Food and Agriculture Organization of the United Nations

Assessing agricultural innovation systems: a training manual

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Assessing agricultural innovation systems: a training manual

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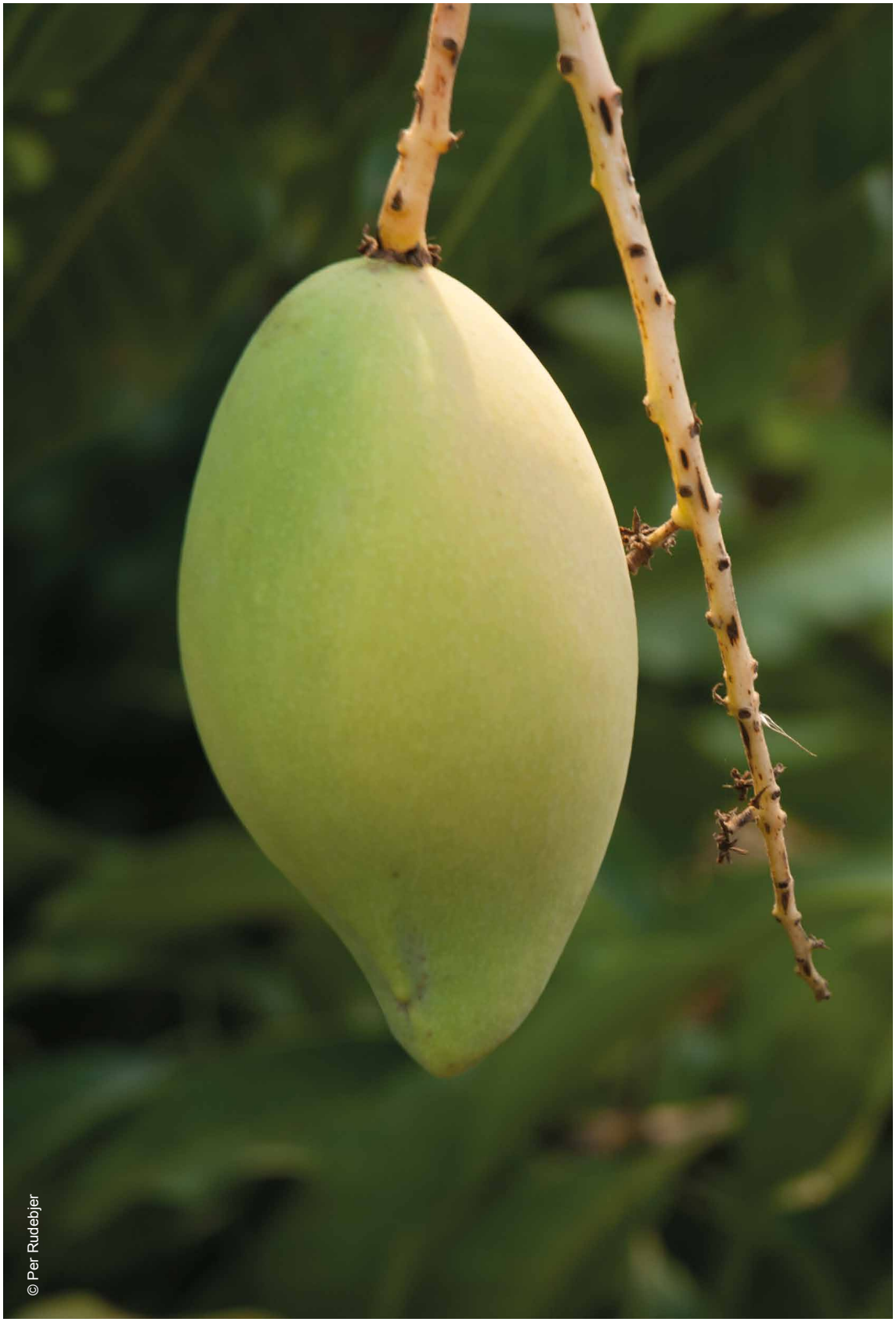
Abbreviations and acronyms

AIS	Agricultural innovation systems
CDAIS	Capacity Development for Agricultural Innovation Systems
FAO	Food and Agriculture Organization of the United Nations
IFPRI	International Food Policy Research Institute
NGO	Non-governmental organization
SDG	Sustainable Development Goal
SWOT	Strengths, weaknesses, opportunities, threats
TAP	Tropical Agriculture Platform



Breeding new varieties that meet consumer demand can raise farmer income.

Introduction and objectives

Innovation regarding technologies, processes or ways of organization is essential in a country's quest for improving and transforming food and agriculture systems and achieving the Sustainable Development Goals (SDG). Agricultural innovation systems (AIS) is a model for how this occurs. It illustrates the complex web of individuals and organizations that make innovation happen in reality, the role of 'bridging organizations' that serve and facilitate the innovation process and the importance of an enabling environment that stimulates innovation.

The AIS concept is a shift from the linear, technology transfer view of research and development that dominates the agriculture sector in many countries. An AIS approach better illustrates the reality of complex, dynamic agricultural innovation processes that involve a range of stakeholders with different roles (Figure 1). But the AIS concept is poorly understood among actors in the agriculture sector, including at the policy level, and is overlooked in agricultural education and training. According to the Tropical Agriculture Platform (TAP) (Box 1), national capacities needed for a functional, effective AIS are weak regarding functional capacities or 'soft skills'. This capacity gap hinders countries from taking full advantage of their innovation potential.

Box 1. Tropical Agriculture Platform

The Tropical Agriculture Platform (TAP), a G20 initiative launched in 2012, is a coalition of more than 50 global, regional and national partners that seek to strengthen agricultural innovation systems in the tropics and subtropics. The aim of TAP is to enhance the overall performance of AIS, with a focus on small- and medium-scale producers and enterprises in the agribusiness sector. TAP seeks to improve the efficiency and effectiveness of capacity development programmes for AIS through four-year action plans jointly implemented by the partners and supported by the European Union. TAP is governed by a general assembly and has a secretariat hosted at FAO's Research and Extension Unit (OINR) in Rome.

Source: **FAO.** 2022. The Tropical Agriculture Platform (TAP). Cited 13 October 2022. fao.org/in-action/tropical-agriculture-platform/en/

As countries seek to transform agriculture to meet the SDGs while adapting to climate change and other pressing challenges, they need information on how well their innovation systems actually work. They need evidence regarding their strengths and weaknesses and insights into opportunities and entry points for accelerating agricultural innovation. An assessment of AIS can provide such data and information, or can help countries access such data. The results of such an assessment can inform policy dialogue, guide capacity development interventions and suggest investment priorities.

The assessment process is also a capacity development opportunity in its own right; it raises awareness among stakeholders as the assessment is planned and carried out. The results become actions for strengthening capacities, which improve the AIS.

However, most countries have yet to conduct an AIS assessment. Accordingly, there is a need for raising awareness of what an AIS assessment entails and can achieve, how to plan and organize an assessment and how to train personnel involved in an assessment. This training manual addresses these needs.

Audience groups

An assessment of AIS would be organized by a government entity, a university or research institute, an international organization, or a project partnership. The training manual targets those in a position to plan and implement training of an AIS assessment team such as middle and senior-level agricultural professionals working in universities, ministries, consultancy companies and NGOs. For these groups, the training manual serves a guiding and inspirational role in designing and implementing a training course.

Many sections of the training manual will be useful as training materials.

The training manual is a companion to FAO's *Assessing agricultural innovation systems for action at the country level – A preliminary framework* (FAO, 2022).

Objectives

The general objective of the training manual is to guide trainers and facilitators engaged in developing capacities at the national level to assess agricultural innovation systems (AIS) and identify evidence-based needs and entry points for strengthening AIS.

After completing a training programme, trainers and facilitators will:

- be familiar with the concept of AIS and the Tropical Agriculture Platform's approach to capacity development for AIS;
- be familiar with the FAO framework on AIS assessment, approaches and tools to use in each step of the assessment; and
- be able to plan and assess an AIS in a specific national situation and interpret and communicate the results.

Using the training manual

A flexible, adaptive resource for a short training course

The training manual is designed as a guide to a training course of approximately 20 hours (see the draft curriculum, Annex 1). Depending on the context and objectives of the training, the course could be a full-time activity over three or four days or be divided into shorter segments spread out over a longer period.

The training manual contains eight modules, each taking two to three hours to complete. It is designed for a highly participatory learning process where trainees' experiences and reflections on agricultural innovation processes are central to the learning. A small number of innovation case studies, well known to the trainees, will be identified at the outset. Preferably, the training would be conducted face-to-face, but it can also be carried out virtually using online meeting software.

This manual presents the structure and content of a training course on how to assess AIS and presents ideas on how it might be carried out. In practice, as each course and context is different, this outline will need to be adapted to the particular needs and context in each situation by the course trainer or facilitator. Detailed planning should also consider the country's objectives for an AIS assessment.

Module overview and structure

The course is structured into eight modules:

Module 1. Agricultural innovation systems and their assessment covers the main principles and components of an AIS and how this differs from a technology transfer model. It introduces the Tropical Agriculture Platform Common Framework on Capacity Development for AIS and discusses the reasons for assessing a country's AIS to guide decisions on how they can be strengthened.

Module 2. FAO framework for assessment of agricultural innovation systems presents a conceptual model for an AIS assessment, which also provides the structure of the training course. The workflow for an AIS assessment is discussed: a situation analysis to identify the scope and setting objectives for an AIS assessment; preparation and organization of an assessment; and using outputs of an AIS assessment to strengthen innovation capacities.

Module 3. Functional analysis: How does agricultural innovation actually happen? This module shows how to select and use case studies to analyse how an innovation process actually happens. A range of central functions of the AIS is identified and described. The case

studies also help Identify enabling and hindering factors in relation to the performance of the identified functions.

Module 4. Structural analysis is about analysing the networks and relationships of the stakeholders involved in the innovation system. Social network mapping and stakeholder analysis tools are introduced to map how structural aspects are linked to innovation system performance and identify areas that need to be strengthened.

Module 5. Capacity analysis covers how different dimensions of capacities influence innovation system performance (individual, organizational, policy level). Different types of capacity assessment tools are introduced. The module also discusses the use of capacity assessment results for identifying entry points and interventions for strengthening AIS.

Module 6. Enabling environment analysis covers the dimensions of the enabling environment (policy, legal and regulatory framework, governance, infrastructure, investments and institutional and cultural aspects). Methods for conducting an analysis of the enabling environment related to these functions in the innovation system are presented to illustrate how this affects AIS performance.

Module 7. Consolidated analysis of the agricultural innovation system is about assembling and analysing all the assessment results at the level of a national AIS. This step is reviewing and organizing the challenges and constraints in the national AIS and identifying opportunities for improvement. It also prioritizes the issues that constrain the AIS in the light of national priorities and the broader context. The module also considers the country's capacity for addressing these problems to strengthen the AIS.

Module 8. Developing an agenda for action to strengthen AIS concludes the training by analysing options for addressing priority problems and formulating recommendations and action plans for strengthening the AIS. The validation of recommendations and an agenda for action with stakeholders is also covered, as are communication strategies for sharing results.

Each module has the following structure:

- **Objectives:** Two or three learning objectives for the module.
- **Key learning points:** A few learning points summarizing the knowledge, skills and attitudes to be developed in trainees.
- **Module introduction:** A short narrative of three to five pages that highlights the theoretical and applied background to the module and introduces the main conceptual frameworks and figures.
- **How-to methods and exercises.** This section introduces a methodology the trainer might use to conduct the training. A set of exercises for participatory learning activities are presented.

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Small and medium enterprises are key players in the agricultural innovation system.

> **Bibliography:** References and links to resources and tools.

> **Draft curriculum:** Annex 1 contains a draft curriculum for each module.

Annex 1. Draft curriculum. A sample curriculum is presented that covers eight modules of two and a half to three hours each. The final, detailed curriculum will be developed by the course trainer or facilitator based on the national context, the specific course objectives, and the time available.

Annex 2. Training course evaluation form. A template for participant evaluation. The results should be used to guide improvements in the training approach.

Principles

The design and implementation of an AIS assessment training course should follow these basic principles.

- **Guided by a desire to improve and strengthen national AIS.** Consultations with a range of stakeholders should define the objectives for an AIS assessment. Policy makers are one important group to involve, as are agricultural extension services, the private sector, farmers and community-based organizations. These consultations are held before an AIS assessment. The results should be reflected in the objectives, planning and preparation of the course.
- **Selection of trainees based on competency and professional background.** An effective AIS assessment team would cover a wide span of competencies and professional backgrounds. The selection of trainees should reflect this.
- **Practical and context-specific cases:** During an actual assessment of AIS, real innovation cases should be used to study the innovation process. In the training, this can be achieved by using examples of case studies the trainees are familiar with.
- **Learner-oriented approach:** It is advisable to design the course with a focus on learner-oriented approaches where the trainee's experiences in agricultural innovation are given ample space. Open dialogue, reflection and learning are important aspects of the training.
- **Multistakeholder participation:** The training course puts principles of multistakeholder participation up front, given their importance for understanding AIS and carrying out and using the results of an AIS assessment. The training should therefore use context-appropriate tools for the facilitation of a participatory, multistakeholder process. Many such tools are available and can be adapted to the training context.

Agricultural innovation systems: a relatively unfamiliar concept

During an assessment, the team is likely to encounter situations when participants in workshops or interviews are unfamiliar with the concept of AIS. There are several reasons for this such as little exposure to systems thinking in educational background or work experience; a predominant and persistent technology transfer view of agricultural research and development; and limited coverage of AIS concepts in national agricultural policies and strategies. An AIS assessment team needs to approach interviews, dialogues and workshops with this in mind. Discussing AIS concepts up front during an interview or a workshop risks starting the conversation on the wrong foot and forcing people outside their comfort zone.

Most people are comfortable talking about their personal experience of innovation within their area of work. This may be about using something old in new ways or applying something new to bring about successful social and economic outcomes. A general rule of thumb, therefore, is to approach the topic of agricultural innovation from familiar ground where the interviewee feels 'at home' and 'safe'. Later, the interview can move on to more complex issues. Often, the assessment team will later interpret information from interviews and workshops in the context of the AIS model. Interviews and workshops can yield useful information on the AIS without putting the concept up front.

The training course could explore trainees' own experience of and familiarity with the concept of AIS as a useful warm-up activity.

Module 1

Agricultural innovation systems and their assessment

OBJECTIVES

> Understanding the concept of agricultural innovation systems and how this approach differs from a technology transfer innovation model.

> Raising awareness on the needs for and benefits of assessing agricultural innovation systems.

KEY LEARNING POINTS

In this module the trainee will learn about:

> key principles and components of an agricultural innovation system;

> differences between an AIS approach and a technology transfer model;

> the Tropical Agriculture Platforms' Common Framework on Capacity Development for AIS; and

> reasons for assessing a country's AIS.

Module introduction

Introduction to agricultural innovation systems

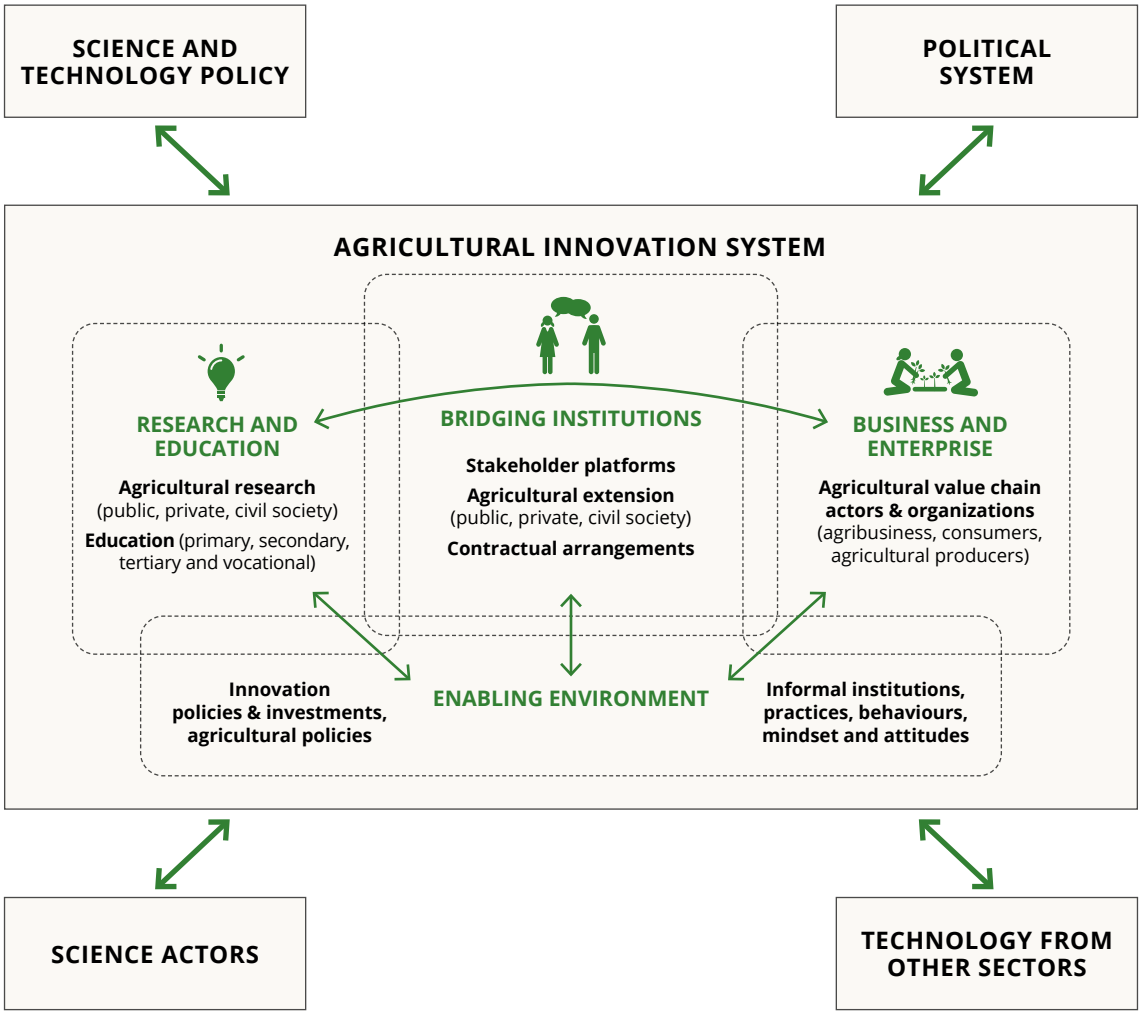
Agricultural innovation is in focus as the world seeks to increase global food production by 70 percent compared to 2010 levels to feed a global population of some 9.1 billion in 2050. This growth must also meet goals such as ecosystems and biodiversity conservation, maintaining soil health and watershed function, and ensuring occupational health and safety as well as food safety. The need to lower carbon emissions from agriculture and adapt to the effects of climate change are also central issues. Innovation is therefore central to achieving the Sustainable Development Goals (SDG).

