TROPICAL AGRICULTURE PLATFORM

CAPACITY FOR CHANGE

Common Framework on Capacity Development for Agricultural Innovation Systems

GUIDANCE NOTE ON OPERATIONALIZATION

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Endorsed by the TAP Global Task Force
Approved by the 3rd TAP Partner Assembly
for use by the CDAIS Project, by TAP Partners and by others

Tropical Agriculture Platform
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Abbreviations used in the text

AIS	Agricultural Innovation System(s)
ARI	Agricultural Research Intensity
ASTI	Agricultural Science and Technology Indicators
CD	Capacity Development
CDO	Capacity Development Outcome(s)
DoC	Driver of Change
M&E	Monitoring and Evaluation
R4D	Research for Development
R&D	Research and Development
RAAIS	Rapid Appraisal of Agricultural Innovation Systems
SWOT	Strengths, Weaknesses, Opportunities and Threats [analysis]
TAP	Tropical Agriculture Platform
ToC	Theory of Change

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Capacity Development for Agricultural Innovation Systems at a Glance

Agricultural innovation is critical for increasing agricultural productivity as well as for sustainability of agricultural systems. Innovation, however, cannot rely solely on spin-offs from foreign research. It requires endogenous capacities to generate, systematize, and adapt knowledge as well as to adopt and up-scale new practices.

An Agricultural Innovation System (AIS) is a network of actors or organizations, and individuals, together with supporting institutions and policies in the agricultural and related sectors, which bring existing or new products, processes, and forms of organization into social and economic use. Policies and institutions (formal and informal) shape the way that these actors interact, generate, share and use knowledge as well as jointly learn.

Capacity Development for Agricultural Innovation Systems (CD for AIS) enables joint learning and co-creation and new uses of knowledge for social change and enhances the interactions between actors. It is also about creating an enabling environment for such interaction, learning and innovation, based not only on conducive formal law and regulations, but also on informal values, attitudes and behaviours. It aims at changing people's behaviour and developing of more sustainable practices that bring about societal transformation.

Principles of CD for AIS

Capacity Development (CD) is necessary to enhance interaction, build trust and create synergy between research institutions and public and private sector actors, smallholder farmers and development organizations to enable them address a whole range of activities, investments and policies and avail of opportunities to make change happen.

- CD for AIS interventions must respond to expressed needs of actors. It cannot be designed and implemented by external actors with a well-defined and standardized set of products and services.
- CD for AIS is an endogenous process and ownership by local actors is paramount to its success; collective energy, motivation and commitment of stakeholders to engage in a process of change are crucial.
- CD for AIS is not politically neutral, it involves questioning and sometimes upsetting the status quo and may lead to conflict; it therefore needs strong, facilitative leadership and commitment.
- CD for AIS is an iterative process rather than a one-off time-bound intervention. Capacity needs of today will change tomorrow based on experience gained in the face of new challenges or emerging opportunities.
- CD for AIS is a multi-dimensional and multi-actor process that goes well beyond the direct transfer of knowledge and skills at the individual level and addresses in an integrated manner organizational and institutional dimensions.
- CD for AIS interventions go beyond improving immediate performance. They develop the capacity to adapt to new and constantly changing environments, to learn and analyse the internal and external context and to relate and build partnerships and pro-actively plan the future.
- CD for AIS is context-specific. No blueprint or one-size-fits-all recipe can be applied.

CD for AIS is built around 4 + 1 specific functional capacities essential for effective AIS and relevant to all three dimensions of CD (individual, organizational and enabling environment). The four fundamental capacities are:

- **Capacity to Navigate Complexity;**
- **Capacity to Collaborate;**
- **Capacity to Reflect and Learn; and**
- **Capacity to Engage in Strategic and Political Processes.**

These four capacities are the basis for an overarching fifth capacity, namely to **Adapt and Respond in order to Realize the Potential of Innovation,** shifting focus from reactive problem solving to co-creating the future.

CHAPTER 1

Background to the Guidance Note

Agricultural development processes increasingly involve complex undertakings that are influenced by the dynamic interaction of environmental and socio-economic factors, such as trade liberalization and demands of global markets, urbanization, climate change, agricultural intensification, concentration and vertical integration of food production and consumption as well as food safety standards and the need to ensure equitable benefits to actors along value-chains (World Bank, 2007; IAASTD, 2009; FAO, 2014). There is general agreement that bringing together multiple actors within and beyond the agricultural sector, taking into consideration their various perspectives and experiences, is key to agricultural innovation to meet these challenges. Many countries, however, are not fully exploiting their potential for innovation to promote agricultural productivity, market competiveness and sustainability. Strengthening the capacity of individuals and organizations as well as that of the enabling environment in which they are embedded is required to actively promote agricultural innovation.

In 2012, the Agriculture Ministers of the G20 called for the creation of the Tropical Agriculture Platform (TAP), a facilitation mechanism with the strategic goal of **strengthening coherence and relevance** of regional and international CD programmes in support of agricultural innovation and contributing to the development of national capacities for agricultural innovation in the tropics. Whilst the aim of TAP is to improve the overall performance of the agricultural system, the focus is particularly on the benefits for small- and medium-scale producers, as well as for small- and medium-scale enterprises in the agribusiness sector.[1]

The TAP Action Plan includes the development of a Common Framework on Capacity Development for Agricultural Innovation systems (CD for AIS) in order to harmonize the diversity of approaches to CD for agricultural innovation of various development actors.[2] The TAP Common Framework should maximize efforts and investments of different donors and technical cooperation agencies, facilitating the coordination among them with regards to CD for AIS.

