—such as the Transfer of Technology approach that primarily emphasized technology skills development—but reflects and emphasizes a shift to also developing capacity among diverse stakeholders to navigate complexity, collaborate, reflect and learn, and engage in strategic policy processes. Table 2 presents a history of approaches to capacity development for agricultural innovation since the 1960s. While not all approaches are mutually exclusive, and the approaches continue to co-exist, understanding this evolution of approaches is important for benchmarking, monitoring, and evaluating project implementation of capacity development programming.

Table 2. Shifts in Theoretical Perspectives on Capacity Development for Agricultural Innovation[3]

	Transfer of Technology (TOT)	**Farming System Research**	**Agricultural Knowledge & Information Systems (AKIS)**	**Agricultural Innovation Systems (AIS)**
Periods/Era	Central since 1960s	Starting in 1960-1970s	From 1990s	Since 2000s
Purpose	Supply technologies through linear processes	Learn farmers' constraints in farm-level engagements	Participatory collaboration in research, education, and extension	Promote innovation through multi-actor processes and partnerships
Innovators	Scientists	Scientists and extensionists	Scientists, extensionists, and farmers together	Scientists, extensionists, farmers, private sector actors, policymakers, and consumers
Key Changes Sought	Farmers' behavior change	Removing farmers' constraints	Empowering farmers and recognizing the heterogeneity among them with an increased attention to gender	Institutional change and innovation capacity

Capacity Development Focus	Technology adoption and uptake through technical skills development	Technology adoption and uptake through technical skills development, plus integration of ecological and farm-level economic conditions	Enhancing communication among research, extension, and education actors, including farmers, to co-evolve technologies to better fit livelihood systems	Facilitating strengthening of capacity to interact, innovate, and learn, as well as creating enabling conditions

Capacity development is a function of capacities at three interconnected levels that are parts of a whole: individuals, organizations, and the enabling environment. It often involves enhancing the knowledge, attitudes, and skills of individuals whose work both contributes to and is dependent upon the performance of the organizations in which they work. The effectiveness of organizations is influenced by the enabling environment. Conversely, the environment is affected by organizations, the relationships between them, and the individuals within them.

While capacity development of each level has to be dealt with in its own right, it also should be done through multiple but complementary pathways for change. It is pertinent to stress the crucial importance of partnerships and networks to create interconnectedness across the three levels to create new knowledge to spur innovation.[4]

Figure 2 | **The 3 dimensions of Capacity Development**

Source: FAO 2010

Individual Capacity: To successfully innovate together, stakeholders need two types of capacities: technical and functional. ***Technical capacities*** are the skills and competencies needed for successful performance in a given field or discipline, e.g., soil science, horticulture, agricultural economics, agricultural extension, etc. ***Functional capacities*** are the skills and competencies needed for innovation partnerships to function effectively, such as the ability to navigate complexity, to collaborate, to reflect and learn, and to engage in strategic and political processes.[5]

Organizational Capacity: Competent individuals are not sufficient to make a capable organization. Organizations are defined as "groups of individuals bound by some common purpose to achieve objectives" and organizational capacity is the collective capability of members to achieve their organization's goals. Strengthening organizational capacities consists of improving the overall functioning and performance of an organization as well as strengthening relationships across organizations. It often is reflected in changes to organizational mandates, systems, processes, or priorities.[6]

Enabling Environment: Competent individuals and capable organizations together are not likely to be effective or perform well, if the enabling environment in which they are embedded does not effectively support them. The enabling environment refers to norms, customs, laws, regulations, policies, international trade agreements, and public infrastructure.

Capacity Development for Agricultural Innovation Systems in Practice

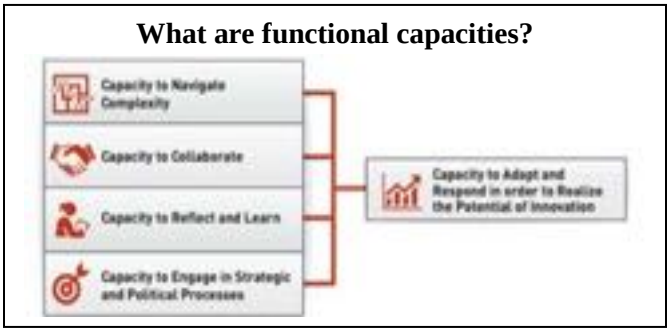
The GFSS approach to improving individual, organizational, and system performance is rooted in local capacity development. Capacity development interventions should be designed to sustain local systems change. Successful local capacity development is dependent upon trust and relationships. Utilizing a participatory approach throughout the design, implementation, monitoring, and evaluation of capacity development programming can both increase local ownership and the effectiveness of local systems

strengthening. See "Additional Resources and Tools" for more resources on local capacity and local ownership within the context of capacity development.

Learn more here about how the Innovation Scholars Program — a collaborative effort to both elevate the research and innovation skills of faculty and administrators at the Lilongwe University of Agriculture and Natural Resources in Malawi and to help educate and train the next generation of food system innovators, scholars, and entrepreneurs — was designed to strengthen functional and technical capacities across AIS components.

Assessment: Because there may be many actors within an AIS, any attempt to systematically assess the capacity of all relevant actors can be nearly impossible. To focus the scope, the capacity needs assessment should take place around a specific innovation agenda or niche. Because capacity development often requires longer-term considerations, assessing capacity needs early in the strategy or project design process is critical for developing a comprehensive plan for sequencing, layering, and integrating capacity development interventions. The following steps can be taken to identify leverage points where those interventions could both remove obstacles to and strengthen potential for innovation at scale.