The national context for agricultural innovation varies between countries, but some mega-drivers that influence agriculture and food systems are ever-present such as demographic change and urbanization, dietary change with increased consumption of meat and processed, energy-rich but nutrient-poor foods, global trade in agricultural products, growing demand for organic and fair trade foods and healthy 'super foods' and land-use change. The agriculture and food system has significant environmental, social and economic dimensions that impact agricultural innovation processes. Trade-offs and externalities of agricultural development and innovation must be understood.

The Tropical Agriculture Platform (TAP) observes that *"...innovation for agricultural development has long been dominated by the view that relevant knowledge is essentially generated by research and passed on to the extension system for adoption by farmers through a linear process of technology transfer. But this approach, successfully adopted during the Green Revolution, has largely failed to tackle contemporary agricultural development complexity"* (TAP, 2016). To better explain how innovation actually happens in food and agriculture systems, a different model is needed that considers the multistakeholder processes central to many innovations and which recognizes the role of policy dimensions and the broader environment. The Tropical Agriculture Platform innovation systems model responds to this need (Figure 1).

In this model, agricultural innovation takes place in a dynamic environment that involves research and education, agricultural business and enterprise including farmers and bridging institutions that facilitate innovation and provide services for innovation processes. All this is influenced by the 'enabling environment' that may either enable or hinder innovation. Agricultural innovation is also linked to a country's broader strategies for science, technology and innovation and the political system.

Figure 1. **Conceptual diagram of an agricultural innovation system**



Source: **Tropical Agriculture Platform.** 2016. *Common framework on capacity development for agricultural innovation systems: conceptual background*. CAB International, Wallingford, UK. cabi.org/Uploads/CABI/about-us/4.8.5-other-business-policies-and-strategies/tap-conceptualbackground.pdf

TAP defines an AIS as a network of actors (individuals, organizations and enterprises), together with supporting institutions and policies in agricultural and related sectors that bring existing or new products, processes and forms of organization into social and economic use. Policies and institutions (formal and informal) shape the way these actors interact, generate, share and use knowledge and jointly learn (TAP, 2016).[1]

[1] Many people use the terms 'organization' and 'institution' synonymously. However, in AIS the term 'institution' relates to laws, regulations, attitudes, habits, practices and incentives (formal or informal).

Capacity development for agricultural innovation systems

The technology transfer model has long dominated thinking about innovation in tropical and subtropical countries. In this model, the research system develops new technologies which are then passed on to farmers via agricultural extension and advisory services. While this model might be valid for some technical innovations, this one-way approach misses out on local innovation and adaptation by farmers and other actors, including in the private sector. Bringing research into use is an ongoing concern and perhaps an indication of the shortcomings of the technology transfer model.

With a view to strengthening capacities for agricultural innovation in low-income tropical countries, TAP conducted three regional surveys that covered 27 countries in Africa, Latin America and Asia-Pacific (Aerni, 2013). The study found three major gaps that the regions appear to have in common:

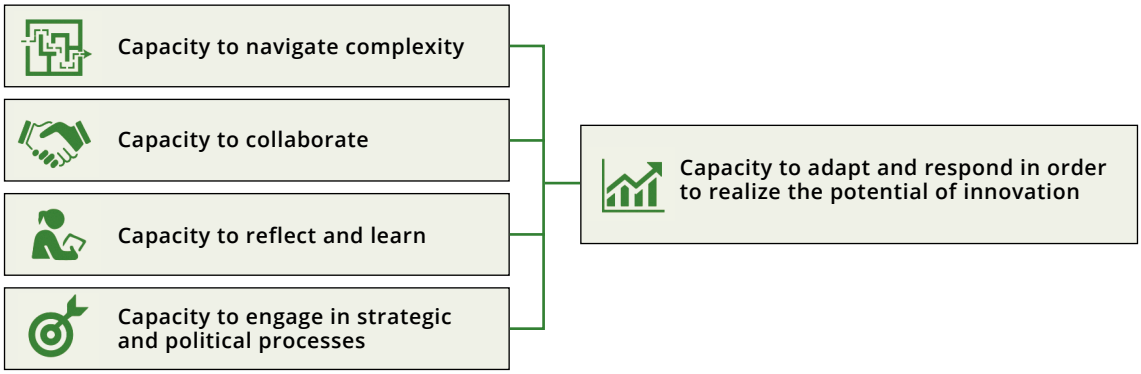
- Current initiatives to promote capacity development in agricultural innovation do not match the corresponding needs of agricultural producers and service providers.
- Weak institutions especially in research, education and extension that do not have incentives to assume a more active role in the agricultural innovation system and seek private sector collaboration in areas where there is an effective demand in the agricultural economy.
- Lack of facilitating policies that bring about institutional change towards a more dynamic and demand-driven AIS and create an enabling environment that rewards public-private partnerships in capacity development for agricultural innovation.

To address these gaps, TAP set out to develop a Common Framework on Capacity Development for AIS (TAP Common Framework for short), published in 2016 and tested in eight pilot countries during 2016–2019 with the support of the European Union.[2] A central principle is that developing AIS requires a set of functional capacities, or 'soft skills', along with the technical capacities that many capacity development interventions tend to focus on (Figure 2). By developing this set of functional capacities, a country can unleash its capacity to adopt and realise its innovation potential.

Another important concept is the 'three dimensions of capacity development'. Interventions on capacity development for AIS need to consider all three–individuals, organizations and the enabling environment–which are interconnected through push and pull factors (Figure 3). This implies that partnerships and networks are critical for creating new knowledge.

[2] Angola, Bangladesh, Burkina Faso, Ethiopia, Honduras, Guatemala, Lao People's Democratic Republic, Rwanda.

Figure 2. **Functional capacities in agricultural innovation systems**



Source: **Tropical Agriculture Platform.** 2016. *Common framework on capacity development for agricultural innovation systems: conceptual background*. CAB International, Wallingford, UK. cabi.org/Uploads/CABI/about-us/4.8.5-other-business-policies-and-strategies/tap-conceptualbackground.pdf

Figure 3. **Three dimensions of capacity development**

Source: **FAO.** 2010. *Enhancing FAO's practices for supporting capacity development of member countries. Learning module 1.* fao.org/3/i1998e/i1998e.pdf

The TAP Common Framework contributes to mainstream AIS approaches in low-income countries. As with most systemic changes, this is a long process that needs to be supported and promoted at global, regional and national levels. Since 2019, a new project, TAP-AIS,[3] also supported by the European Union, has been scaling up the TAP Common Framework in six new countries and is also bringing it to regional research and extension organizations in Africa, Asia-Pacific and Latin America and the Caribbean.

Why assess agricultural innovation systems

In many countries, AIS are underperforming due to numerous constraints (e.g. insufficient capacities, inappropriate policies, poor infrastructure, underinvestment and weak collaboration and interaction between actors). In other cases, innovation is rapid and significant, such as the rise of digitalization of agriculture and trade in products through Denomination of Origin or Fair Trade labels. But reliable and timely data and indicators on the status of the AIS are seldom available to guide policy and decision-making.

Therefore, AIS actors, policy and decision-makers at national and sub-national levels need insights on innovation systems such as how they function, the constraints and challenges they face and opportunities and entry points for improving them. A well-prepared and well-executed AIS assessment can provide data and information needed for evidence-based policymaking, priority setting and targeting investments and initiatives. Such evidence can inform action plans on strengthening agricultural innovation systems, which then contribute to national science, technology and innovation roadmaps that help realize the SDGs.

Another reason for assessing AIS, not to be forgotten, is that the assessment process itself helps develop capacities by creating awareness of AIS concepts and approaches during interviews, focus groups and workshops.

The objectives of an AIS assessment, therefore, are three-fold:

- To characterize AIS and provide insights on enabling and hindering factors in a country's innovation systems.
- To provide evidence-based recommendations and action plans on how to strengthen AIS.
- To develop capacities on AIS approaches among stakeholder organizations and policy and decision-makers.

[3] Developing capacities in agricultural innovation systems: Scaling up the Tropical Agriculture Platform Framework, a project supported under European Union's DeSIRA initiative.

How-to: methodology and exercises

A draft curriculum for Module 1, Introduction to agricultural innovation systems and their assessment, is presented in Annex 1. Trainers can use this to help prepare a detailed training programme adapted to the context of their course.

Suggested duration: 2 hours and 30 minutes.

Module 1 has one presentation:

- Introduction to AIS, which explains the conceptual diagram of an AIS developed by the TAP and the main concepts and definitions central to the course and to assessing AIS.

Exercises

Exercises to include in Module 1

1. Ice-breaker and introduction

- Ask participants to stand up and form pairs with someone they do not know.
- For five minutes or so, the two introduce themselves to each other (education, work, involvement in agricultural innovation and perhaps something personal such as a main hobby or 'hidden talent').
- In the plenary, everyone will introduce their 'new friend'.
- After this opening, everyone will have met a new person and spoken in the plenary. This exercise should help participants start reflecting on their experiences concerning the course.

2. Group work: Quick mapping of the country AIS

- Form small groups (four to six per group is a good number), preferably with people working in different organizations and with different expertise. A good approach is to organize groups of participants beforehand to be sure they include people who do not know each other. If there happen to be people from other countries participating they can be randomly assigned to groups. Their questions as 'outsiders' can stimulate thinking.
- In these groups, use the conceptual AIS diagram to map the main actors and processes in your country's AIS, covering:
  - research and education;
  - business and enterprise;
  - bridging institutions; and
  - enabling environment.

- Presentation of group work.
- In the plenary, reflect on the question: What are the main drivers of agricultural innovation? Consider factors such as science and technology, culture, macroeconomics and policies.

3. Agricultural Innovation Systems versus technology transfer

- In the plenary, discuss the characteristics of an agricultural innovation systems approach and technology transfer approach.
- As the discussion proceeds, make lists covering the dimensions of an innovation process in the two approaches. For example, the analysis may cover purpose and scope, who the innovators are, the role of farmers, the role of scientists, the role of markets, and capacity development (see TAP 2016, Table 2.2).
- Compare the lists and discuss the differences and similarities between the two approaches.

4. Discussion: What to assess in AIS?

- As assessment of AIS is new to most participants, it is good to reflect on what such an assessment might include.
- Consider the results of Exercises 2 and 3: What to assess in AIS? Cover both 'hard' and 'soft' processes.
- This could be discussed in small groups or, if time is short, trainees may write on cards.
- Write answers on cards (one point on each card).
- The trainer then organizes all the cards in thematic clusters on a board or a wall.
- The trainer then leads a discussion on the main elements of AIS assessment, preferably with participants standing around the thematic clusters.

Digitalization of agriculture is rapidly improving farmers' access to information, services and markets.

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Further resources

A useful **glossary of terms** related to agriculture innovation systems and capacity development is presented in Tropical Agriculture Platform (2016), see reference above.

The website of the Tropical Agriculture Platform (TAP) contains a wide range of publications, tools and other information on capacity development for AIS: **FAO.** 2022. The Tropical Agriculture Platform (TAP). Cited 13 October 2022. fao.org/in-action/tropical-agriculture-platform/en/

Module 2

FAO framework for assessment of agricultural innovation systems

OBJECTIVES

> To provide insights into preparation and setting objectives for an AIS assessment in a specific national context.

> To familiarize participants with the FAO framework for AIS assessment.

> To become more familiar with the expected outputs of an AIS assessment and how results can be used to plan for strengthening innovation capacities.

KEY LEARNING POINTS

In this module the trainee will learn:

> how the lead organization of an AIS assessment might prepare for and organize an AIS assessment;

> how a situation analysis or consultation helps set objectives and identify entry points for an AIS assessment in the context of the country's needs and priorities;

> the four steps involved in FAO's framework for an AIS assessment; and

> how results of an AIS assessment can be used to plan and implement actions that strengthen the country's innovation capacities.

Module introduction

FAO framework for AIS assessment

In 2020 and 2021, FAO developed a framework for AIS assessment and tested it in eight countries under the TAP-AIS project. The experience gained inspired the development of this training manual.[4]

In Module 2, trainees will become familiar with the FAO framework for AIS assessment and explore how it might be applied in their country. The ultimate aim is to support countries to make evidence-based decisions that strengthen agricultural innovation processes, policies and investments at all levels. The AIS assessment cycle has three integrated phases, which are further explored in this module (Figure 4). The phases are:

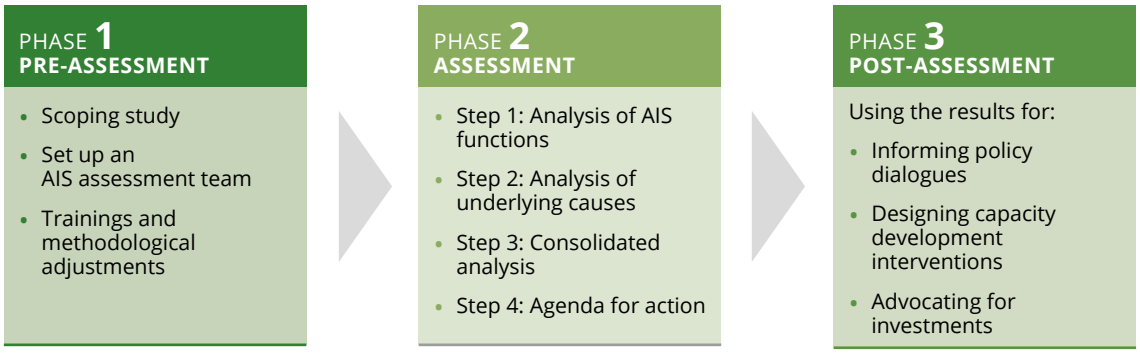
1. **Planning and preparation** (pre-assessment) is carried out by the lead organization of the assessment, such as a ministry of agriculture, and aims to establish how to integrate the assessment into the national context.

2. **The AIS assessment phase** using FAO's AIS assessment framework is carried out by the AIS assessment team in consultation with the lead organization and, preferably, an advisory group.

3. **The post-assessment phase** follows up the assessment to ensure the results are promoted and used to the best effect and that information and evidence from the assessment are used in policy dialogue, designing capacity development interventions and investment decisions. This is typically the responsibility of the lead organization.

While this training course mainly focuses on Phase 2, trainees need to understand how the assessment they will conduct fits the national context and how the results of their work can influence future policies, strategies and programmes designed to strengthen the AIS.

Figure 4. **Three phases of an AIS assessment initiative**



Source: **FAO.** 2022. *Assessing agricultural innovation systems for action at country level - A preliminary framework.* Rome. doi.org/10.4060/cb0614en

[4] Burkina Faso, Cambodia, Colombia, Eritrea, Lao People's Democratic Republic, Malawi, Rwanda and Senegal.

Planning and preparation

The scope and objectives of an AIS assessment are adapted to the country's context and needs. The assessment must reflect priorities in the agricultural sector and the broader science, technology and innovation environment. Before starting an AIS assessment, the country team undertakes preparations to ensure that:

- The assessment addresses issues considered a priority in the country context, which helps set objectives and identify entry points for the assessment. This process, for which there are several options from informal consultations to a formal scoping study, is a necessary and integrated part of the assessment.
- Available information on agricultural innovation is identified and given consideration, for example, national statistics and indicators, agricultural and innovation strategies and relevant studies.
- The main stakeholders in the agriculture sector, such as senior staff in ministries, universities, donors and projects, NGOs and farmer organizations, are informed and possibly involved at different stages of the assessment. This improves the quality, sense of ownership and use of results and contributes to capacity development.
- The assessment is well planned and has a realistic budget and timeline that matches the objectives.
- A competent AIS assessment team, with a good mix of expertise, is recruited or identified.
- A 'reference group' comprised of multidisciplinary expertise is identified to support and provide feedback to the AIS assessment team.