The Common Framework builds on an in-depth study of the innovation system literature. The conceptual background is presented in the document "Capacity for Change, CD for Agricultural Innovation Systems (CD for AIS), Concepts, Principles and Approach". It highlights the need to not only address the individual and organizational dimensions of CD, but to also explicitly consider the role of the enabling environment. The three dimensions (individual, organizational and the enabling environment) are understood to "influence each other in a fluid way" – the strength of each depending on, and determining the strength of the others" (UNDP 2011). The Common Framework calls for an integrated approach that addresses the inter-related individual, organizational and enabling environment dimensions in order to ensure the success of CD for AIS efforts.

To achieve this integration and to allow for system-wide learning from multiple strands of interventions, a dual pathways approach is proposed. This approach brings together system-level interaction and the implementation of "innovation niches" to address the CD needs of different innovation actors and to ensure system-wide learning. The Common Framework puts forward a cycle of five main

[1] For a full description of the Tropical Agricultural Platform membership, objectives, overall approach and plan of work see http://www.fao.org/in-action/tropical-agriculture-platform/en/

[2] For a full presentation of the approved Action Plan see http://www.fao.org/3/a-bc455e.pdf

stages: galvanizing the commitment of key stakeholders; development of an AIS shared vision by multiple actors within the system; a comprehensive capacity needs assessment; design of a CD strategy and action plan; and, finally, the implementation of the CD strategy. A number of complementary actions cut across the whole CD for AIS cycle, namely facilitation, learning and documentation, as well as monitoring and evaluation.

The present document complements volume 1 of the Common Framework, the conceptual background document, and is divided into two sections. Part one provides a brief recap of the conceptual underpinnings and principles of CD for AIS and presents the integrated approach to system-wide CD and system-wide learning in the individual, organizational and enabling environment dimensions – i.e. the dual pathways approach. Part two provides a more detailed guide to operationalization of the proposed dual pathways approach as well as to monitoring and evaluation. It offers a toolbox of select tools that may be useful at the different stages of the CD for AIS cycle.

This guidance note is regarded as provisional. The dual-pathway approach and the system-wide learning it implies is yet to be piloted and contextualized to the reality of individual countries. Piloting will inform the further development of ways in which a Common Framework on CD for AIS can be operationalized. This guidance note on operationalization of the Common Framework sets out stages in a CD cycle. These should not be regarded as prescriptive. One of the key capacities in CD for AIS is the capacity to adapt and respond to local context, opportunities and challenges. Hence the operationalization of the Common Framework should be approached with flexibility and creativity.

CHAPTER 2

CD for AIS

Concept and Principles

Agricultural innovation is critical for increasing agricultural productivity and output, and for improving farmer incomes to ultimately reduce poverty, as well as ensuring food security and healthy nutrition, competitiveness and sustainability of the agricultural and related sectors. Addressing the complexity and dynamics of agricultural development requires that innovation in agriculture and rural development be based on multi-stakeholder interaction, viewing agriculture from multiple perspectives and disciplines.

2.1 Defining the Agricultural Innovation System

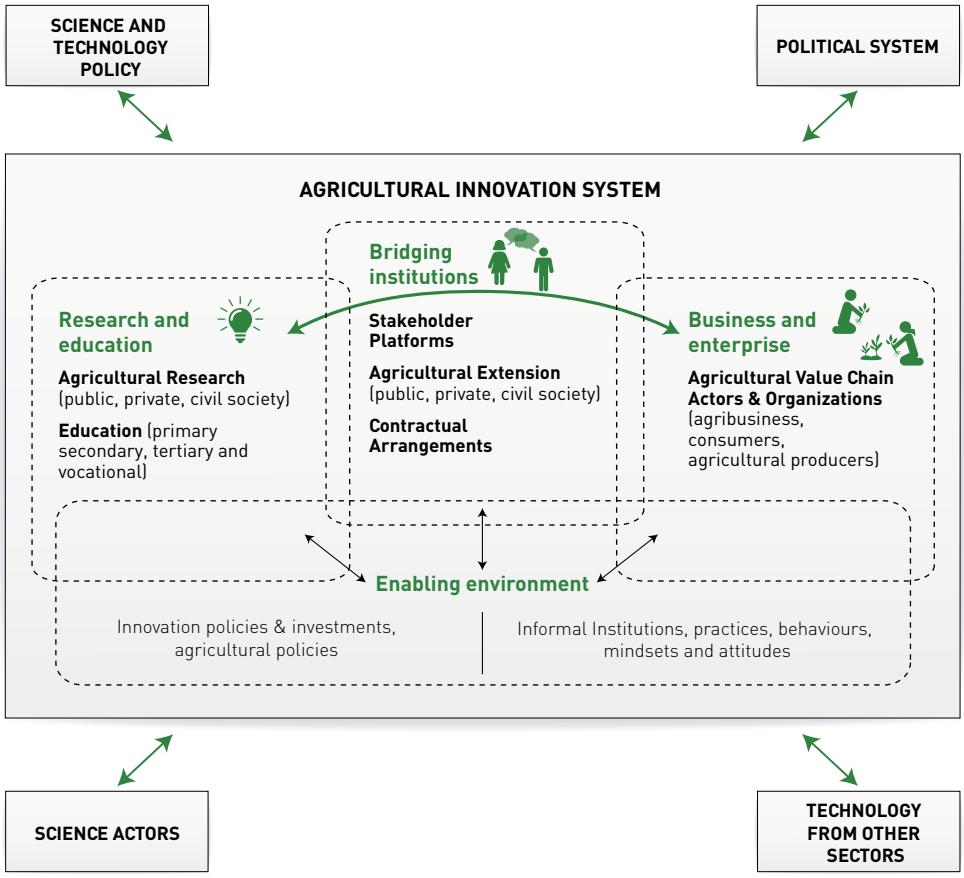
Agricultural innovation is the process whereby individuals or organizations bring existing or new products, processes and forms of organization into social and economic use to increase effectiveness, competitiveness, resilience to shocks or environmental sustainability, thereby contributing to food and nutritional security, economic development and sustainable natural resource management.