(1) ***Begin by identifying an innovation niche***, which will bound the system, such as food safety, nutritional security, curriculum for life-long learning in agriculture and food, smallholder producer groups, food processing, a particular new technology, etc.
(2) After identifying the innovation niche, conduct a participatory stakeholder mapping exercise or organizational network analysis to ***identify organizational actors that are linked to the innovation niche***. The AIS conceptual diagram can be a useful tool for this step (see Figure 1).
(3) After all major organizational actors in the AIS have been mapped, the next step is to ***identify the key actors (organizations, groups of individuals, or individuals) that will support or hinder innovation***, or the process to "push" or "pull" new technologies or practices related to the innovation niche through the system along relevant delivery pathways (See also the GFSS Technical Guidance for Scaling Adoption of Technologies and Practices).[7]
(4) Then ***assess the capacity of these key actors*** through diagnostic assessments that provide detailed analysis of current levels of performance. Diagnostic assessments should utilize a mixed-methods approach, including self-assessment surveys and semi-structured interviews, and examine the technical and functional capacities of individual actors, the performance of organizational actors, and the relationships, roles, and norms among actors. They should reflect the unique considerations for each of the four components of the AIS: research and education, bridging institutions, business and enterprise, and the enabling environment. (Refer to Figure 1.)



Design: After identifying whose and what capacity needs to be developed, it is time to design how capacity should be developed. Design begins by reflecting on the assessment findings and asking:

- Where are we now? Define the present capacity level, existing strengths, and weaknesses.
- Where do we want to be? Define the vision of whose and what capacity is required for innovation for improved productivity, resilience, and nutrition outcomes.
- What is the best way to get there? Define how to move from the present to the desired state.

Capacity development programs can be improved and made more effective by applying basic principles of adult learning, which include but are not limited to the following:

- ***Support learner-driven learning:*** Complement instrumental learning approaches that emphasize the acquisition of skills and knowledge with transformative learning approaches that lead to changes or shifts in perspective through critical examination of how one interacts with others and their environments. Enabling individuals to own their learning can make it more sustainable.
- ***Emphasize experiential learning:*** Experiential learning acknowledges the process of learning as much as the outcome of gaining new skills and understanding development. Learning through the process of doing and, perhaps even more importantly, learning through reflection on doing, increases engagement and level of ownership of the learning outcomes.
- ***Enable organizational learning:*** Training individuals is necessary but not sufficient for supporting sustainable systems change. Creating a learning organization requires establishing and maintaining intentional learning processes and practices as well as leadership that fosters and reinforces a supportive learning environment.
- ***Utilize a systems approach:*** By moving beyond a focus on capacities at the individual and organizational levels and focusing on the connections between and among actors, local system capacity also can be strengthened. Strengthening relations and social capital can help local communities develop transformative capacity.

The Innovation in Agricultural Training and Education (InnovATE) project has developed a series of tools specifically for assessing agricultural training and education capacities and needs, including tools to build gender equity organizational capacity. Check them out here!

See the forthcoming Feed the Future CDAIS Toolkit for more detailed guidance on designing and monitoring for capacity development across each of the four specific AIS components: research and education, bridging institutions, business and enterprise, and the enabling environment.

Monitoring and Evaluation: Capacity is best measured through an approach encompassing several methods that aim to capture outcomes or changes in performance at the individual and organizational levels. Measurement should include both empirical evidence and reflective appraisals about the continuous process for learning and adapting over time in response to changing contexts and needs. Reflexive monitoring at the individual level encourages the learner to establish and adapt an ongoing, voluntary, and self-motivated pursuit for skills development, while organizational self-assessments can stimulate shared learning within multi-actor groups about the design and adaption of actions for dealing with complex problems.

The Integrating Gender and Nutrition within Agricultural Extension Services (INGENAES) project offers a unique example. Read here how they used a Liberating Structures facilitation technique to innovate through reflection that encouraged planning for failure.

Additional Resources and Tools

- Common Framework on Capacity Development for Agricultural Innovation Systems
- World Bank, Agricultural Innovation Systems: An Investment Sourcebook
- FAO Capacity Development Learning Modules

- USAID Local Systems Framework
- The Power of Ownership: The Local Engagement Assessment Framework (LEAF)
- OECD, Agricultural Innovation Systems: A Framework for Analyzing the Role of Government
- TAPipedia
- Measuring Organizational Capacity Development resources on USAID Learning Lab

For further assistance related to this Technical Guidance, please contact ftfguidance@usaid.gov.

References

[1] Tropical Agricultural Platform. Common Framework on Capacity Development for Agricultural Innovation Systems. http://www.fao.org/in-action/tropical-agriculture-platform/commonframework/en/

[2] These definitions have been adopted from the Common Framework on Capacity Development for Agricultural Innovation Systems developed by the Tropical Agriculture Platform (TAP), a G20 initiative with the strategic goal of contributing to the development of national capacities for agricultural innovation. http://tapipedia.org/framework

[3] Adapted from Klerkx, L., van Mierlo, B., & Leeuwis, C. (2012). Evolution of systems approaches to agricultural innovation: concepts, analysis and interventions in I. Darnhofer, D. Gibbon, and B. Dedieu (eds.), Farming Systems Research into the 21st Century: The New Dynamic.

[4] Tropical Agriculture Platform, *Op. cit.*

[5] Also referred to transferable, soft, or non-cognitive skills.

[6] Tropical Agriculture Platform, *Op. cit.*

[7] GFSS Technical Guidance for Scaling Adoption of Technologies and Practices https://feedthefuture.gov/lp/guidance-and-tools-global-food-security-programs