The AIS assessment phase

The FAO assessment framework (Figure 5) has four steps. Each will be further studied in subsequent modules of this training course.

Step 1: Functional analysis. This step characterizes the functions delivered by the national AIS, mostly based on insights from a set of innovation case studies. A set of three or four carefully selected case studies provide information on how innovation is actually happening. Taken together, they serve as a proxy for the national AIS and for identifying enabling and hindering factors.

Step 2: Combining structural analysis, capacity analysis and enabling environment analysis. This step seeks to understand more deeply the underlying causes of how AIS functions are performing. This is done through:

- structural analysis of stakeholders to highlight issues of interaction, collaboration, influence and alignment among a variety of organizations;

- capacity analysis to highlight the capacities needed for the optimal functioning of the national AIS at local, organizational and national levels; and
- analysis of the enabling environment to provide insights on policy and legal frameworks, institutions and cultural aspects that influence innovation processes and actors.

Step 3: Consolidated analysis. This step assembles all the results at the systems level, with an emphasis on the major challenges and constraints. The consolidated analysis also identifies opportunities and entry points for strengthening the AIS. Priority setting may be part of this analysis. Available systemic capacities and options for improving the national AIS are considered.

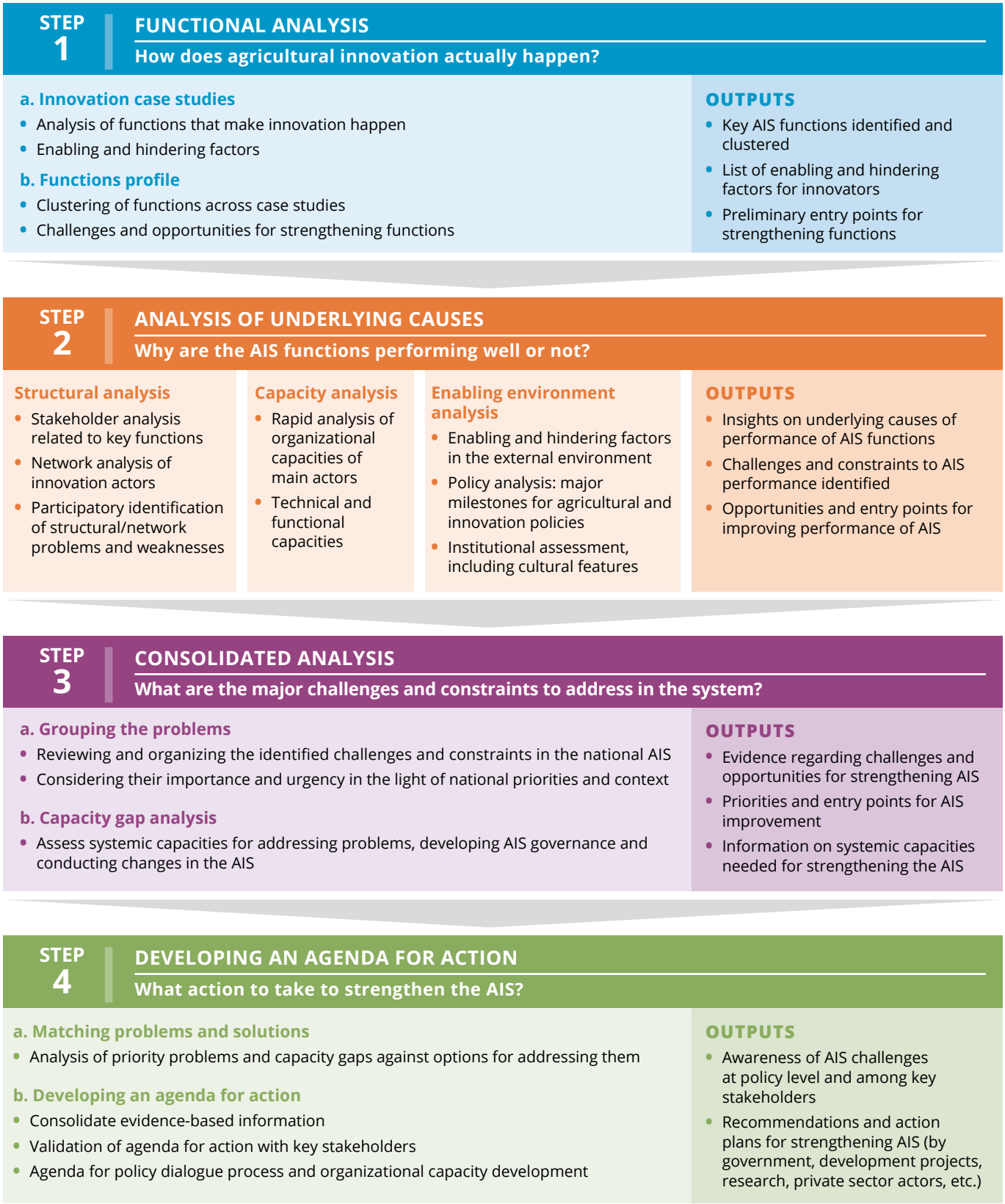
Step 4: Developing an agenda for action. In this final step, the team prepares evidence-based recommendations and action plans to strengthen the AIS. The validation of results with stakeholders is a central element. This paves the way for using results for developing capacities in the main organizations involved in the innovation system and at the policy level. Finally, recommendations and an agenda for action are developed and an AIS assessment report is prepared. Additional products may include a brief AIS country profile which can be used for promotion and awareness-raising.

Post-assessment phase

Planning for how the outputs and results of an AIS assessment can strengthen the country's AIS should be considered from the outset. The outreach and communication aspects are central to a successful outcome of an assessment. It brings assessment results into use, informs policy dialogue and helps develop capacity. While this mainly is the responsibility of the lead organization, it is also useful for the AIS assessment team to consider options for bringing the results into use. For example, consultations during the assessment may have identified opportunities where AIS assessment results could be useful or identified stakeholders with a particular interest in the results.

The potential use of results also influences the recommendations and proposed actions coming out of the assessment. For example, proposed actions must be practical and achievable in the medium term as this will increase the likelihood they are acted upon.

Figure 5. **Standard steps and outputs of an AIS assessment**



Source: Authors' own elaboration.

Improving quality along agrifood value chain boosts access to domestic and international markets. This implies complying with standards and regulations, as well as meeting environmental and social codes of conduct.

How-to: methodology and exercises

A draft curriculum for Module 2 is presented in Annex 1, which the trainer may use to prepare a detailed training programme according to the context and objectives of the course.

Suggested duration: 2 hours and 30 minutes.

The module will include two presentations:

> The first covers the three phases of an AIS assessment process (based on Figure 4). This will place the AIS assessment into the broader national context and how it meets specific needs, requirements and opportunities. Among other topics, the presentation will discuss setting objectives and the assessment oversight by a lead organization and advisory group. The importance of stakeholder participation and engagement throughout the assessment should be emphasized.

- The second presentation will familiarize the trainees with FAO's AIS assessment framework (Figure 5), introducing the four steps, and the main activities and outputs of each step. Discussion and clarification of key points will follow as needed.

Exercises

Exercises to include in Module 2 could be:

1. Why assess AIS?

- In plenary (or in groups), discuss these questions:
  - Why assess your country's AIS?
  - What benefits and added value could an AIS assessment provide?
  - What are the potential risks and challenges that could hinder a successful AIS assessment?
- Make lists of these points on a flip chart or whiteboard (keep the results, as the trainer might want to use them in later modules).
- Discuss: How would these aspects influence the planning and organization of an AIS assessment? What potential pitfalls are there and how can they be avoided.

2. Using results of an AIS assessment for better policy and decision-making

- In groups, discuss how information and evidence from an AIS assessment may be used in your country. Work in small groups (e.g. three to four persons per group). Each group works on one of the questions below these themes. Preferably, two groups work on the same theme to allow a comparison of results.
- How can AIS assessment results be used to:
  - influence policymaking and policy dialogue;
  - guide and strengthen capacity development efforts at various levels; and
  - inform and advocate for investments or changes in the AIS?
- Plenary presentation followed by open discussion.

Bibliography

The AIS assessment framework, Figure 5 is central to this training Module.

FAO. 2022. *Assessing agricultural innovation systems for action at country level: A preliminary framework*. Rome. doi.org/10.4060/cb0614en

Module 3

Functional analysis: how does agricultural innovation actually happen?

OBJECTIVES

> To identify and analyse the main functions needed for innovation to take place in different innovation processes.

> To identify enabling and hindering factors that influence the performance of those functions.

KEY LEARNING POINTS

In this module, the trainee will learn:

> how to select appropriate case studies for an AIS assessment;

> the main functions in innovation processes;

> how to analyse case studies to draw out the functions that make innovation happen;

> how to profile the functions of innovation processes and clustering functions across case studies and describe them; and

> how to identify enabling and hindering factors concerning the performance of the functions identified.

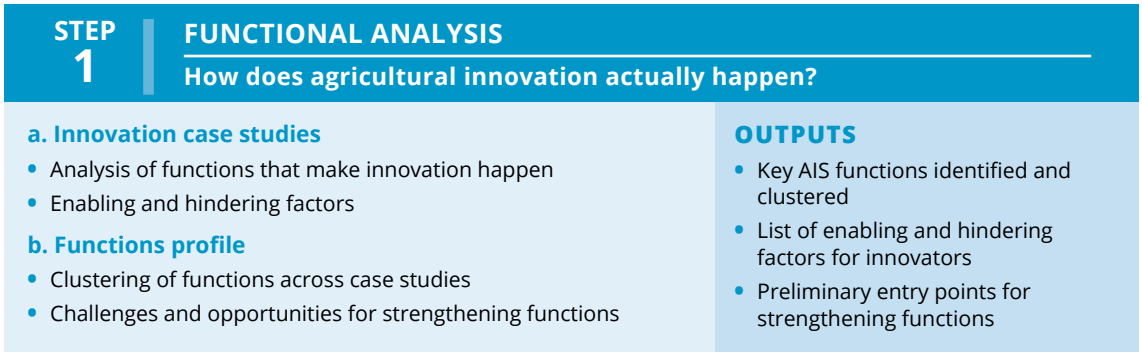
Module introduction

Innovation is a process of putting existing or new products, processes, and ways of organization into use. In agriculture, this process is supported by functions that appear on the pathway to realizing an innovation. The process varies depending on the innovation and the context in which it takes place. This also means the functions required to support the innovation process also differ, depending on the type of innovation and the context.

The aim of functional analysis is to understand how agricultural innovation actually happens (Figure 6). To identify, understand and analyse those functions requires a thorough review of an innovation process in a given context. Therefore, well-known innovation cases from the country and the context where the AIS assessment is being carried out can be used in the analysis.

Case studies provide context on the innovation process such as (i) hindering and enabling factors (e.g. what made it work, what held up the process), and (ii) what were the functions along the way that made it happen (services, actions, activities, resources, etc.). If the case studies are well-chosen, then together they would reflect the performance of the AIS at the national level. Results of the functional analysis will be extrapolated and used for the consolidated analysis in Step 3 to analyse the challenges and opportunities for innovation more systematically and holistically. The results of functional analysis are critical inputs to determining needs, opportunities and entry points for strengthening AIS.

Figure 6. **Functional analysis**



Source: Authors' own elaboration.

Selection of innovation cases

The functional analysis starts with identifying and selecting appropriate innovation cases, also referred to as case studies. The selection of cases is critical as it influences the further analysis of the AIS system as a whole. Depending on the scope, objective and scale of the assessment, it is best to select at least two to three cases with different types of innovation and scale. For example, a case from a successful value chain development might be a good option, as this is practical and concrete, yet requires a system for it to work.

Some criteria for selecting cases are provided below. This list should be further refined to meet the objective of the assessment and fit the country's context. Suggested criteria are:

- **Innovation success story:** An innovation process is not always linear or apparently successful. It can be challenging with many obstacles along the way. Addressing those obstacles and overcoming them can result in innovation (e.g. organizing producers into groups for collective action allowed them to overcome the challenge of delivering a consistent supply of quality produce, share the cost of transportation and address challenges linked to access to markets, inputs, and other productive resources). Although lessons can be learned from unsuccessful cases, choosing innovation cases with a happy ending, positive impact and an interesting process would better demonstrate a complete set of functions needed to make innovation happen.
- **Different types of innovation in one:** There are different types of innovation (institutional, social and technological) as indicated in Module 1. The innovation cases selected for the functional analysis in the AIS assessment should include at least two types of innovation and innovation processes.
- **Commonly known and familiar:** The AIS assessment uses a participatory approach to engage multiple stakeholders involved in the AIS. To make the analysis easier and more relevant, it is best to choose cases that most stakeholders are familiar with and can relate to.
- **Multi-actor engagement:** The selected cases should include multiple actors that play different roles. They should also consider the inclusivity of vulnerable groups (e.g. women, different producer groups, ethnic groups).
- **Sustainability:** It is ideal to select cases that have been scaled and are sustainably funded and institutionalized in existing structures and systems. A short-term project would not be ideal.

Functional analysis of innovation case studies

1. **Unpacking the innovation case:** The functional analysis aims to understand what actually happened in the innovation process in each case study and how. Ideally, the functional analysis of the cases is done in a workshop setting with the system stakeholders using a participatory approach. This workshop analysis should be further reflected upon and refined by the AIS assessment team to ensure the identified functions reflect the functions of the national system as a whole.

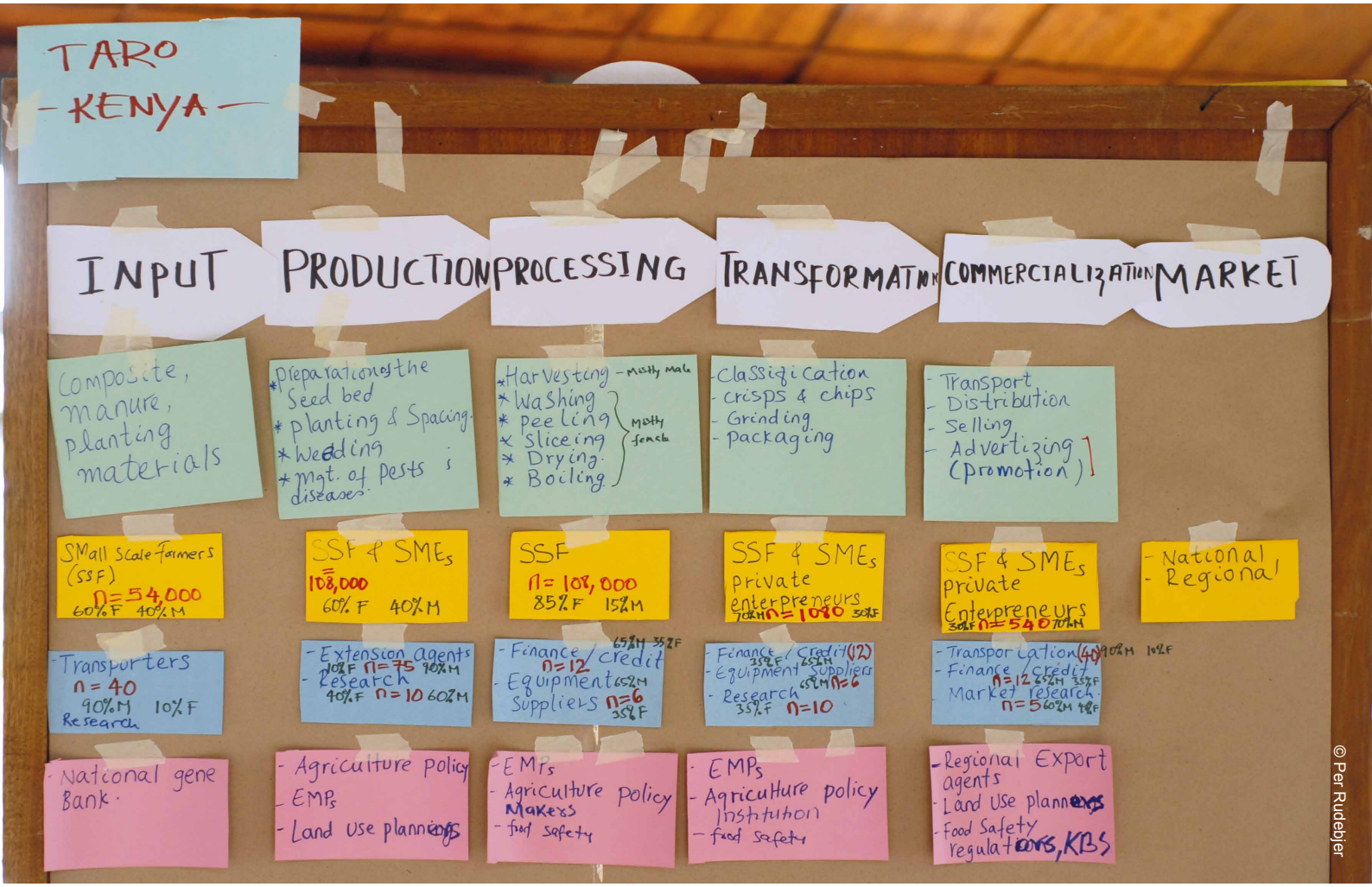
   Unpacking the innovation cases carefully and thoroughly helps identify the functions (actions, activities, services, etc.) in the innovation process and understand the factors influencing their performance. These guiding questions can be used:
   - What actually happened? What changed?
   - How did it happen? What was the process of innovation?
   - What made it a success?
   - What kind of processes, actions and services were involved?
   - What other functions were missing?
   - What might have worked better?