It is necessary to emphasize the distinction between **'invention'** and **'innovation'.** Invention is seen as a novel idea that has been given form, such as a diagram, model or technology, and has potential for application. Innovation, in contrast, may take different forms (e.g. a product, a process, a service or new organizational form). It should be useful in a given context and demonstrate practical application at scale. Agricultural innovation covers technological, social, economic, organizational and institutional dimensions of change. 'Institutional dimension' refers to the formal and informal rules, as well as beliefs, values and frameworks for understanding, that create stability and order within the system. This is often referred to as the 'enabling environment'. Agricultural innovation takes place within a dynamic network of actors – individuals and organizations – fostering interaction and learning through adaptation and responsiveness to emerging challenges and opportunities.

An **Agricultural Innovation System (AIS)** is a network of actors – individuals or organizations – which together with supporting institutions and policies in the agricultural and related sectors, bring existing or new products, processes, and forms of organization into social and economic use. Policies and institutions (formal and informal) shape the way that these actors interact, generate, share and use knowledge as well as jointly learn.

The AIS can be divided into four components: research and education; bridging institutions; business and enterprise; and the enabling environment, which encompass all of the various actors (farmers, and farmers' organizations, agribusiness, processors, marketers, transporters, input suppliers, policy-makers, regulatory agencies, researchers, service providers, extension services, civil society organizations and others) involved di-

Figure 2.1 | **Conceptual diagram of an Agricultural Innovation System**



Source: adapted from Aerni *et al.*, 2015

rectly or indirectly in agricultural production, processing, marketing, distribution and trade (see Figure 2.1).

Agricultural innovation requires the conscious provision of space for networking and facilitation of the interaction among the multiple actors in the system. Such multi-stakeholder processes aim at building trust and mutual understanding, stimulating collective learning, and creating the conditions for collective decision-making and action leading to innovation. Strengthening the AIS requires going beyond the production, exchange and use of knowledge created through the interaction of actors. It is needed also to foster: *"entrepreneurship, developing a vision for change, mobilizing resources, building legitimacy for change and overcoming resistance to changes. Additionally, the AIS approach recognizes the influential role of institutions (i.e. laws, regulations, attitudes, habits, practices, incentives, in shaping how actors interact in innovation processes"* (Devaux, Ordinola and Horton, 2011).

BASIC ELEMENTS OF AIS

The concept of AIS is grounded in systems thinking. A system is understood as the interconnections between people, processes and the environment within which they are situated. The system is **dynamic,** continually changing, and changes to one part of the

Box 2.1 | **Mindset shifts promoted by the TAP Common Framework**

CD for AIS implies a shift from:

- considering knowledge generation as a final objective, to using it as a means to achieve change;
- understanding of the parts to systemic understanding of the relationships between the parts;
- using mainly 'hard systems analysis' (improving the mechanics of the system) to including 'soft systems analysis' (negotiating the meaning of the system and desirable transformations);
- seeing participation as a question of consulting beneficiaries to realizing it is about facilitating engagement for interactive learning between stakeholders, resulting in joint analysis, planning, and collective action;
- working individually to working with others, in constantly changing ad-hoc teams and partnerships; and
- teaching to learning; from being taught, to learning how to learn; from individual learning to social learning.

Finally, CD for AIS also means a shift in the culture of research and development (R&D) organizations from an exclusive focus on individual merit and competition to promoting collaboration and teamwork within and between organizations.

Source: ICRA - International Centre for development oriented Research in Agriculture.

system will inevitable change other parts of the system due to the interconnectedness of the parts. The **boundaries** of the system are fluid, and their definition will depend on the perspective of different individuals.

Innovation is complex and a non-linear process, and cannot be attributed to any individual intervention. Innovation emerges out of a myriad of interactions and dynamic relationships, and other influencing factors. It cannot be planned for or predicted in a linear cause-and-effect logic. It implies processes that can engage people on a large scale, possibly involving hundreds of people in multiple, parallel and interlocking processes across a system where issues are interconnected and ensuring system-wide learning (Burns, 2014).

AIS requires effective partnerships based on trust among a broad set of actors beyond those of formal science and development. It thus necessitates coordination and collaboration among a diverse set of actors with the aim of harnessing new ideas and mobilizing resources from both public and private realms (Leeuwis and Van den Ban, 2004; World Bank, 2006; Pant and Hambly Odame, 2010).

The process of creating new ideas draws on both explicit and tacit **knowledge.** Tacit knowledge is personal knowledge embedded in individual experiences and involves intangible factors such as personal belief, perspectives, and value systems, in contrast to explicit or codified knowledge. **All actors are potential sources of knowledge** on topics as diverse as cultural management practices; new agricultural technologies; diagnostic information about plant and animal disease, and soil-related problems; market information on inputs and sales (prices, seller, buyers, retailers); market demand and quality of products required for these markets; and

land records and government policies. Research is no longer the sole driver of the innovation process.

Knowledge management must be sensitive to both 'tacit' and 'explicit' or codified knowledge. It involves bringing together the perspectives of multiple actors – the knowledge of each representing a piece of a complex puzzle – through facilitation of a collective process leading to new social and technical solutions. **Tracking and documenting** the change process is vital to ensuring the collective learning among multiple actors.

AIS involves collaborative learning, the process by which communities, stakeholder groups or societies make sense of reality in order to act more effectively. They learn how to innovate and adapt in response to changing social and environmental conditions. Joint learning is an integral activity to ultimately achieve the desired results. It calls for double-loop and even triple-loop learning questioning underlying assumptions in order to respond adequately in rapidly changing contexts (Ministry of Foreign Affairs of the Netherlands, 2011). Double-loop learning questions the assumptions or policies behind initial expectations (asking the question "Are we doing the right things"?) thus gaining insight into why something does or does not work (Argyris, 1977). Challenging and changing underlying values and assumptions – i.e. triple-loop learning – is required in order to solve complex problems. Triple-loop learning answers the question "How do we decide what is right?" Or "What is the underlying assumption of how change happens?"

Collaborative learning and CD are interdependent, continuous and iterative processes building on the experience of actors, continually offering new insights. Collaborative learning "contributes to a 'learning system' in which people learn from and with one another and, as a result, become more capable of withstanding setbacks, of dealing with insecurity, complexity and risks" (Beers, *et al.,* 2010). Development of a learning architecture with appropriate methodologies is essential to engage multiple actors involved in various interconnected processes. Interaction between these actors leads to changes in attitudes, values and behaviour, i.e. CD. CD for AIS therefore emphasizes a continuous spiral of action, reflection, learning and revision of course requiring skilled facilitation.

Facilitation enhances interaction and relationships of individuals, organizations, and their social, cultural and political structures through a process of network building, social learning and negotiation (Leeuwis and Aarts, 2011). It is vital to enabling the interaction of multiple actors, foster synergy by managing these interactions linking people and resources and enhancing their ability to make collective decisions and to implement them (Pyburn and Woodhill, 2014; Sulaiman *et al.,* 2010).

Specialized and skilled individuals act as systemic intermediaries, facilitators or brokers among multiple, complex relationships (Klerkx *et al.,* 2012).

Facilitation of a complex change process requires orientation in systemic action research, to not only support actors in understanding and changing the systems dynamics and challenging their assumptions, but also to help connect multiple strands of learning processes occurring horizontally and vertically across social systems, organizations and networks. Thus they support the implementation of a learning architecture to assess the significance and importance of what is being learnt (Burns, 2014).

2.2 Defining Capacity Development

The OECD Development Assistance Committee defines **'capacity'** simply as 'the ability of people, organizations and society as a whole

to manage their affairs successfully' (OECD 2006). Capacity can generally be viewed as the ability of individuals, organizations or society as a whole to set and implement development objectives as well as to identify and meet development challenges in a sustainable manner (Land, 2000).

Capacity of individuals refers to the competencies – core knowledge, skills, attitudes and energies – needed to work effectively. Organizations coordinate and use individual competencies in such a way that their collective potential is realized, including providing the space for organizational learning, so as to adapt to changing circumstances, building effective partnerships and taking risks, as well as achieving organizational goals and acquiring and managing the necessary resources. Capacity 'emerges' over time, influenced by multiple factors both internal and external (local, national and international), formal and informal (Watson, 2010). No single factor or constituent element – incentives, leadership, financial support, trained staff, knowledge, or structure – can by itself lead to the development of capacity. A widely accepted definition of **Capacity Development** is that it is the process whereby people, organizations and society as a whole unleash, strengthen, create, adapt and maintain capacity over time (OECD 2006, 2008). The emphasis here is on process rather than one-off, time bound interventions. CD is a multi-dimensional and multi-actor process that goes well beyond the direct transfer of knowledge and skills at the individual level and encompasses organizational and institutional dimensions (Pearson, 2011). Institutional dimensions refer to both formal aspects such as laws, policies, regulations and standards and informal aspects such as cultural values, beliefs, behavioural patterns and mind-sets. These determine, to a large extent, the capacity of individuals and organizations to be effective.[3] The CD process must be an endogenous one, owned by the stakeholders involved if it is to be effective. It cannot be designed and implemented by external actors applying a well-defined and standardized set of products and services (Horton *et al.,* 2003).

Whilst the immediate aim of CD is the improvement of performance of individuals, organizations and of the system so as to be more effective and efficient, CD interventions need to go beyond improving immediate performance[4] and develop the capacity to adapt to new and constantly changing environments, to learn and analyse the internal and external context and to relate and build partnerships. CD, therefore, is not just about delivering results but about facilitating processes to enable stakeholders avail of opportunities, build trust and take joint action, or 'facilitating resourcefulness' (Ministry of Foreign Affairs of the Netherlands, 2011).

2.3 Dimensions of Capacity Development

CD addresses individual, organizational, inter-organizational and system (or the enabling environment) dimensions. These dimensions influence each other in a fluid way – the strength of each depending on, and determining the strength of, the others (UNDP, 2011). Within the context of AIS, it is pertinent to also stress the dimension of partnerships and networks that is crucial in creating that interconnectedness, bringing together individuals and organizations to co-create new knowledge and innovate. This guidance note emphasizes the interdependent relationship between all dimensions to strengthen 'system-wide' capacity.

[3] Capacity is also used to refer to aspects of finance and infrastructure, which are not considered here.

[4] The present framework uses the term "capacity to adapt and respond in order to realize the potential of innovation" in a way similar to "standing capacity". This is discussed in detail below.

Figure 2.2 | **The 3 Dimensions of Capacity Development**

Source: FAO 2010.

The enabling environment provides a conducive incentive structure and political commitment so that organizations and individuals can sustainably improve their own capacity, effectively manage knowledge, learn, as well as coordinate and collaborate and ultimately innovate (Leeuwis *et al.*, 2014).

For the purposes of operationalizing the Common Framework, this guidance note, focuses specifically on the institutional space – "governance, regulatory and policy-making organizational structures" – as an integral part of CD efforts and system-wide learning. The "enabling environment of the agricultural innovation system" is defined as the set of factors that influence agricultural innovation but are controlled by institutional, regulatory and policy domains other than those directly linked to agricultural innovation.