   This should result in an extended list of functions (activities, services, actions, etc.) that were part of the innovation process in each case study.

2. **Clustering the functions:** The extended list of functions identified through unpacking should be clustered into groups around closely related functions. Understanding why and how those functions were needed is important in prioritizing them. This will help determine the main areas or clusters of functions critical to facilitating and supporting innovation processes. These functions should not be too many or too few. Six to eight functions are good indicative numbers.

3. **Analysis of functions:** Stories from the cases should provide insights into the context in which those functions took place and whether they were done well or poorly. Insights into the factors that influence their performance are critical in identifying entry points to strengthen them. Some that can be used are:
   - What made those actions, processes and services work well?
   - What factors were influencing them, positively or negatively?

4. **Identifying challenges and opportunities to strengthen key functions:** As a final step in the functional analysis of cases, identify the key challenges regarding those functions (activities, services, and actions) and opportunities to strengthen them for facilitating and enabling innovation. During this final analysis, reflection on the gaps and missing functions is also important to ensure that all the functions needed to support innovations in all forms and types are included in the analysis.



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Understanding how a value chain functions is important to innovation.

Developing functional profiles

Once the AIS assessment team has analysed case study data, they develop a first functional profile of the innovation system. The functions identified from the case study analysis will then be further complemented and validated with a broader range of stakeholders, perhaps at national level, to ensure those functions are inclusive and represent the agricultural innovation process in general. Supplementary data collection may also be needed to fill in gaps or confirm findings. Suggested steps are outlined below.

Stakeholder workshop or national stakeholder consultation meeting: Participants at this meeting should represent the different actors in the system, including the private sector, producer organizations, non-governmental and community organizations, financial institutes, academia, research and extension organizations, and informal and formal market actors. The AIS assessment team should facilitate the workshop and ensure the inclusive participation of all stakeholders. The information can be collected through a plenary discussion, small group exercises and discussions using cards, flipcharts, or other participatory tools. This workshop can also be used to conduct other analyses for the AIS assessment beyond the functional analysis.

Reflection and refinement: The AIS assessment team should reflect on the findings and discussions with stakeholders and further refine the functional profile to ensure overall coherence and alignment with the assessment objectives. Additional analysis might be needed to fill in gaps and confirm findings through triangulation. These approaches can be used to triangulate findings:

- key informant interviews;
- additional focus group discussions with specific innovation actors;
- complementary studies and reviews (e.g. policy, organizational reports); and
- online surveys.

The functional analysis is the first step in the AIS assessment and it sets the foundation for the other analyses illustrated in Table 1. Using the functions identified (in clusters), actors in the AIS system are identified and analysed in the structural analysis session. Similarly, based on the functions and actors identified, the capacity analysis will be carried out to identify entry points to strengthen those functions. Finally, all these functions depend on the enabling environment. All these dimensions are covered in Modules 4, 5 and 6 of this training guide.

Table 1. **Relationships between different analyses and how the functional analysis provides a foundation for them**

Functional analysis	Structural analysis	Capacity analysis	Enabling environment analysis
Clusters of key functions identified (functional profile)	Who carries out those functions Interrelations in innovation network	Capacity of innovation network to perform the function: strengths, weaknesses and gaps	How external environment influences behaviour: incentives (enabling factors) and disincentives (hindering factors)
Function 1	Org. 1 Org. 2 Org. 3		
Function 2	Org. 1 Org. 2 Org. 3		
Function 3	Org. 1 Org. 2 Org. 3		
Function 4	Org. 1 Org. 2 Org. 3		
Etc.	Etc.		

Source: Authors' own elaboration.

How-to: methodology and exercises

A draft curriculum for Module 3 is presented in Annex 1. Trainers can use this to prepare a detailed training programme adapted to the specific context and objectives of the training course.

Suggested duration: 2 hours and 30 minutes.

Module 3 includes one presentation:

> Introduction to functional analysis and AIS assessment Step 1. How does agricultural innovation actually happen? The presentation gives an orientation to the main functions of AIS and on selecting and using case studies for understanding innovation processes on the ground.

Exercises

Exercises to include in Module 3:

1. Analysing functions that support innovation processes

This exercise could be done in small groups, depending on the number of participants.

> Select an innovation case study using the criteria described in the module introduction.

> For this exercise, the case study should be well known to the group members.

> Preferably, the groups should work on different kinds of innovation.

> Identify how the innovation actually happened, using the guiding questions in the module Introduction.

> List the functions identified that supported the innovation and cluster them into six to eight main functions.

> Record the results in Table 2, which will also be used in other analyses of the AIS assessment.

> In plenary, the groups present the results of their functional analysis. Other groups provide feedback on the findings.

Table 2. **Functional analysis table**

Function	Description

Source: Authors' own elaboration.

2. Developing a functional profile of the innovation system

Developing a functional profile of the innovation system is important to move away from individual case studies towards a perspective of a national AIS, as described in the module introduction. In this exercise, the trainees can compare and use the results across all groups and jointly prepare one initial functional profile for the innovation system. Similarities and differences among group results will be analysed and discussed, and one consolidated set of six to eight functions will be agreed upon.

This can be done in plenary, as follows:

- The trainer consolidates the results of the group presentations and discussions on the functional analysis from Exercise 1.
- Many functions are likely to appear across two or more groups and others will be unique. Most likely, there will be a need to discuss this preliminary list and adjust it to ensure the functions are well understood and there is a manageable number of them.
- Then the trainer prepares a final consolidated profile of main functions (six to eight) with inputs from the trainees.

This consolidated profile of functions (based on the case studies) serves as input to a stakeholder workshop and other triangulation methods in the functional analysis.

3. Analysis of enabling and hindering factors

The final exercise focuses on enabling and hindering factors within the functions of the innovation system. This will provide initial insights into the challenges in the system, as well as opportunities for improvement, which are analysed in-depth in later steps of the assessment.

- Trainees should be divided into pairs or small groups and work on one or two functions each from the functional profile.
- The groups will analyse each function and list enabling and hindering factors, drawing on their personal insights on innovation cases and their general knowledge and understanding.

- For each function, the results are recorded on a flip chart or whiteboard.
- In the next round, the groups rotate functions, complementing the analysis of the previous groups, until each group or pair has reflected on and analysed all functions.
- The trainer can plan on 5 to 10 minutes of discussion per function.

This exercise can be done using cards or a SWOT analysis, depending on the training context.

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Module 4

Structural analysis

OBJECTIVES

- Understanding how structural aspects within and among organizations affect the performance of functions in an innovation system.
- Ability to map structures for collaboration and interaction among actors in the agricultural innovation system.
- Appreciate stakeholders' roles and mandates in the innovation process, including how their power dynamics and interests affect collaboration.

KEY LEARNING POINTS

In this module the trainee will learn about:

- conducting a stakeholder analysis of organizations performing key functions in the innovation system;
- using social network mapping tools to visualize links among organizations in an innovation system; and
- identifying structural strengths and weaknesses in networks of innovation actors, and opportunities and entry points for improvement.

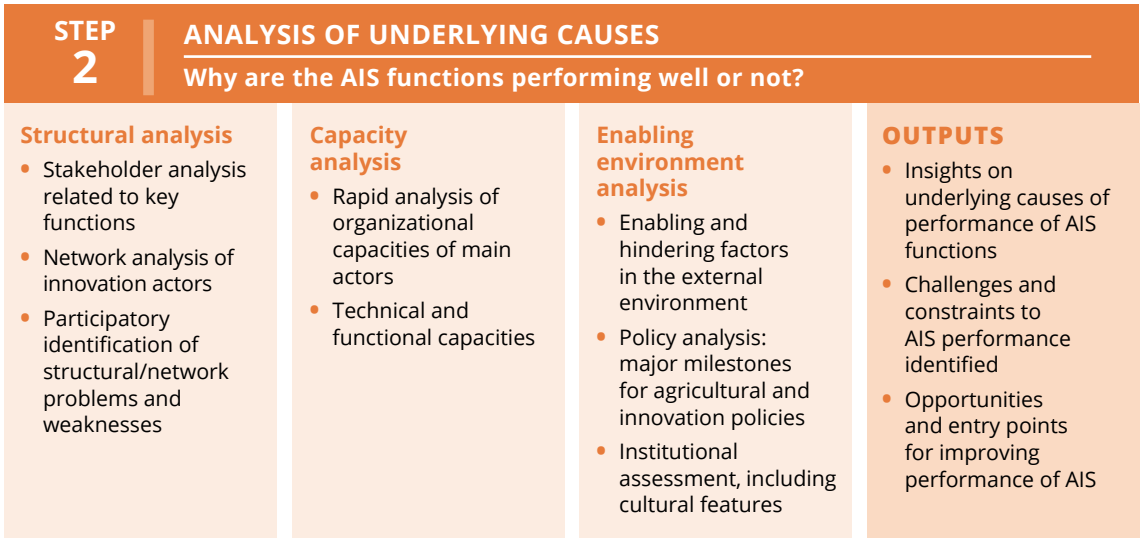
Module introduction

Innovation in agriculture and rural development involves interactions among a range of actors of different types. Therefore, understanding the patterns of collaboration and interaction among multiple stakeholders is central to the AIS analysis. Weak interactions and insufficient or ineffective collaboration in an innovation system are common issues.

The structural analysis identifies the actors performing the functions of the innovation system and maps how they work together. This analysis identifies structural strengths and weaknesses that affect the performance of a particular function in the AIS. These insights can then help guide interventions to improve system performance.

As described in Module 3, the first step of an AIS assessment uses case studies to understand how innovation happens in practice and identifies the main functions of an innovation process. Step 2 seeks to understand the underlying causes of the performance of these functions (Figure 7). Why are the AIS functions performing well or why not?

Figure 7. **Structural analysis, capacity analysis and enabling environment analysis: Three dimensions for assessing underlying causes of AIS performance**



Source: Authors' own elaboration.

The analysis of performance focuses on three interacting elements:

- the structure of the networks of actors involved (covered in this module);
- the capacity of those actors and networks to perform a function and strengthen the AIS (Module 5); and
- the external conditions for innovation are provided by the enabling environment (Module 6).

Taken together, these analyses:

- provide insights into underlying causes of the performance of AIS functions;
- identify challenges and constraints to AIS performance; and
- indicate opportunities and entry points for improving AIS performance.

Overview of structural analysis

The structural analysis consists mainly of identifying and mapping organizations and their interactions and the networks of the AIS. Structural analysis can be performed at a sub-system level (e.g. research and education or agricultural advisory services) to obtain an in-depth understanding of one or more sub-systems or functions important to an innovation system.

Actors and their roles in innovation systems or in delivering specific functions of the system could thus be identified along with their interactions with other organizations and individuals. The presence, frequency or absence of interactions and the strengths, weaknesses and nature of those interactions are the main elements to analyse. Interactions and networks are also dynamic relationships that evolve. Formal networks are easily recognized, whereas identifying informal networks can be more challenging. Indicators such as co-patenting or co-publishing can provide insights into collaborations among individuals for some innovation work.

Some questions to guide this part of the structural analysis, to be carried out for each identified function, are:

- Who are the actors carrying out the innovation function?
- How do the actors contribute to the innovation function? What are their roles?
- What are the relationships among the actors and how do they network and collaborate in the innovation function? What is the direction and frequency of the interaction?
- What are the power dynamics in the network?
- How do actors, their interactions and networks contribute to the innovation function?

Building on the functional analysis, the structural analysis will identify the actors who carry out each function in the AIS system and analyse their relationships (Table 3).

Table 3. **Structural analysis gives insights into who provides each function of the innovation system**

Functional analysis	Structural analysis	Capacity analysis	Enabling environment analysis
Clusters of key functions identified (functional profile)	Who carries out those functions Interrelations in innovation network	Capacity of innovation network to perform the function: strengths, weaknesses and gaps	How external environment influences behaviour: incentives (enabling factors) and disincentives (hindering factors)
Function 1	Org. 1 Org. 2 Org. 3		
Function 2	Org. 1 Org. 2 Org. 3		
Function 3	Org. 1 Org. 2 Org. 3		
Function 4	Org. 1 Org. 2 Org. 3		
Etc.	Etc.		

Source: Authors' own elaboration.

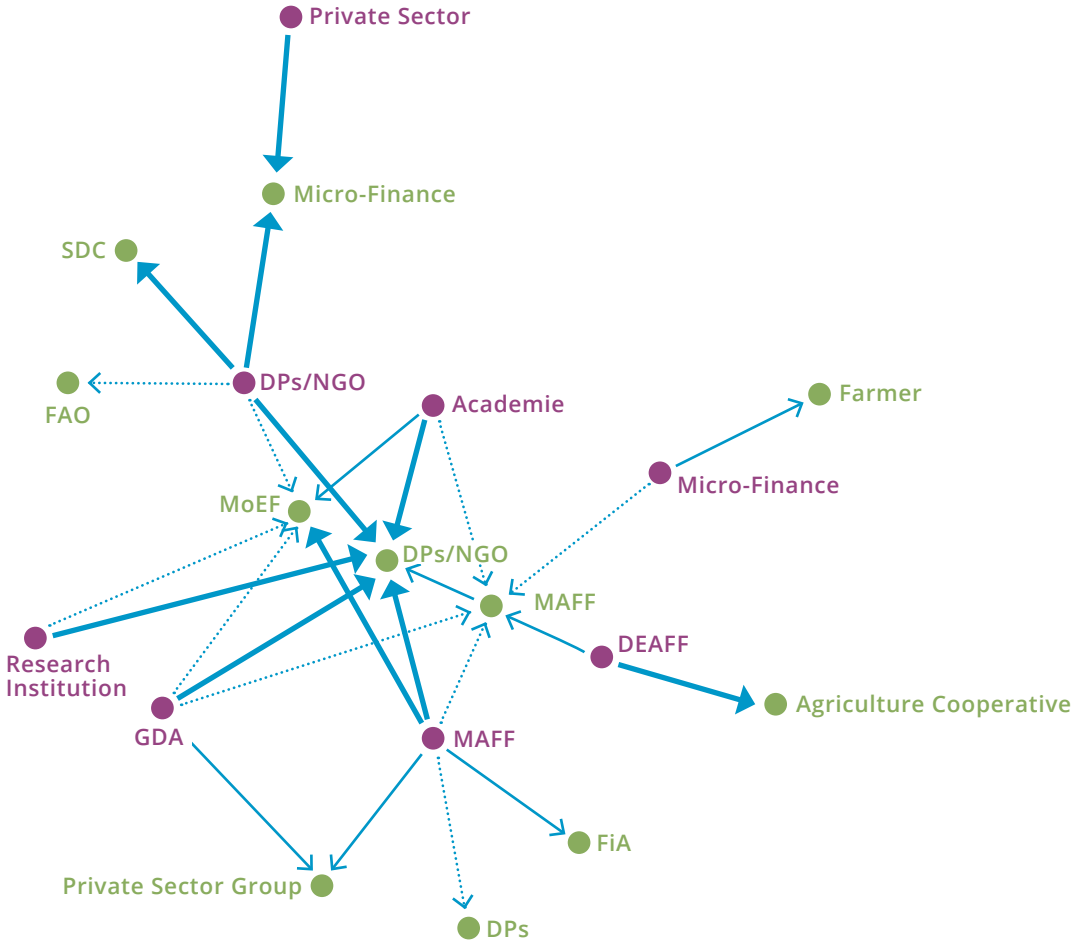
Social network analysis

Social network analysis is commonly used to analyse the actors in a system (Figure 8). This tool looks at relationships among and between the stakeholders and monitors their development over time. It considers the actors of a network (individuals, groups, organizations) and the links that connect them. There are many kinds of links or relationships, such as exchange of information or knowledge, market information exchange, business relationships in agricultural value chains, provision of technical, financial and advisory services, and collaboration on specific projects or initiatives. The frequency of the links varies as well. Some actors might interact daily, others once a week or sporadically.

Depending on the data available, this analysis can provide detailed information on the nature and frequency of interactions. Central and more peripheral actors and strong, weak or missing links in the network structure can be identified. Network problems may be detected. Collecting data at different points in time can reveal the dynamic change in a network. Connections can move and their number and frequency can increase or decrease as actors become more or less central as the network evolves.

Information on network structure also provides information on constraints and opportunities. If there is an interest in taking the analysis further, network data can be used when assessing the uptake of agricultural innovations. For example, exploring how centrality and exposure to knowledge determine the adoption of agricultural practices can provide evidence on how to achieve impact.[5]

Figure 8. **Network analysis of the function 'Financial access' in Cambodia**



Source: FAO. TAP-AIS project, Cambodia (unpublished).

[5] Centrality indicates importance within a network. Degree Centrality is defined as "the number of links incident upon a node" (i.e., the number of ties that a node has).