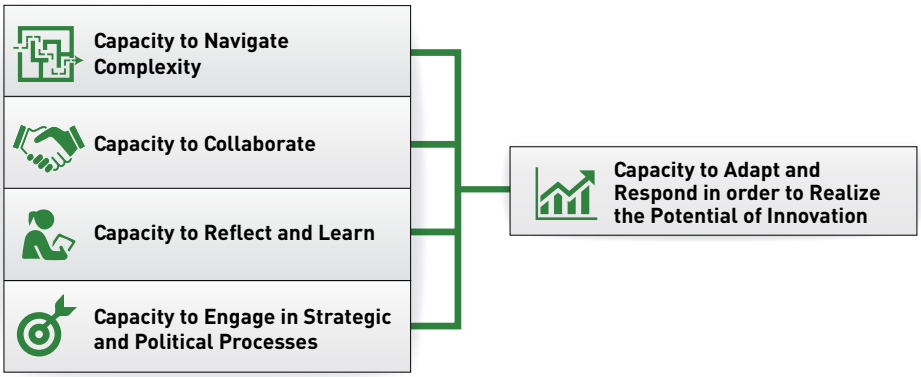
2.4 The Capacity for Change

CD approaches have focused largely on individual and organizational capacities, distinguishing between technical and functional capacities. Both effective functional and technical capacities are essential for individuals and organizations to achieve their set developmental goals. Technical capacity refers to knowledge and skills that are task- or mandate-specific, linked to organizational objectives and goals. Functional capacities are the skills, knowledge, attitudes and behaviour needed to utilize and coordinate technical capacities so that individuals and organizations work effectively. They may include, for instance, strategic planning and programme implementation, ability to formulate and implement relevant policies and norms, capacity to harness and manage knowledge, the ability to build and maintain partnerships, strong leadership, or the ability to navigate the political dimensions of organizations. CD for AIS is partly about functional expertise, but also about system cohesion and energy. CD for AIS must therefore enable the creation of synergy between research institutions and public and private sector actors, small-scale farmers and development organizations, and enable innovation actors to address a whole range of activities, investments and policies that make change happen, while improving the way the different elements work together, take action and ensure iterative learning of the innovation system, continuously revisiting performance and how it is managed. To develop the overall capacity of the agricultural innovation system, with its various actors, incentives, norms, and processes, and to build more effective and dynamic relationships among multiple actors and to 'facilitate resourcefulness', the Common Framework identifies four + one specific functional capacities essential for effective AIS and relevant to all dimensions of CD.[5] The four fundamental capacities are:

- **Capacity to Navigate Complexity** requires a shift in mind-sets, attitudes

[5] These capacities are adapted from four capacities originally put forward by Jim Woodhill for institutional innovation (Woodhill, 2010). The authors also acknowledge the influence of the Five Capabilities framework developed by the ECDPM that has also informed the thinking around capacities for AIS (Baser and Morgan, 2008).

Figure 2.3 | **The 4 + 1 Capacities**



and behaviours to comprehend the larger system and to create an understanding of the whole system, as well as a shift from mainly reductionist understanding of the parts, to systemic understanding of the relationships between the parts, viewing change as an emerging property that cannot be predicted or planned for in a linear fashion.

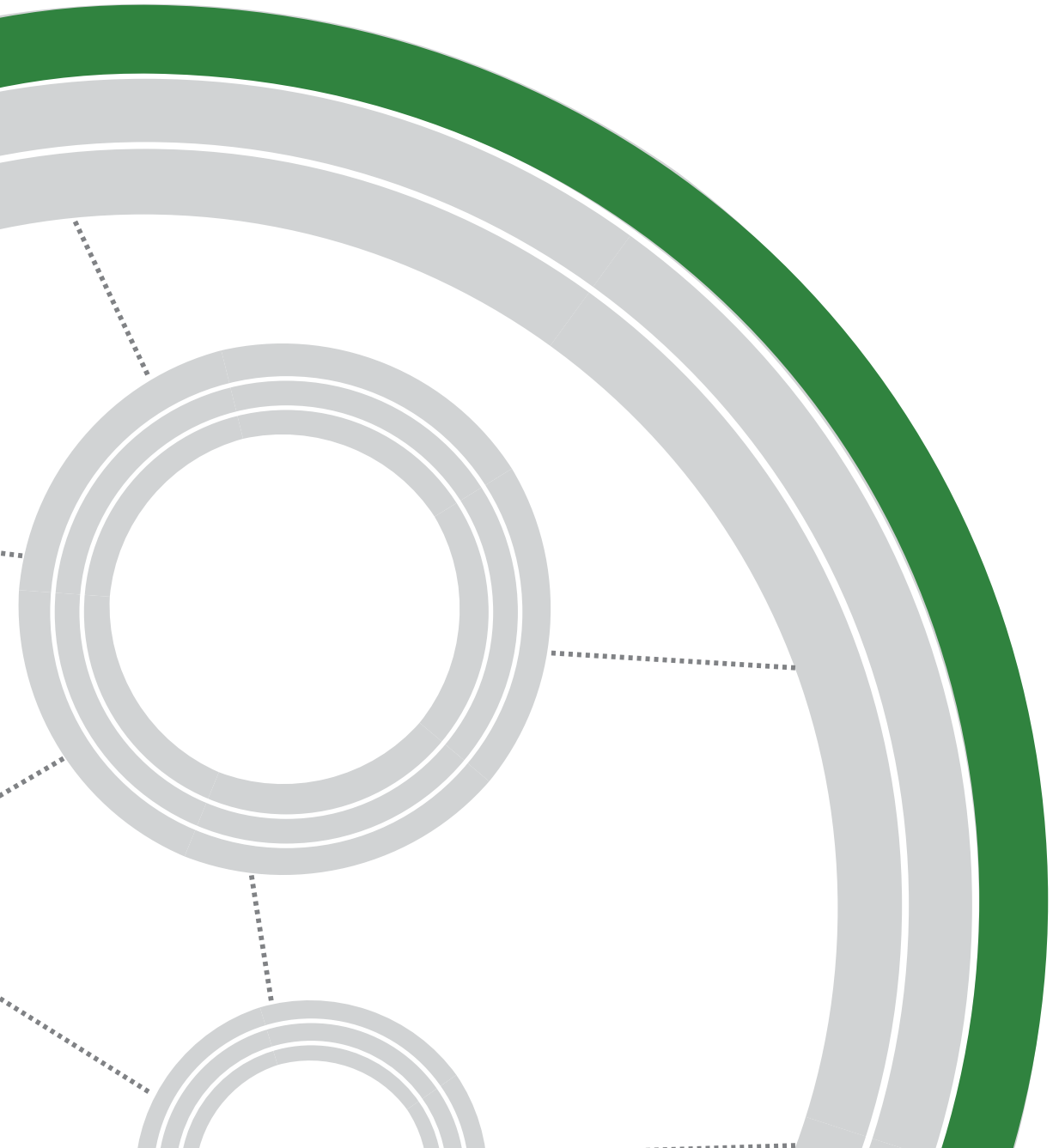
- **Capacity to Collaborate,** enabling actors to understand each other's perspectives, resolving conflicts and diversity in order to combine individual skills and knowledge, and create an awareness of their complementarity; building synergetic partnerships and networks to enhance collaboration. It also involves communication skills and strategies, both internally and externally.
- **Capacity to Reflect and Learn,** bringing stakeholders together, designing and leading processes of critical reflection and following double-loop and triple-loop learning processes, leading to action and change; this requires respect for different opinions and an atmosphere of trust for those opinions to be voiced. It also requires a systematic tracking of processes and progress to enable reflection to take place. Interventions need to be sufficiently flexible and adaptable to changing conditions, with analysis undertaken in an iterative fashion as well as promoting experimentation and risk taking.
- **Capacity to Engage in Strategic and Political Processes.** CD for transformational change is inherently political, and involves questioning the *status quo*. Power relations need to be understood for a number of dimensions, including: economic interests, the balance of power among elites, and civil society-state relations. Understanding and influencing the politics and power relations between individuals, within organizations and in the wider society, is crucial for bringing about new forms of interaction among stakeholders. It includes the conscious empowerment of vulnerable and often marginalized groups.

Figure 2.3 shows that these four capacities form the core of an overarching **Capacity to Adapt and Respond in order to Realize the Potential of Innovation,** shifting focus from reactive problem solving to co-creating the future. This requires facilitative leadership to enable all of the above to happen. The five capacities are interdependent and are relevant for all three dimensions of CD.

CHAPTER 3

Dual Pathways to CD for AIS

An Integrated Approach



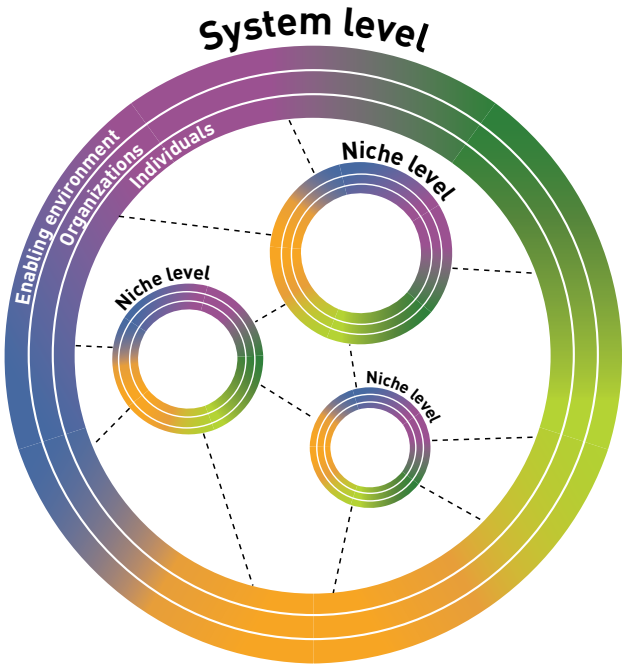
A multi-level, conceptual approach (see Figure 3.1) aimed at developing capacity for effective AIS is proposed here. The approach is based on a view of innovation as a process of interactive development of technology, practices, markets and institutions within a system or networks of actors. Interaction between actors leads to the emergence of new insights, practices, processes or ways of interacting within a dominant production system or commodity value chain.

The conceptual model set out in Figure 3.1 proposes two, interrelated processes at two levels of CD, the:

- **Innovation Niche:** The niche – the locus of learning, experimentation and micro-level transformation – develops innovations that have the potential to seed sustainable transformation. Innovation niches are spaces in which small groups or networks of AIS actors become part of a learning process, through which alternative socio-technical practices can be experimented with and developed in such a way that they subsequently inform and influence mainstream transformation (Hall *et al.*, 2010). Innovation niches allocate time, knowledge, capabilities, and resources to alternative socio-technical practice, from which lessons are generated and disseminated. Such lessons, however, need to be acted upon in networks wherein societal processes (e.g. capital formation, set-up of distribution, dissemination of knowledge, gaining user acceptance) are activated. The innovation niche may be an established or a newly created network of actors. CD takes place around a specific innovation agenda, such as food safety, nutritional security, climate-smart agriculture, curriculum for life-long learning in agriculture and food, farmers' market groups, food processing, or constraints within a value chain, etc.
- **Systems:** At this level, focus is on the functionalities and performance of the system as a whole, without emphasis on any specific actors, or types of changes. The wider system of which the niche is a part consists of the multiple and diverse actors within the boundaries of a defined AIS. Learning from the innovation niche is one input to inform actors at system level in their own interactions to create an enabling environment for AIS. CD at system level recognizes social, cultural and political structures, in which power relations, social and institutional dimensions determine opportunities for different groups of actors to initiate an innovation niche, and to act upon the interventions to attain sustainability.

A purposeful intervention is necessary that, on the one hand, enhances capacities of individuals and organizations (actors or facilitators in the innovation niche), and on the other hand enhances capacities of other social, institutional and political actors to improve the enabling environment. The CD of individuals and organizations will be linked to their involvement within niches or at system level. The conceptual approach takes into consid-

Figure 3.1 | **A conceptual approach to CD for AIS**



eration the development of capacities of different dimensions (individual – organizational – enabling environment), tracking synergies and inter-relationships among these dimensions. Complementary pathways of change enable each dimension and their interaction to be addressed.