NetMap tool

Data for the social network analysis can be collected using various methods, including the NetMap tool (see Bibliography), or through a network questionnaire combined with online network analysis software.

The NetMap tool maps the position of actors in a network in a participatory setting. This tool reveals how stakeholders in a given innovation network are linked, how they work together and how they influence each other. The method is also useful for determining network boundaries and spotting potential bottlenecks and opportunities. For a NetMap exercise, a facilitator plays an important role in guiding the groups on how to categorize and describe the links.

Alternatively, a network questionnaire administered via interviews or online can be used for gathering data on a wide range of distinct types of links among actors. The data arrives in a format that can be easily used for further analysis. However, this method offers less of a learning experience than the NetMap tool because participants cannot visually and jointly identify the actors and their links or the nature of the relationships.

Social network analysis (using any of the tools) reveals the intrinsic power structures of a network, which helps users conceptualize and integrate the needs and interests of different local and external groups. Once the information is collected, processing and visualising the data is best done using specialized network analysis software (see Bibliography).

Stakeholder analysis

As part of the analysis of a system structure, a stakeholder analysis is often carried out for a deeper understanding of the actors and their roles. Stakeholder analysis gathers and analyses qualitative information to determine how stakeholder interests should be considered when developing or implementing a policy, programme or project. The first step in conducting a stakeholder analysis is to define the purpose, then identify the potential users of the information and devise a plan for using that information. It is used to identify:

- the interests of all stakeholders who could be affected by, or could affect the innovation process or project;
- potential conflicts between stakeholders;
- opportunities and relationships that can be built on to aid success;
- stakeholders who should be involved in different stages of the planning and activity cycle and strategies for engaging them; and
- ways to improve plans and reduce potential negative impacts.

Incremental improvement of local practices and technologies is a cornerstone in innovation systems.

How-to: methodology and exercises

A draft curriculum for Module 4, Structural analysis, is presented in Annex 1. Trainers can use this to prepare a detailed training programme adapted to the context and objectives of the training course.

Suggested duration: 2 hours and 30 minutes.

Two presentations are proposed for this module:

> **Introduction to Step 2: Analysis of underlying causes.** Why are the AIS functions working well, or why not? This presentation will discuss the underlying causes behind the performance of various AIS functions, considering the combined effects of structure, capacities, and the enabling environment. The presentation connects the functional analysis in Module 3 with the analyses that will be done in Modules 4, 5 and 6. The presentation can be followed by a plenary discussion. Using the results of the functional analysis, pick one or two functions and discuss the enabling and hindering factors behind their performance. Make lists.

> **Introduction to structural analysis, including stakeholder analysis and network analysis.** The presentation will cover the theoretical background of structural analysis and introduce a set of tools that can be used to analyse structural aspects of innovation systems.

Exercises

Three exercises are proposed in Module 4.

Three activities of the structural analysis might be:

1. identifying stakeholders and their roles in the innovation system by function (using results of the functional analysis);
2. creating a network map, by function; and
3. conducting a deeper stakeholder analysis (optional, if time allows).

1. Identifying stakeholders and their roles

Using the results from the functional analysis in Module 3, the trainees will identify the stakeholders that carry out a particular function in the innovation system. These are listed and their specific role identified (Table 3). The information will be further processed in the NetMap exercise and the stakeholder analysis.

> Preparations: Results of the functional analysis in Module 3 should be made available to the trainees.

> Group work: Form one group per function. If there are many participants, let two groups work on the same function.

> Focusing on one function: List the stakeholders involved and indicate the specific role of each towards that function using Table 4.

Table 4. **Analysis of stakeholders and their role**

Function	Stakeholder	Specific role in providing the function

Source: Authors' own elaboration.

2. Creating a NetMap

For this training, we propose to use the pen-and-paper NetMap tool to actively engage trainees. To create a NetMap of all the actors performing a particular function, follow these steps:

- The names of organizations are clearly marked on the map.
- Relationships among organizations are drawn up, using arrows and lines.
- The connecting lines can explain the nature of the interaction by varying their colour and thickness. Use thick lines to highlight strong connections and relationships or use different colours to indicate the weight (or importance) of the connection. Small arrows can be added to the lines for information on the direction and flow.
- Discuss the structural constraints and challenges emerging from the NetMap analysis.

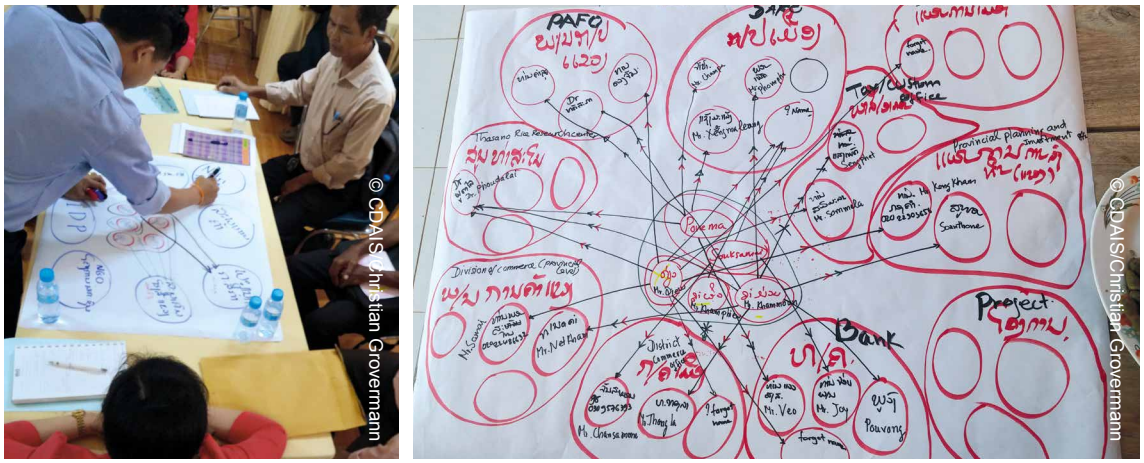
In a real situation, the NetMap created might be validated with participants at a following event or workshop to further analyse relationships, identify organizations that play a central role and assess strong, weak or missing relationships among organizations (Figure 9).

3. Stakeholder analysis

Three basic steps are proposed to conduct a stakeholder analysis:

1. Identify the main stakeholders and their role in the various functions of the innovation system.
2. Assess the level of power or influence and their interests.
3. Sort, rank or score stakeholders and identify how they can be engaged over time.

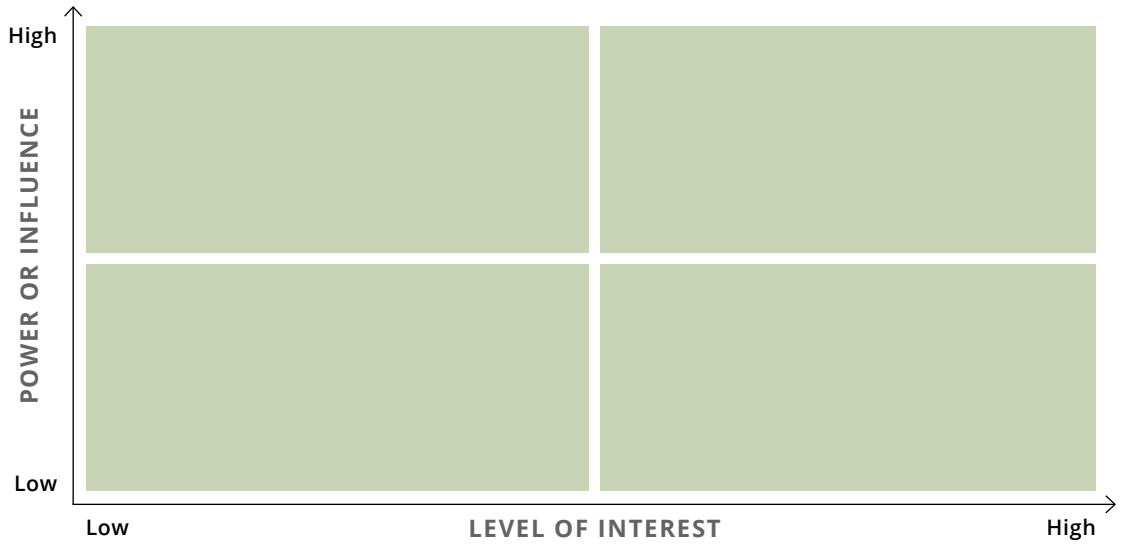
Figure 9. **A NetMap session as part of the CDAIS project's capacity assessment workshop in Savannakhet, Lao People's Democratic Republic**



To assess stakeholder power and interests, groups can use the results of the stakeholder identification and construct a power-interest matrix to categorize stakeholders.

- Place each stakeholder in the relevant box of the matrix according to their power and interest in the action (use Figure 10).
- In the plenary, each group presents their results.
- Facilitate discussion around the following questions.
  - How do the power dynamics and interests of stakeholders influence the performance of a function?
  - What are the possible entry points for engaging with stakeholders, depending on their different levels of power and interests? For example, for stakeholders with high interest and high power, a good strategy would be to actively engage them in the innovation process. Those actors that have high interest but low power could be kept informed, while stakeholders with high power but a low level of interest could be kept satisfied. Those with both low interest and low power might be only monitored.

Figure 10. **The power-interest matrix**



Source: **Mendelow, A.** 1991. *Stakeholder mapping*. Proceedings of the 2nd International Conference on Information Systems, Plenum Publishers, Cambridge, MA.

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Further resources

Online network analysis software is available at:

Graph Commons. 2022. Map networks, together. In: *Graph Commons.* New York. Cited 13 October 2022. graphcommons.com/

Kumo. 2022. Make sense of your messy world. In: *Kumo Inc.* Los Gatos, CA. Cited 13 October 2022. kumu.io/

Module 5

Capacity analysis

OBJECTIVES

- Become familiar with capacity assessment approaches and tools.
- Conduct a capacity assessment at the levels of innovation networks, organizations and agricultural innovation systems.
- Combine capacity analysis with structural and functional analysis to draw conclusions on how to strengthen a national AIS.

KEY LEARNING POINTS

In this module the trainee will learn about:

- key domains of capacities for AIS;
- the different types of capacity assessments (e.g. capacity gap assessment, capacity need assessment and capacity development assessment);
- how to conduct a capacity assessment as a process rather than a one-time exercise;
- how to unpack and score capacities at different levels (organization, network, system); and
- how to use capacity assessment results for identifying entry points and interventions for strengthening AIS.

Module introduction

A capacity assessment is a structured approach to analysing the abilities of individuals, organizations, and networks to manage their affairs successfully. It aims at providing a picture of an agricultural innovation system's capacity in terms of strengths, weaknesses and opportunities. Capacity analysis is one dimension for assessing underlying causes of AIS performance (Figure 7).

Before embarking on a capacity assessment exercise, decide which stakeholders will be involved, why they should be involved and at which step of the overall AIS assessment process. Capacity assessment is a process rather than a one-time or stand-alone exercise.

- It contributes to raising awareness of the capacities needed to make AIS work in practice, hence triggering demand for capacity development.
- It promotes ownership and inclusiveness by engaging actors in the design of capacity development interventions.
- It harnesses local knowledge critical for understanding complex systems and the dynamics behind innovation.
- It helps bring champions on board since some participants in the capacity assessment process will play key roles in moving the capacity development process forward.
- When done in the context of monitoring and evaluating innovation interventions, programmes, strategies or policies, it helps re-purpose capacity development activities and provides a baseline against which to measure progress.

A capacity assessment kick-starts or accelerates a process of capacity development and should be seen as an investment in the future.

Core capacities needed for making AIS perform successfully are both technical and function at three main levels, i.e. innovation network, organization and system levels:

- **Capacities of innovation networks** cover the functional and technical capacities needed to undertake joint innovation initiatives in multi-actor settings. Technical capacities relate to the ability to mobilize new technologies and technical resources for innovation. Functional capacities include areas such as collaboration, managerial, implementation, partnering, and advocacy capacity.
- **Capacities of organizations** embrace the collective ability of an organization's members to achieve its goals. In agriculture, this includes the capacities of central and decentralized government agencies and ministries, agricultural research centres, education and training institutes, extension and advisory agencies, enterprises, cooperatives, consumer groups, producer associations, community-based organizations, and NGOs. Organization capacity encompasses areas such as the capacity to organize, deliver, relate and adapt.

> **System capacities** are the overall capacities to govern a national AIS and foster the needed changes in its structures and functions in response to societal needs. This concerns the AIS actors with a mandate or willingness to catalyse system processes (research and education actors, farms and firms, bridging organizations, innovation support service providers, civil society, policymakers). It includes areas such as visioning, policy implementation, advocacy, on-demand support service delivery, networking, and marketing capacity.

Why assess capacities for AIS?

A capacity assessment analyses desired capacities against existing capacities, which generates an understanding of capacity assets and needs. Such information can serve as input for formulating a capacity development response that addresses those capacities that could be strengthened and optimizes existing capacities that are already strong and performing well.

An assessment can also trigger capacity demand, as the analysis of capacity gaps against the existing capacity generates insights into missing capacities needed to successfully strengthen an AIS. It can also set a baseline for continuous monitoring and evaluation of progress against indicators and help create a solid foundation for long-term planning, implementation and sustainable results (Table 5).

Table 5. **Three types of capacity assessment**

Type of assessment	Guiding question	Purpose
Capacity Gap Assessment	Why is this organization, network or system not performing well?	> To raise awareness on needed capacities to achieve specific activities, projects, programmes, interventions or expected changes. > To raise awareness of available capacities. > To raise awareness on missing or weak capacities. > To explain the underlying causes of unsuccessful innovation networks or systems.
Capacity Needs Assessment	Which capacities should be developed to perform better?	> To identify the capacity needs perceived by the actors involved. > To harness local knowledge to better understand the complex systems and dynamics behind an innovation challenge. > To engage actors in the design of capacity interventions. > To design on-demand capacity development interventions.
Capacity development assessment	To what extent have capacities been developed?	> To evaluate the efficiency of a project or intervention in terms of capacity development outcomes. > To track progress in different capacity domains. > To support monitoring and strategic thinking over project or programme implementation and adapt and improve activities.

Source: Authors' own elaboration.

When to assess capacities

Capacity assessments can be conducted at different steps of an AIS assessment (Table 6).

- in Step 1 in connection with the functional analysis (innovation network capacities in case studies);
- in Step 2 in support of the analysis of underlying causes of weak functions (organization capacities); and
- in Step 3 in support of a consolidated analysis at a system level (system capacities).

Capacity assessment results serve as the basis for Step 4 (supporting the formulation of final recommendations for strengthening the overall national AIS).

Table 6. **Capacity assessment at different steps of an AIS assessment**

AIS assessment process	Capacity assessments and possible guiding questions
Step 1: Functional analysis	Capacity gap assessment in innovation case studies. > Why has an innovation case been successful? Which technical and functional capacities were enabling? How were these capacities developed? > Why has an innovation case not been successful? Which technical and functional capacities were constraining? Which capacities are needed? How to develop them?
Step 2: Analysis of underlying causes	Capacity gaps and needs assessment of stakeholders. > How did an innovation network successfully deliver expected functions? Which individual and organization capacities were enabling? How were these capacities developed? > Why has an innovation network not delivered expected functions? Which individual and organization capacities were constraining? Which capacities are needed? How to develop them?
Step 3: Consolidated analysis	Capacity gaps and needs assessments of organizations with a mandate or willingness to catalyse system innovation processes. > How was the system enabling innovators? Which systemic capacities were enabling? How were these capacities developed? > How was the system not enabling innovators? Which systemic capacities were constraining? How to develop them?

Source: Authors' own elaboration.

Approaches and tools to unpack and score capacities

Capacities are the ability of individuals or organizations to successfully achieve their objectives. For an assessment, functional and technical capacities are unpacked in capacity domains. For instance, the functional capacity of innovation networks can be divided into five domains: (i) capacity to collaborate, (ii) capacity to manage an innovation agenda, (iii) capacity to implement and deliver, (iv) capacity to engage with new partners, and (v) capacity to advocate.

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Both technical and functional capacities need strengthening in agricultural innovation systems.

A list of easily scored indicators is proposed to generate an overall appraisal of the capacity domain being assessed (Table 7). These are scored on a rating scale from 0 to 2 for a rapid appraisal, or from 0 to 5 for more in-depth assessments. We recommend using an online survey tool such as SurveyMonkey or KoBoToolbox for implementing questionnaires as these platforms facilitate data collection, data analysis and reporting.

Table 7. **Examples of indicators and scores for assessing capacity domains**

Capacity domains	Indicators	Scores
Collaboration capacity	> Acknowledge leadership and coordination mechanisms > Create awareness of the complementarity of individual skills > Have mechanisms in place to easily share new information relevant to the partnership	Rapid appraisal: 0: no / none 1: partly 2: fully More in-depth assessment: 0: no /none /never 1: very little / rarely / not really 2: partially / sometimes 3: mainly / sufficiently 4: very much / fully / with limited success 5: very much / fully / with great success
Implementation capacity	> Develop an experiment protocol > Be creative > Have a scientific culture > Agree jointly on how to evaluate the results	

Source: Authors' own elaboration.