Figure 3.1 illustrates how the conventional disconnect between actors and interventions at system and subsystem levels can be overcome. Working through innovation niches as networks of AIS actors, joint learning and innovation at local level is achieved. These niches, and the organizations linked, to them are supported through CD interventions. Similarly, at system level, the CD cycle ensures interaction of actors. Linking the two levels through a learning architecture leading to system-wide learning and strengthening of the AIS. Strengthening of the overarching capacity to adapt and respond to realize the potential of innovation will result in trust building, new networks, and partnerships to create an effective AIS, and thus ultimately improving people's livelihoods. The process is however not a straightforward, linear one, and several enabling conditions (such as individual attitudes, technical competency, biophysical environment, organizational and institutional culture and capacity, as well as policy environment and market conditions) will influence the interaction of individuals within the system and the system as a whole.

3.1 Learning architecture

The multi-level perspectives will provide useful insights into the underlying dimensions

of change. This calls for the development of a learning architecture to bring together the learning from multiple, parallel and interlocking innovation niches across the system, with interconnected issues. This might involve hundreds of people and several dozen organizations and networks (see Burns, 2014).

Within the niche, interaction and iterative learning processes among the interested actors will be put in place. Experimentation allows for risks of failure and for learning at multiple dimensions – technical aspects; market and user preferences; partnerships and networks (e.g. infrastructure, maintenance, production and knowledge); regulations and government policy; societal; and environmental effects. Learning should not only be directed at the accumulation of facts and data (a focus on technical experimentation), but also address change in attitudes and re-visiting assumptions (socio-institutional). An innovation niche gains momentum (opportunities created for wider application) as the process of learning and critical reflection unfolds and new ideas arise.

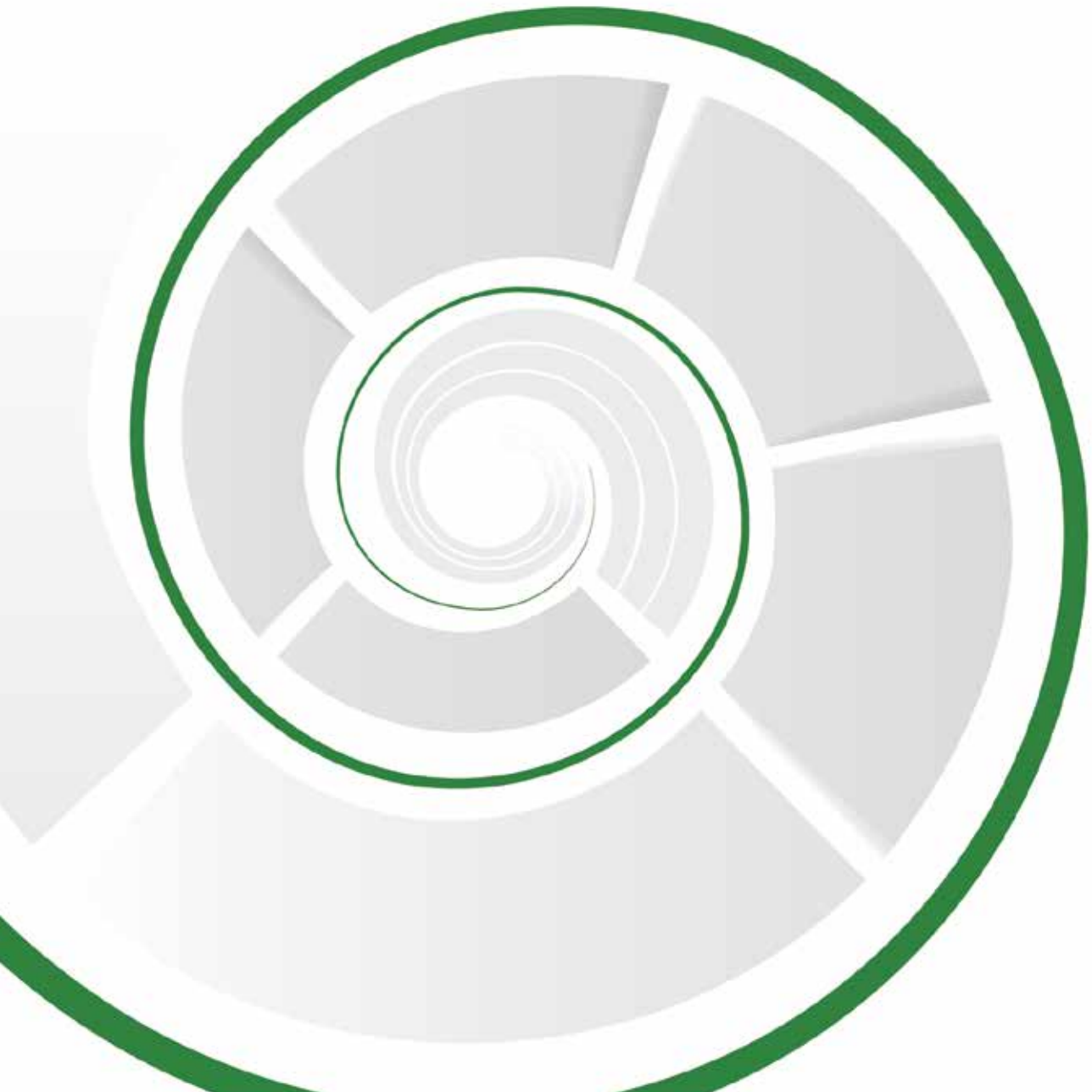
3.2 Outcomes

Whilst strengthening the AIS benefits different actors in the system, it is important to stress that CD for AIS aims ultimately at improving the livelihoods of small-scale producers, as well as small-scale entrepreneurs, to ensure more equitable distribution of the benefits of an improved system.