How-to: methodology and exercises

A detailed, indicative curriculum for Module 5 is presented in Annex 1. Trainers can use this to fine-tune a training programme according to the context and course objectives. Depending on the context and conditions of the assessment (time, budget, available human resources and skills), the AIS assessment team should decide when and how to conduct capacity assessments within Steps 1, 2 and 3.

Two training sessions are proposed for capacity assessments at Steps 1 and 2. See Module 7 for a capacity gap assessment at system level at Step 3. Each lasts three hours and comprises two introductory presentations (1 hour and 30 minutes) and an exercise (1 hour and 30 minutes).

Two presentations are proposed for this module:

- **Introduction to capacity assessment:** This presentation will cover questions such as:
  - Why and when to assess capacity in the AIS assessment process? How does capacity analysis complement functional, structural and enabling environment analyses?
  - Which types of capacities should we look into?
  - Capacity for what and for whom?

  This presentation also includes a plenary discussion and brainstorming session. Pick one innovation case study and discuss the functional and technical capacities of individuals and organizations.
- **A presentation on methods and tools for capacity assessment** to introduce trainees to the different types of capacities, ways of unpacking and scoring them, various steps in the analysis and ways to generate and discuss results with AIS stakeholders. It also includes a plenary discussion and brainstorming. Pick one capacity and discuss the indicators that could be used and approaches to scoring qualitative assessments.

Exercises

Exercise 1. Conducting capacity assessments to support functional analysis

This exercise teaches trainees to conduct a capacity assessment of an innovation community developing an initiative in Step 1. It is conducted as a role play in which the trainees design and implement a capacity assessment questionnaire to use when conducting an innovation case study.

Approximate time: 1 hour and 30 minutes.

- Pick one innovation case study (from Module 3) and summarize it in plenary.
- In plenary, discuss and select guiding questions for conducting the capacity gap assessment of the innovation network involved (see examples in Box 2) then select a list of capacities to assess.

- Organize groups (four to eight people per group) and assign one or two capacities to each group.
- Each group reflects on a list of indicators for assessing the selected list of capacities. Three to four indicators (or questions) for each capacity are recommended. Examples are given in Box 3.
- Each group tests the questionnaire. Group members select a respondent profile (farmers, researchers, extension workers, government staff, etc.). A facilitator is designated to conduct the questionnaire with his/her group members. Each group member responds to the questionnaire based on their assigned role.
- The group analyses the data and discusses the results and how they facilitate reflection on capacity gaps and needs.
- Back in plenary: Each group shares their insights, the challenges they faced and their solutions to conducting the analysis.
- Group work again: Each group reflects on the results of the assessment and prepares a narrative on the strengths and weaknesses of the AIS functions.

Box 2. Example guiding questions for case study analysis: Capacity for what? Capacity for whom?

- **Which technical and functional capacities of the innovation network enabled the successful achievement of the innovation initiative?**
- **Whose capacities?**
- **How did these capacities contribute to the innovation initiative?**
- **How were these capacities developed?**

Or:

- **Which technical and functional capacities were lacking to advance, accelerate or achieve the innovation initiative?**
- **What were the capacity gaps in implementing the initiative?**
- **How to address capacity gaps for successful implementation of the initiative?**
- **Based on lessons learned from the case studies, which actions or changes are desired at system level to address common capacity gaps across innovation cases?**

Source: Authors' own elaboration.

Box 3. Example questionnaire for capacity assessment for innovation networks (case study in Step 1)

Capacity domains	Indicators (open questions)
Technical capacities	> How did technical capacities enable the innovation initiative? > Were the technical capacities constraining the initiative? In what aspects? > What specific actions are needed to improve the situation?
Functional capacities:	
Collaboration capacity refers to capacity to engage in multistakeholder innovation process.	> How did collaboration capacity enable the innovation initiative? > Was the collaboration capacity constraining for the innovation initiative? In what respects? > What specific actions are needed to improve the situation?
Managerial capacity refers to capacity to develop and manage an innovation agenda.	> How did managerial capacity enable the innovation initiative? > Was managerial capacity constraining the initiative? In what respects? > What specific actions are needed to improve the situation?
Implementation capacity refers to the capacity to experiment, mobilize resources, learn, adapt and deliver in a timely manner.	> How did implementation capacity enable the innovation initiative? > Was implementation capacity constraining the initiative? In what respects? > What specific actions are needed to improve the situation?
Partnering capacity refers to capacity to expand and adapt the innovation partnership to project needs and objectives.	> How did partnering capacity enable the innovation initiative? > Was partnering capacity constraining the initiative? In what respects? > What specific actions are needed to improve the situation?
Advocacy capacity refers to capacity to influence the environment of the innovation project or programme.	> How did advocacy capacity enable the innovation initiative? > Was advocacy capacity constraining the initiative? In what respects? > What specific actions are needed to improve the situation?

Source: Authors' own elaboration.

Exercise 2. Conducting capacity assessments to support the analysis of underlying causes of weak functions

This exercise teaches trainees to conduct an organizational capacity assessment when undertaking a network analysis and to prepare a narrative on the underlying causes of weak AIS functions in Step 2.

Approximate time: 1 hour and 30 min.

> Pick one network of organizations performing an AIS function and summarize it in a plenary (see Module 3).

- In the plenary, discuss and select guiding questions for conducting the capacity assessment (see examples in Box 3); select the key organizations in the network and a list of organization capacities to assess.
- Break into groups of four or five. Assign each group one organization to assess. Ask each group to conduct a strengths, weaknesses, opportunities and threats exercise (SWOT) for the organizational capacity assessment. See Box 4 for examples of questions for the SWOT exercise if trainees are not familiar with this tool.
- Back in plenary: Each group shares their insights, the challenges they faced, and solutions for conducting an organization capacity analysis.
- Group work again: Each group reflects on the results of the organization capacity assessment and prepares a narrative on the strengths and weaknesses of the AIS functions.

Box 4. Example of guiding questions for network analysis: Capacity for what? Capacity for whom?

- **Why did a network perform well?**
- **Which organizations played crucial roles and what were their enabling capacities?**
- **How did these capacities contribute to supporting innovation initiatives?**
- **How were these capacities developed?**

Or:

- **Why did the network not perform well?**
- **What were the pivotal organizations, their strengths, weaknesses, opportunities and threats?**
- **Which organizations should develop their capacities? What capacities?**
- **How to address these capacity needs to improve network performance?**

Source: Authors' own elaboration.

Box 5. Example of questions for conducting a SWOT analysis for assessing organization capacities

Strengths

- **What does the organization do best in contributing to network activities?**
- **What unique knowledge, attitudes and practices does it have?**
- **What advantages does it have?**
- **What do other organizations say about how well it performs?**
- **What resources does it have?**
- **To what extent are its vision and mandate aligned to the innovation strategy or project?**
- **What were its most useful contributions to network activities?**

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Weaknesses

- Which capacities could be improved? To do what?
- What knowledge, attitudes or practices is the organization lacking?
- What disadvantages does it have?
- What do other network organizations say about what it does or does not do well?
- What do innovation end-users say about what it does or does not do well?
- In what areas does the organization need more knowledge, skills and training?
- What complaints have network partners voiced about its services or activities?

Opportunities

- How can the organization turn its existing capacities into opportunities?
- How can it turn its capacity gaps into opportunities?
- Are there needs in the network that no one is meeting?
- How could the organization add value to the innovation network?
- How can it take advantage of network failures, weaknesses and needs?
- Who could we support? How could we support them?

Threats

- What obstacles does the organization face before it can make better contributions to the network?
- Who or what might cause problems? How?
- Are there any changes to standards, policies or legislation that might negatively affect the organization?
- Is the organization competing with others to provide innovation support services?
- Are there changes in its area of activity or in technology that could threaten its success?

Source: Authors' own elaboration.

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Module 6

Enabling environment analysis

OBJECTIVES

- Gain familiarity with the main elements of the AIS enabling environment.
- Learn to conduct a rapid analysis of the AIS enabling environment.
- Understand how the enabling environment affects the performance of an AIS.

KEY LEARNING POINTS

In this module the trainee will learn about:

- the various dimensions of the enabling environment such as policy, legal and regulatory frameworks, governance, infrastructure, investments and institutional and cultural aspects;
- methods for conducting an analysis of the enabling environment related to key functions in the innovation system;
- using a matrix to organize existing information on hindering and enabling factors versus the various dimensions of the enabling environment;
- identifying needs and methods for additional analysis to fill information gaps, 'dig deeper' and triangulate data; and
- preparing a report on how the enabling environment affects the performance of the AIS.

Module introduction

The enabling environment influences all actors and processes in the AIS. Therefore, all steps in the assessment are likely to provide insights into both enabling and hindering factors in the external environment. For example, the way innovation actors collaborate may depend on policy incentives, culture and tradition. The enabling environment analysis will organise this information in a structured manner, but will also 'dig deeper' and seek additional information. This will provide evidence on how the enabling environment influences the innovation process and the actors and becomes the basis for well-grounded recommendations on how the enabling environment could better support innovation. Enabling environment analysis is one dimension for assessing underlying causes of AIS performance (Figure 7).

The enabling environment provides the context in which individuals and organizations operate but do not directly control. It provides 'the rules of the game' for those involved in an innovation process, whether in research, advisory services, business, small and medium enterprises or small-scale farming. The enabling environment comprises both tangible and intangible aspects, including:

- agricultural and innovation policies, and the policies of related sectors such as trade and finance. The way these policies are implemented also matters;
- the legal and regulatory framework that affects the innovation process and the value chains for agricultural products;
- governance of systems and processes;
- infrastructure of various kinds, including roads, irrigation, mobile networks, storage facilities and research infrastructure;
- investments that facilitate the actions of individuals and organizations involved in innovation processes; and
- institutional and cultural aspects, including values and beliefs that guide people's behaviour.

Improving the enabling environment for agricultural innovation is in the interests of any country. A country's policymakers put in place visions, policies and strategies to strengthen and stimulate innovation activities in the agriculture and food systems. Understanding how this enabling environment actually supports or hinders innovation processes, from local to national levels, is important. This provides feedback – evidence – that policy- and decision-makers need to further strengthen the innovation system. The study of the enabling environment is, therefore, a central part of an AIS assessment.

The analysis of the enabling environment has close links with the functional analysis of case studies (Module 3) and the structural and capacity analyses (Modules 4 and 5) as they all seek to understand underlying causes for the performance of an AIS. For example, a focus group discussion or a workshop during the structural and capacity analysis is likely to reveal enabling and hindering aspects in the enabling environment. Building on existing information is, therefore, a practical starting point for the enabling environment analysis, which may involve these three steps:

1. organise and reflect on existing information about the enabling environment;
2. conduct additional analysis to fill in gaps, dig deeper and triangulate data; and
3. prepare a synthesis report on the enabling environment analysis.

Organise and reflect on existing information about the enabling environment

At this stage of the assessment, a lot of information about the enabling environment is already available. This includes information from preparatory activities such as a scoping study or workshop reports, and information collected by the AIS assessment team during the functional analysis of case studies and structural and capacity analyses.

It is practical to begin the analysis by reviewing and organizing the existing information on enabling and hindering factors. The conceptual diagram of an AIS (Figure 1) includes these dimensions:

- agricultural, rural, and innovation policies;
- legal and regulatory frameworks;
- governance;
- infrastructure and investments; and
- institutional and cultural aspects (e.g. norms, mindsets, behaviours, attitudes).

A practical method for analysing existing information is to construct a matrix on enabling and hindering factors versus the main dimensions of the enabling environment. Further analysis may reveal information gaps and needs for data collection (Table 8).

Table 8. **Matrix for analysing information on the enabling environment**

Dimension of enabling environment	Enabling factors	Hindering factors	Information gaps/ needs for further study
Agricultural and innovation policies			
Legal and regulatory framework			
Governance			
Infrastructure			
Investments			
Institutional and cultural aspects			

Source: Authors' own elaboration.

Conduct additional analysis to fill in gaps, dig deeper, and triangulate data

To complement the review of existing information in Table 5, an AIS assessment team would carry out additional data collection and analysis to gain deeper insights into the dimensions of the enabling environment and to triangulate their findings. A range of options is available, depending on needs, priorities, time, and resources available. The assessment team may, for example, consider:

- a review of agriculture and innovation policies;
- a historic overview (e.g. timeline) of milestones in the country's AIS;
- consultations with innovation actors on cultural aspects of innovation;
- specific studies or reviews related to identified information gaps;
- key informant interviews; and
- multistakeholder workshops in which participatory tools such as focus group discussions, problem trees, and SWOT analysis are used.

Analysis of the enabling environment provides evidence used for policy dialogue.

Prepare a synthesis report on the enabling environment analysis

The findings of the enabling environment analysis are written up in a synthesis report to facilitate the consolidated systems analysis (see Module 7). The work is likely to have resulted in a lot of information on the enabling environment, some of which is related to a specific case study, while other information may be valid for the country's AIS in general. Some may be about local issues while other information may have national relevance. A well-structured report will greatly support the steps that follow. The report will:

- describe the main challenges and constraints to AIS performance in a structured and comprehensive manner;
- indicate the importance, urgency and possible impacts of the problems encountered. This helps set priorities for action; and
- indicate opportunities and entry points for improving AIS performance.

The report will be used in Steps 3 and 4 of the assessment, where the overall AIS is analysed and actions to improve it across all dimensions are developed.

How-to: methodology and exercises

A draft curriculum for Module 6, Enabling environment analysis, is presented in Annex 1. Trainers can use this to prepare a detailed training programme according to the context and objectives of the training course.

Suggested duration: 2 hours and 30 minutes.

Two short presentations are proposed for this module:

- A presentation on the dimensions of the enabling environment in AIS (policy, legal and regulatory frameworks, governance, infrastructure, investments, and institutional and cultural aspects.) This aims to familiarize trainees with the concept and scope of 'enabling environment' which is much broader than just policy. The presentation is followed by a plenary exercise (see Exercise 1).
- A presentation on methods and tools for enabling environment analysis, which aims to introduce trainees to the steps of the analysis and link it to other parts of the AIS assessment.

Exercises

1. Exercise on enabling and hindering factors in the external environment of an AIS

- This is a quick exercise that can be conducted in the plenary.
- The aim is to get trainees to start thinking about the dimensions of the enabling environment and how this might support or hinder an innovation process.
- Using coloured cards, each participant writes down enabling and hindering factors in the external environment of an AIS (one point per card). Write multiple cards if needed.
- The trainer organizes the cards on a board or wall, keeping similar ideas together in a cluster, and also keeping the enabling and hindering factors separate.
- The trainer leads a discussion on the results. Which dimensions of an enabling environment are covered? Are any important dimensions missing or poorly handled?

2. Organise and reflect on existing information about the enabling environment

- Group work with four to five people per group.
- Preparations: Results of earlier exercises on functional analysis (Module 3), structural analysis (Module 4) and capacity analysis (Module 5) should be available to all participants.
- To keep the exercise focused and within the allotted time, each group can work on one function.
- Analyse the data and information from Modules 3, 4 and 5 and extract all the factors in the external environment that enable or hinder the innovation process.
- Organize this information according to the dimensions of the enabling environment using the matrix in Table 5.
- Check that the descriptions are sufficiently detailed for the reader to understand the issue well.
- For each dimension of the enabling environment, consider any information gaps you may have encountered and where additional study or data collection may be needed for a more complete understanding of the issue.
- In the plenary, each group presents its results, followed by a general discussion. What are the common findings across functions of the AIS? What issues are unique to a function?
- What are the most important information gaps in the analysis of the enabling environment, and how to address them?
- Document the results as these will be used in the next Module.

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Module 7

Consolidated analysis of agricultural innovation systems

OBJECTIVES

- Learn to analyse challenges and constraints in the national AIS across all aspects of the AIS assessment.
- Learn to prioritize the challenges and constraints in the national AIS in the light of national priorities and broader context.
- Use the capacity gap analysis tool to assess national capacities for improving the AIS.

KEY LEARNING POINTS

In this module the trainee will learn:

- how to review and organize the challenges and constraints in a national AIS as an intermediate step towards recommendations and action plans;
- use the effort-impact matrix tool to set priorities among problems that constrain the AIS;
- identify opportunities and entry points for improvement of a national AIS; and
- assess the country's capacity at the systems level to strengthen an AIS.

Module introduction

Consolidated analysis

The consolidated analysis is a process designed to guide recommendations and action plans that will strengthen capacities for agricultural innovation (Figure 11). It is largely an office task for the assessment team. Results of the functional, structural, capacity and environmental analyses are brought together and reviewed at the systems level to identify major challenges and constraints to the AIS. Priorities for acting on challenges and constraints are assessed and entry points for AIS improvement are identified.

At this stage, a wide range of challenges and constraints to agricultural innovation in the national AIS will have been identified from the various studies. These need to be further reviewed and organized into clusters as a step towards the final results of the assessment. Descriptions of the problems may also need to be edited for clarity. Interactions and dependencies among challenges and constraints need to be considered for a more comprehensive understanding of the issues. Organizing and presenting these findings in a practical, pedagogic fashion will also aid communication with stakeholders. The evidence thus presented will justify the recommendations and suggested actions.

Figure 11. **Consolidated analysis**

STEP 3 | **CONSOLIDATED ANALYSIS**

What are the major challenges and constraints to address in the system?

a. Grouping the problems

- Reviewing and organizing the identified challenges and constraints in the national AIS
- Considering their importance and urgency in the light of national priorities and context

b. Capacity gap analysis

- Assess systemic capacities for addressing problems, developing AIS governance and conducting changes in the AIS

OUTPUTS

- Evidence regarding challenges and opportunities for strengthening AIS
- Priorities and entry points for AIS improvement
- Information on systemic capacities needed for strengthening the AIS

Source: Authors' own elaboration.

The consolidated analysis will also consider national priorities and the broader context of the agrifood sector to align results and recommendations with other national processes. Priority setting will be needed as many issues are likely to have been identified in the assessment. Reflection on the effort required to address a particular issue and its potential impact can guide priority setting and increase the likelihood that recommendations will be acted upon.

During the assessment, the team will also observe opportunities and entry points for improving the national AIS by addressing priority challenges and constraints. There may be 'low-hanging fruit' that could be harvested for quick gains. Other problems may take longer to solve. Either way, opportunities and entry points should be presented, as they are the foundation of the recommendations and action plan to be developed in Module 8.

Favourable aspects of the innovation system encountered in the study should also be highlighted. Success stories can be inspirational in tackling other areas of the AIS and there may be potential for further improvements, which should also be captured in recommendations and action plans.

The consolidated analysis involves these steps:

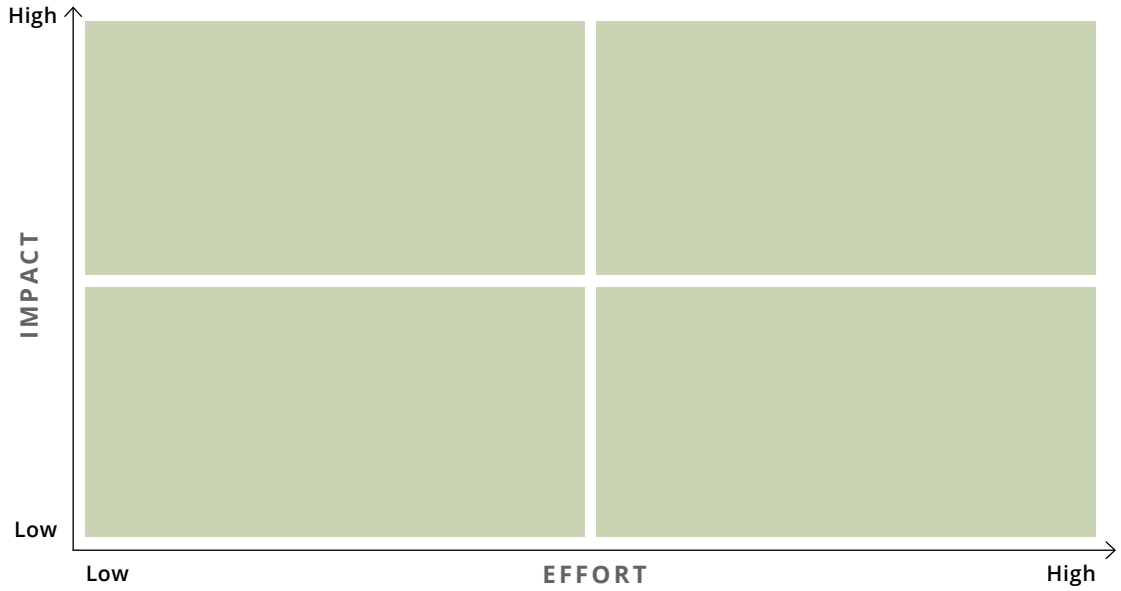
- Cluster all the challenges and constraints encountered in functional, structural, capacity, and enabling environment analyses.
- Review and revise the problem descriptions in each cluster, checking that they are clearly expressed and easy to understand. The audience will need sufficient background on the problems and their causes to understand them well and plan for acting on them. A few words will usually not be sufficient and the trainer should describe the challenges and constraints in detail.
- Identify hierarchies and dependencies among and between the challenges and constraints, which will help address their solution at the right level.
- As many problems are likely to be identified at this stage of the assessment, priority setting will be required. The effort-impact matrix tool (Figure 12) can be used to help set priorities.
- Be sure to present positive findings as well. These can inspire and there may be opportunities for further improvements to what already works well.
- Present possible opportunities and entry points for solving problems. These will be further evaluated in Module 8.

The consolidated analysis presents the main findings of the assessment as an intermediate step towards the final recommendations and action plan, including:

- main constraints and challenges in the AIS described;
- priorities among a range of constraints and challenges in the light of the broader national context and based on the expected effort and impact of an intervention; and
- opportunities and suitable entry points identified for strengthening the AIS.

These main findings of the assessment should be logically formulated and backed up by evidence from the study. These results will later be presented to key stakeholders, typically in a validation workshop.

Figure 12. **The effort-impact matrix**



Source: **ASQExcellence.** 2022. Impact effort matrix. In: *American Society for Quality.* Milwaukee, WI. Cited 13 October 2022. asq.org/quality-resources/impact-effort-matrix

Capacity gap analysis

A country's ability to address the priority constraints and challenges in their AIS depends on its general capacities for improving innovation systems, which therefore need to be considered when making recommendations. A capacity gap analysis can provide insights into system capacities at the national level (see also capacity analysis, Module 5).

A macro-level capacity gap analysis assumes that a set of capacity domains at the systems level is needed to achieve changes in the AIS (Figure 13), and that information on those domains can be obtained from key informants. For a representative result, the capacity gap analysis should involve 15 to 30 key informants, typically in fairly senior positions. A data collection tool, prepared in Excel, can be administered by email or during an interview or workshop.

For the domain 'deliver innovation support services' three kinds are suggested:

a. support to multi-actor innovation partnerships;

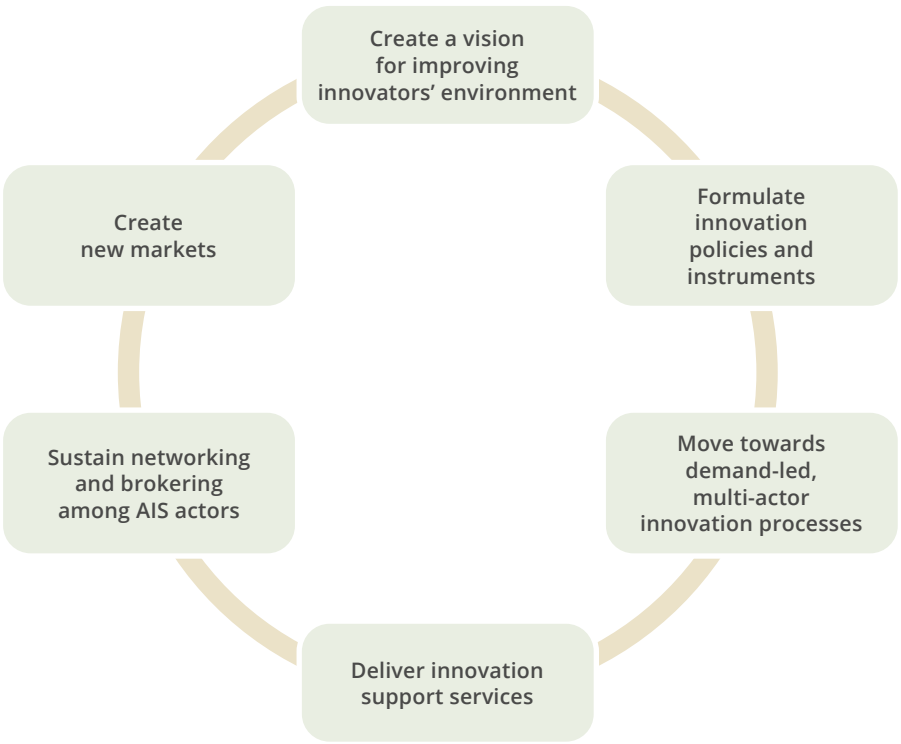
b. support to innovative entrepreneurship; and

c. support to technology transfer.

Each domain is scored on three criteria:

> actors' knowledge and skills (e.g. Do actors have adequate knowledge and skills?);

Figure 13. **Six systemic capacity domains for supporting innovation at national level**



Source: Authors' own elaboration.

- actors putting knowledge and skills into practice (e.g. Do they actually apply their knowledge and skills?); and
- actors' continuous learning and improvement of their knowledge, skills and practices (e.g. Do they keep learning and upgrading their knowledge and skills?).

For each criterion, a 5-point scale is used. The resulting average scores can be presented in graphics using Excel's Chart tools on the Insert ribbon. The results are shared with AIS stakeholders, preferably in a workshop setting or small focus group, to reflect on:

- Why are some capacities weaker than others?
- Which capacity domains are a priority to strengthen? To achieve what change?
- What specific capacity development interventions are needed?

A report on the capacity gaps analysis is prepared, including visuals. This report and accompanying PowerPoint slides are used in validation workshops to discuss the status of the capacity of the AIS and what changes are desired. The results will inform the recommendations and action plan from the AIS assessment, which needs to be tailored to the country's capacity.

How to do it: methodology and exercises

A draft curriculum for Module 7. Consolidated analysis, is presented in Annex 1, which the trainer may use to prepare the detailed training programme according to the specific context and objectives of the training course.

Suggested duration: 2 hours and 50 minutes.

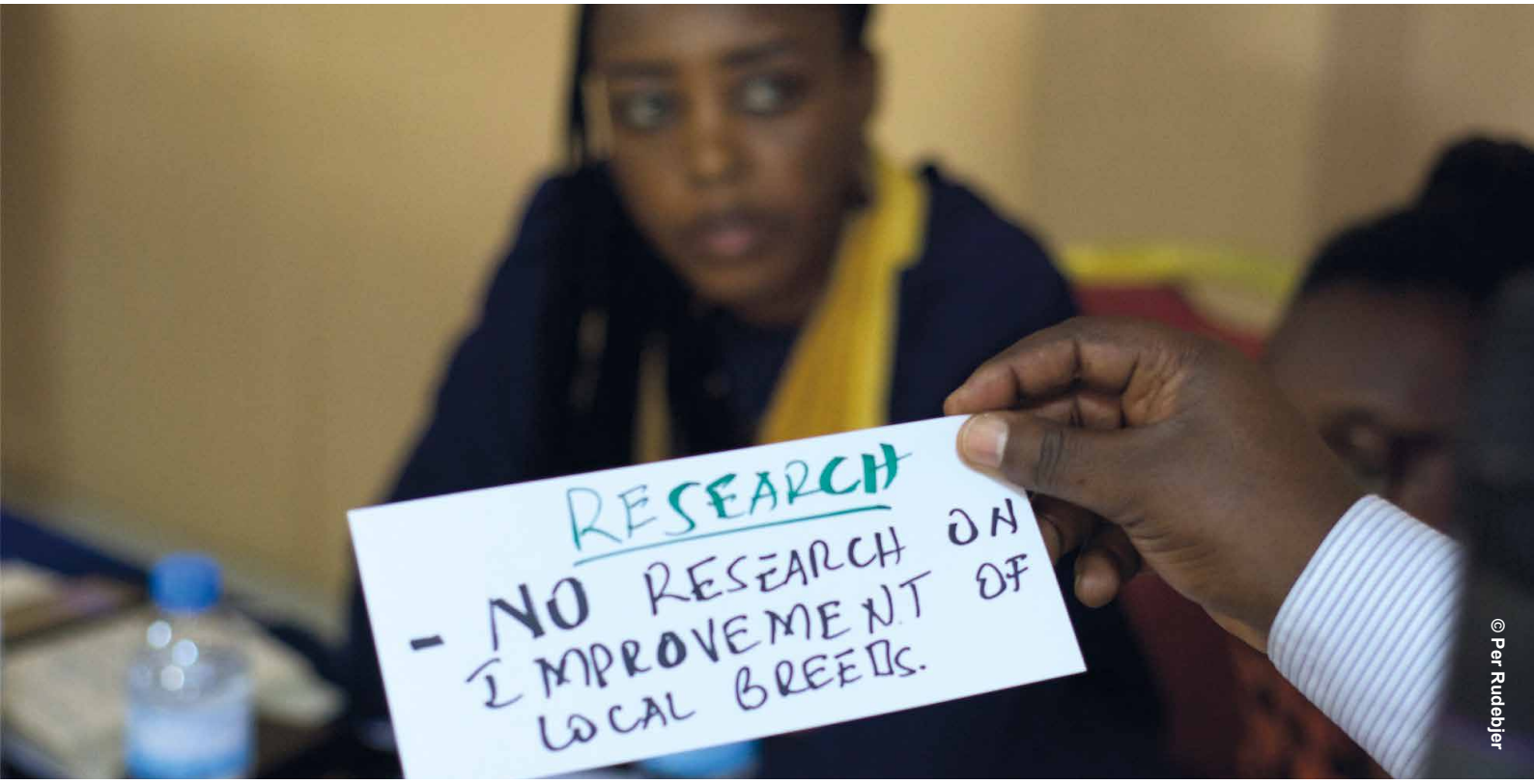
This module would include two presentations:

- **An introduction to the consolidated analysis of assessment results** – Step 3 of the AIS assessment framework. The presentation would clarify how the consolidated analysis builds on the analyses conducted in Step 2, and why the consolidated analysis is a critical intermediate step towards well-grounded recommendations and action plans to strengthen the AIS. The various approaches for consolidating and analysing the information will be prepared.
- **A presentation on the capacity gap analysis tool**, for assessing capacities to strengthen innovation at the systems level (refer also to Module 5).

Exercises

1. Clustering challenges and constraints from AIS assessment results

- Preparations: Earlier results from Module 3 (functional analysis), Module 4 (structural analysis), Module 5 (capacity analysis), and Module 6 (enabling environment analysis) should be available to trainees.
- Working in groups, review the challenges and constraints encountered in all these analyses, building clusters of similar issues as you go.
- Working on cards posted on a wall or flipchart is a good approach as you can move cards around as the exercise progresses.
- Keep going until all challenges and constraints from all the analyses have been covered.
- Review the cards and the clusters until all members of the group agree. Re-write cluster descriptions as needed to ensure that the challenges and constraints are clearly expressed and easy to understand.
- If a cluster is too broad or too general, it may be difficult to make a compelling, action-oriented recommendation about it. In such cases, the problem may need to be broken down into smaller, more manageable pieces.
- Also, check any dependencies and hierarchies among clusters. Such relations are useful when deciding on actions to take.
- Take a photo of the final result!



Participatory assessment of constraints to innovation provides feedback from stakeholders.

2. Priority setting and using the effort-impact matrix

- Exercise 1 is likely to have resulted in many challenges and constraints in the AIS. As resources are limited, priority setting will have to ensure that the most important problems are addressed.
- An effort-impact matrix is a simple tool for setting priorities among the challenges and constraints identified.
- For each challenge and constraint, consider two questions: What effort is required to solve the problem? What is the potential impact if the problem is solved? Then place them accordingly in the matrix.
- Discuss what each square in the matrix means in terms of priority setting.

3. Adapting the capacity gap analysis tool (optional)

- The capacity gap analysis tool proposes six domains.
- In the plenary, review the domain descriptions to ensure they are well understood in the country setting.
- Modify domain descriptions as needed.
- Prepare the data collection tool using Excel.

Module 8

Developing an agenda for action to strengthen AIS

OBJECTIVES

- Prepare evidence-based recommendations on strengthening the national AIS.
- Develop capacity to lead the preparation of a detailed action plan on strengthening the AIS.
- Validate the recommendations and an agenda for action in collaboration with stakeholders.

KEY LEARNING POINTS

In this module the trainee will learn about:

- analysis of options for addressing priority problems and capacity gaps;
- preparation of recommendations for strengthening the agricultural innovation system;
- developing a detailed action agenda;
- validating recommendations and an agenda with stakeholders; and
- communication strategies for sharing results.

Module introduction

Agenda for action

This final step of an AIS assessment identifies solutions to the problems encountered (Step 4. Developing an agenda for action, Figure 14). It aims to match problems and needs with specific capacity development interventions and policy initiatives. Different options for addressing each problem in the innovation system are analysed to find effective and efficient solutions: matching problems and solutions, in other words. Solutions to problems must be realistic and consider the financial and other resources required and the capacities needed to carry them out. The time needed to achieve results will also be considered. Is short- medium- or long-term effort required to have the intended impact?

The AIS assessment team will revisit the consolidated, prioritized list of constraints and challenges in the system (see Module 7). Practical options for addressing these problems are identified and evaluated, starting with the entry points for improvements identified earlier. New options for addressing a particular problem may emerge. Different options for solving a problem may need to be considered in light of the required effort and potential impact given the available resources.

Figure 14. **Developing an agenda for action**

STEP 4 | **DEVELOPING AN AGENDA FOR ACTION**

What action to take to strengthen the AIS?

a. Matching problems and solutions

- Analysis of priority problems and capacity gaps against options for addressing them

b. Developing an agenda for action

- Consolidate evidence-based information
- Validation of agenda for action with key stakeholders
- Agenda for policy dialogue process and organizational capacity development

OUTPUTS

- Awareness of AIS challenges at policy level and among key stakeholders
- Recommendations and action plans for strengthening AIS (by government, development projects, research, private sector actors, etc.)

Source: Authors' own elaboration.

This will lead to:

- Recommendations on conditions or capacities that need to change to strengthen the AIS. Recommendations may address different levels of the AIS from local to national, and different kinds of organizations and actors involved (e.g. value chain actors, organizations providing support services, and decision and policymakers).
- An action plan on how to achieve each recommended change. Once the overall approach to addressing a problem is agreed on, actions are identified and planned with a sufficient level of detail (Table 9).

Table 9. **Sample structure for an action plan**

Objective	Action required	Responsible organizations	Resources needed	Timescale	Outcome/ measurable result

Source: Authors' own elaboration.

The recommendations and action plan thus developed are presented to and refined with stakeholders at a validation workshop (see next section) to produce an agreed roadmap and action plan for strengthening the AIS.

A range of factors may influence the country's ability to act on the recommendations (e.g. resources, capacities, political will). These need to be carefully considered while developing the agenda for action. An unrealistic 'wish-list' is unlikely to be implemented. Recommendations that are too broad or too general are difficult to act on. Too many recommendations may be counter-productive. Eight to ten may be good indicative numbers.

Finally, promoting and communicating the recommendations and action plan from the AIS assessment is important. This should be well planned and executed and should involve the organization's communications professionals. You should aim to produce a full report of the AIS assessment, a summary of the report for a broader audience, and social media outreach materials.

Innovation regarding processes or ways of organization could be as important as technical innovation. This requires functional capacities or 'soft skills'.

Validation workshop

The validation workshop is a milestone in the AIS assessment as it will raise awareness of AIS challenges at the policy level and among stakeholders. This is when recommendations and the proposed action plan are presented to a broad range of stakeholders for the first time, policymakers included. Their feedback will improve the recommendations and refine the action plan, and ensure that the actions are realistic and aligned with broader policies and strategies and with other initiatives. Organizations that need to take specific actions are also identified along with the resources needed.

A successful validation workshop requires careful planning and preparation. The presence of high-level officials will give visibility to the event and they need to be identified and contacted early. The list of participants needs to be prepared well ahead of the event, and include a good representation of stakeholders from different kinds of organizations, including the private sector, farmers and community-based organizations.

Good facilitation of sessions to validate recommendations and action plans is critical to success. Consider engaging a professional facilitator.

Various media outlets (local radio, TV stations, newspapers, trade magazines and bloggers) are likely to be interested in the event and should be invited. Prepare a press kit containing a press release, main messages from the AIS assessment, photos, success stories, one or more one-page fact sheets, and a list of contacts.

How-to: methodology and exercises

A draft curriculum for Module 8. Developing an agenda for action to strengthen AIS, is presented in Annex 1. Trainers can use this to prepare a detailed training programme according to the context and objectives of the training course.

Suggested duration: 2 hours and 30 minutes.

The module contains one presentation:

- Introduction to Step 4. Developing an agenda for action. The presentation covers the final step of the AIS assessment which addresses the main question: What action to take to strengthen the national AIS? It covers the workflow from a priority problem (identified in Module 7) to the final recommendations and a realistic action plan. It also introduces the exercises for Module 8.

Exercises

Exercises for Module 8

1. Formulating effective recommendations and action plan

- Preparations: Results of the consolidated analysis in Module 7 should be available to all participants.
- Work in groups: Each group focuses on one priority problem identified in Module 7.
- Consider different options for how to solve a particular problem, considering both technical, capacity, and policy aspects at different levels of the AIS. Compare at least two realistic options for approaches, resource requirements, level of ambition and expected results.
- Formulate a clear recommendation concerning the desired changes and progress to be achieved beyond the current state.
- Develop a detailed action plan on how to achieve the recommendation. The plan must be realistic and sufficiently detailed (see Table 9 above).

2. Validation of recommendations and action plans

- In the plenary, each group presents its recommendations and drafts an action plan for solving the problem.
- Other groups will validate the results and provide feedback (both positive and critical).

- Aspects to consider in the validation may include:
  - Are recommendations clearly stated? if not, now could they be improved?
  - Is the action plan realistic and achievable in the medium term? Will the proposed action contribute to solving the problem?
  - Does the action plan adequately cover different dimensions of the innovation system (e.g. technical, capacity, and policy-related aspects)?
  - Do the organizations identified have the capacity to implement the action?
- Proceed with the next group presentation and validation and repeat until all groups have presented and received feedback.
- The trainer/facilitator then leads a final discussion on:
  - Preparation of recommendations and an effective, realistic action plan: experiences from the group work process.
  - How to communicate results of the AIS assessment effectively.
  - Possible challenges regarding implementing recommendations and action plans, and mitigation measures.

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FAO. 2013. *Assessment of current capacities and needs for capacity development in agricultural innovation systems in low-income tropical countries.* Rome. fao.org/3/a-bc466e.pdf

Tropical Agriculture Platform. 2016. *Common framework on capacity development for agricultural innovation systems: Guidance note on operationalization.* CAB International, Wallingford, UK. cabi.org/Uploads/CABI/about-us/4.8.5-other-business-policies-and-strategies/tap-guidance-note.pdf

Annexes

Annex 1
Draft curriculum

This draft curriculum covers eight modules of two and a half to three hours each. The final, detailed curriculum will be developed by the course organizers based on the national context and specific course objectives. The course can be over three or four consecutive days or be spread out over a longer period.

Practical tips:

- Connect the training to reality by selecting a few case studies of interesting innovation processes in the country (three is a good number). These case studies will then be used in several modules, progressively developing trainees' understanding of the innovation processes, how these are influenced by the overall agricultural innovation system, and how this could be assessed.
- The case studies should be well known to trainees. They can be selected by the participants as an initial activity to get people thinking about the innovation processes, or they can be selected by the trainers/facilitators beforehand. Preferably, the case studies should represent different kinds of agricultural innovation processes (e.g. innovation related to products and innovations regarding processes and ways of organization).
- Results of the exercises in each module should be kept on file for re-use in the course. The outputs of one exercise in one module will be the inputs for another exercise in a later module. The trainer needs to ensure this record keeping is up to date and well managed.

Module 1
Introduction to agricultural innovation systems and their assessment

Duration in minutes	Content	Notes on implementation
20	Opening session Course introduction: objectives and programme	> The presence of high-level officials may be desirable
30	Participant's introduction	> Consider an interactive exercise. One model is for pairs to talk for five minutes and then present the other person in plenary. > One question to ask: What's your involvement in agricultural innovation? This would help participants start reflecting on their own experiences related to the topics the course will cover.
20	Introduction to agricultural innovation systems (AIS) presentation + Q&A	> Presentation to introduce the conceptual diagram of an AIS (from the Tropical Agriculture Platform's Common Framework on Capacity Development for AIS > Basic concepts and definitions
30	Quick mapping of the country's agricultural innovation system (group exercise)	> In groups, use the conceptual diagram of AIS to map the main actors and processes in your country's AIS: > Research and education > Business and enterprise > Bridging institutions > Enabling environment > Note: Keep the results of group work to be revisited in later modules.
20	Mapping the AIS: Presentation and discussion	> Presentation of group work > Reflection on key drivers of innovation including science & technology, culture, macroeconomics, policy, etc.
20	Agricultural innovation systems versus technology transfer approach (plenary discussion)	> Discuss how AIS and a conventional technology transfer approach differ. Make lists covering various dimensions and stages of an innovation process.
30	Discussion: What to assess in AIS?	> Use results of previous exercises and reflect, individually or in groups, on what you need to assess to better understand an AIS. > Write ideas on cards. > The trainer then clusters the cards and leads a discussion on assessing AIS.
	End of Module 1	

Module 2
FAO framework for assessing AIS

Duration in minutes	Content	Notes on implementation
10	Recap and reflection on Module 1	> Two or three participants are asked in advance to share take-home messages from Module 1.
30	Why assess AIS? Exercise and plenary discussion	> In plenary or in groups, discuss the questions: Why assess the country's AIS? What benefits are there? Added value? Risks and challenges?
30	Three phases of an AIS assessment Presentation and group discussion	> Presentation on the phases of an AIS assessment cycle that will inform policy and decision-making. > Discuss in groups of 2 to 3: How could better data and information help improve your country's AIS?
30	The FAO framework for assessing AIS: Introduction Presentation and plenary discussion	> Introduction to the four steps of an AIS assessment: Key activities and expected outputs in each step. > Discussion and clarification of key points as needed.
50	Using the results of an AIS assessment in the national context Group exercise and plenary presentation	> In groups, discuss how information and evidence from an AIS assessment may be used in your country. Consider how to communicate effectively with an audience: > Group 1: Influence policymaking and policy dialogue > Group 2: Guide and strengthen capacity development efforts > Group 3: Inform and advocate for investments or changes in the AIS
	End of Module 2	

Module 3
Functional analysis: how does agricultural innovation actually happen?

Duration in minutes	Content	Notes on implementation
10	Recap and reflection on Module 2	> Two or three participants are asked in advance to share their take-home messages from Module 2.
30	Introduction to AIS assessment Step 1. How does agricultural innovation actually happen? > Introduction to functions of AIS > Using case studies to understand the innovation process 'on the ground'	> Presentation: Introduction to functional analysis. Selection of case studies. Two options are (i) identified by working groups, and (ii) predetermined by the course facilitators/organisers.
60	Analysing functions to support innovation processes Group exercise	Group exercise: > Select an innovation case study using the criteria described in the Module. > Identify how the innovation actually happened. > List and group the various functions that supported the innovation and present the results in a table. > Identify and list enabling and hindering factors in this innovation case, considering the various dimensions of an agricultural innovation system (ref. AIS conceptual framework, Module 1).
40	Developing a functional profile of the innovation system Plenary exercise	Plenary exercise: > The facilitator consolidates the results of the functional analysis across all groups in Exercise 1. > Discussion about the preliminary list of consolidated functions. > Refinement and agreement on the functional profile of the national AIS.
40	Analysis of enabling and hindering factors behind the functions of the innovation system	Group exercise: > Groups will analyse each function, listing enabling and hindering factors. > In the next round, groups rotate and add to the analysis of the previous group. > Keep going until all groups have worked on all functions.
	End of Module 3	

Module 4
Structural analysis

Duration in minutes	Content	Notes on implementation
10	Recap and reflection on Module 3	> Two or three participants are asked in advance to share their take-home messages from Module 3.
30	Introduction to Step 2: Analysis of underlying causes. Why are the AIS functions working well, or why not? Presentation and discussion.	> Presentation: Introduction to Step 2 of the AIS assessment, which is exploring underlying causes behind the performance of the AIS and considering the combined effects of structure, capacities, and the enabling environment. > Plenary discussion on enabling and hindering factors.
20	Structural analysis. Presentation	> Presentation: Introduction to structural analysis, including > Stakeholder analysis > Network analysis > Participatory identification of structural/ network problems and weaknesses
60	Network analysis Group exercise	> The exercise uses the results of the functional analysis. > Form small groups of four to six people. Each group selects one function to support innovation. > Identify and list the organizations involved in providing this function and indicate the role they play. > Using network analysis (e.g. on a large flipchart) map how organizations are connected and the purpose or nature of these interactions (e.g. using different colours for different interactions). > Discuss incentives and disincentives for collaboration and networking.
20	Network analysis Plenary presentation and discussion	> Presentation of group work, followed by a discussion on how structural issues may facilitate or hinder innovation and how to improve collaboration in the AIS.
20	Structural analysis wrap up	
	End of Module 4	

Module 5
Capacity analysis

Duration in minutes	Content	Notes on implementation
10	Recap and reflection on Module 4.	> Two or three participants to share their take-home message from Module 4.
30	Introduction to capacity analysis Presentation	> Presentation on capacity development for AIS, covering both technical and functional capacities. > Tropical Agriculture Platform Common Framework model on functional capacities. > Three dimensions of capacity development: individuals, organizations and enabling environment.
30	Presentation on methods and tools for capacity assessment.	> Different types of capacities. > Ways of unpacking and scoring. > Different kinds of capacity assessments. > Ways to generate results and discuss with stakeholders.
90	Capacity to support innovation functions Exercise	> Group work. Use the results of the functional analysis (Module 3) to analyse capacities to support the innovation process by function. > Each group assesses one or two capacities. > Preparation of a questionnaire. > Roleplay to test the questionnaire followed by group analysis and discussion of results. > Plenary presentation of results. > In groups, preparation of narrative on strengths and weakness of the AIS function.
90	Assessing organization capacities Exercise	> Each group assesses one organization, selected from innovation cases (Module 3). > Conduct a SWOT analysis of the organization's capacity. > Plenary: sharing results. > In groups, preparation of a narrative on strengths and weakness of AIS functions.
	End of Module 5	

Module 6
Enabling environment analysis

Duration in minutes	Content	Notes on implementation
10	Recap and reflection on Module 5.	> Two or three participants to share their take-home messages from Module 5.
3	Introduction to enabling environment Presentation and discussion	> Presentation on different dimensions of the enabling environment in AIS. > Plenary exercise on enabling and hindering factors in the external environment of an AIS. Use coloured cards, each participant writes factors that enable or hinder innovation processes (one point per card). > The facilitator organises the cards and leads a discussion on the results.
2	Methods and tools for enabling environment analysis Presentation	> Presentation on a methodology for enabling environment analysis.
40	Organize and reflect on existing information on the enabling environment Exercise	> Group exercise: Organize existing information relevant to the enabling environment using results from exercises in earlier Modules. > Each group works on a specific function. > Use a matrix to map dimensions in the enabling environment versus enabling and hindering factors.

30	Methods and tools for enabling environment analysis
	
	Plenary presentations and discussion
		> Presentation of group work results.
		> Facilitated discussion on:
		  > Information gaps that should be filled for a more comprehensive understanding of the issues.
		  > Options for collecting additional information.
		  > Possible entry points for making the enabling environment more effective in supporting agricultural innovation.

	End of Module 6	

Module 7
Consolidated analysis of the agricultural innovation system

Duration in minutes	Content	Notes on implementation
10	Recap and reflection on Module 6	> Two or three participants to share their take-home messages from Module 6.
30	Introduction to Step 3: Consolidated analysis Presentation, Q&A	> Introduction to the consolidated analysis of assessment results (Step 3 of the AIS assessment framework).
40	Clustering challenges and constraints from AIS assessment results Exercise	> Work in groups to review, consolidate and organise the challenges and constraints in the national AIS using results of earlier exercises in Modules 3–6). > Cluster the information in meaningful sub-categories. > Analyse relationships among and between key issues.
30	Consolidated analysis of AIS: priorities and key messages Exercise	> Working in groups, take the results of the above exercise and use the effort-impact matrix to set priorities in the light of the national context. > Develop a few key messages based on the group's findings.
30	Consolidated analysis of AIS Plenary presentation and discussion	> Presentation of the group exercises. > Compare results across functions and identify issues that are frequent or unique. > Discuss how to address information gaps?.
30	The capacity gap analysis tool: Presentation and discussion	> Presentation on assessing capacities at the systems level to improve conditions for innovation. > Discussion on how such capacities may influence abilities to act on assessment results.
	End of Module 7	

Module 8
Developing an agenda for action to strengthen AIS

Duration in minutes	Content	Notes on implementation
10	Recap and reflection on Module 7	> Two or three participants to share their take-home message from Module 7.
20	Introduction to Step 4. Developing an agenda for action What actions to take to strengthen the national AIS?	> Presentation on how to develop a realistic agenda for action on strengthening the AIS in collaboration with stakeholders
40	Developing recommendations and action plan Exercise	> Each group focus on one priority problem identified in Module 7. > Consider different options for solving the problem. > Formulate a clear recommendation on the changes required to strengthen the AIS. > Develop an agenda for action on the problem.
40	Validating recommendations and action plan Exercise	> Group work presentations. > Other groups are validating the recommendations and action plan, constructively. > Repeat until group results are presented and validated.
20	Final discussion on developing an agenda for action that strengthens the national AIS	> Preparing an agenda for action: experiences from the group work process. > Communicating the roadmap and agenda for action on strengthening the AIS. > Challenges regarding implementation and how to overcome them.
20	Closing session > Course evaluation > Closing remarks	> Evaluation template in Annex 2

Annex 2
Training course evaluation form

Training workshop on assessing agricultural innovation systems

Venue: _____

Dates: _____

Evaluation: _____

Please take a few minutes to respond to the workshop evaluation questions below. Your feedback is valuable to us!

1. How would you rate the achievement of the objectives and overall results of the training workshop?

☐ 1. Very poor ☐ 2. Poor ☐ 3. Fair ☐ 4. Good ☐ 5. Excellent

2. How would you rate the quality and efficiency of the methodologies used at the workshop?

☐ 1. Very poor ☐ 2. Poor ☐ 3. Fair ☐ 4. Good ☐ 5. Excellent

3. What workshop session or aspect was the most valuable or interesting? Why?

_____

_____

_____

4. What workshop session or aspect could be improved?

_____

_____

_____

5. To what extent has the workshop enhanced your capacity to effectively lead or participate in an assessment of national agricultural innovation systems?

☐ 1. No change ☐ 2. To some extent ☐ 3. To a fair extent ☐ 4. To great extent

Comment:

_____

_____

_____

6. What important aspect of an AIS assessment was not discussed at the workshop?

_____

_____

_____

7. How to improve the organization of similar events?

_____

_____

_____

Thank you!

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