The conceptual approach identifies two levels of outcomes: short-term, learning outcomes linked to the capacities to adapt and respond. These are issues of immediate changes and may be achieved within a short time. In contrast, long-term outcomes involve changes requiring effective functioning of the AIS for improved livelihoods, which generally require considerable time to take effect. It will be important that the actors themselves identify the expected and desired outcomes at niche and system levels.

CHAPTER 4

CD for AIS
A Guide to Operationalization



In many countries in the tropics, CD for AIS-related initiatives are well underway (such as the promotion of innovation platforms, creation of innovation research institutes or innovation departments within Ministries of Agriculture as well as new curriculum development for agricultural courses). Such initiatives are, however, frequently implemented in a "watering-can" manner with little thought given to the possible synergies among them, or mechanisms for learning and CD across the system. A central challenge to CD for AIS is indeed how it can be employed systemically across the whole research, innovation and development spectrum, changing both mindsets and policies that shape the process (Mbabu and Hall, 2012) and not just be confined to piecemeal "pilot projects" addressing individual components of the whole system. In particular, the underlying assumption that by addressing individual and organizational capacities, the enabling environment (institutional arrangements and policies) will somehow adapt still seems to prevail. Hawkins *et al.* (2009) suggest that not only is the creation of favourable organizational and institutional environments critical for agricultural innovation, it is lack of progress in this regard that is the main reason it remains largely at the level of "pilot projects".

CD for AIS is about enhancing interactions among actors, with creation and new uses of knowledge (i.e. innovation) in order to bring about social change, as well as about institutional development to create an enabling environment for such interaction, learning and innovation. Learning is aimed at changing people's behaviour and the development of more sustainable practices as well as building capacity of actors to bring about societal transformation. Enabling interaction between actors in the agricultural innovation system is therefore core to CD for AIS.

The Capacity to Navigate Complexity; the Capacity to Collaborate; the Capacity to Reflect and Learn; the Capacity to Engage in Strategic and Political Processes; together with the overarching Capacity to Adapt and Respond – all these can be strengthened through upgrading skills, expertise, competencies and confidence of individual actors; improving processes and incentives within organizations, businesses and actor groups to be involved; creating an environment in which actors actively interact, exchange new ideas and expertise, and collaborate (Gildemacher and Wongtschowski, 2015).

Whilst, individuals need to acquire relevant knowledge and skills to develop the capacity to adapt and respond, an organization's ca-

pacity to adapt and respond requires that, on the one hand, it effectively manages the core competencies of individuals, and, on the other hand, relates to external actors. Strengthening the capacity of institutions within the enabling environment involves factors that influence the management of organizations, and in particular the interaction between these organizations and other actors, thus creating the "enabling environment". Table 4.1 outlines competencies, processes and incentives required for each capacity dimension.

The dual pathways approach aims at systemically bridging the research, innovation and development spectrum by addressing all three CD dimensions concurrently. The dual pathways for operationalization of CD for AIS mean that CD processes take place within institutions and organizations as well as within networks of organizations and through individuals in identified "innovation niches" and/or through the organization and network involved in system level coordination and learning.

This guidance note sets out a CD for AIS Cycle that aims to stimulate learning and interaction among these dimensions in order to develop an effective AIS, capable of adapting and responding to new and emerging challenges, with actors proactively co-creating the future. The following section suggests ways of operationalizing a dual pathways approach for CD for AIS, addressing the multiple dimensions of a system in an integrated manner with regard to creating ownership of the process, assessing capacity needs, developing a strategy and implementing action, and achieving system-wide learning.

The CD for AIS Cycle presented in this chapter is put forward as an ideal framework for an integrated approach to CD for AIS. In reality, however, operationalization of the cycle will depend on country-specific dynamics, of individual commitment, opportunities and available resources. It should be kept in mind that, since capacity emerges over time in an unpredictable fashion, involving collective learning, adaptation to numerous factors, opportunities and challenges, it cannot be designed and implemented with a well-defined and standardized set of products and services (Horton *et al.,* 2003). The CD for AIS Cycle and suggested tools should therefore not be seen as prescriptive but rather as a guide for adaptive and creative CD for AIS.

Responsibility for CD for AIS does not "sit" squarely within the mandate of any one single organization or institution. Each actor in the system is called upon to devote effort and resources to ensure capacities are developed within the system, to link with other actors and to reflect on their own role within the wider system (cf. Hawkins *et al.,* 2009). The CD for AIS Cycle could therefore be initiated by any one of these actors with an interest in strengthening the effectiveness of the AIS and promoting system-wide learning. It could be a government initiative based on a recognized need to strengthen agricultural innovation, or it might emerge from a donor or NGO programme supporting a multi-stakeholder approach, wanting to ensure system-wide learning in order to scale up localized success stories. Whilst the impetus for initiation may come from a single source, the success of the dual approach will depend on the commitment of multiple actors. Ownership of the process by local actors is thus critical for its successful implementation.

4.1. The CD for AIS Cycle

A cycle of five stages (see Figure 4.1) of CD interventions at the level of an innovation niche, within organizations and networks (and the individuals within these) and also addressing the enabling environment is proposed here. The five stages are expanded on below. In many ways the stages will be identical for

Table 4.1 | **Operationalizing the Capacity for Change**

Dimension	Capacity			
	Navigate Complexity	**Collaborate**	**Reflect and Learn**	**Engage in Strategic and Political Processes**
Individual	• System thinking. • Multi stakeholder analysis. • Gender & diversity. • Theory of change.	• Team building. • Listening skills. • Conflict resolution. • Leadership skills. • Emotional intelligence. • Participatory methodologies.	• Understanding processes at organisational level. • Experiential learning and documentation e.g. Participatory Action Research, tracking change processes, reflexive monitoring and evaluation.	• Policy analysis and provision of evidence. • Networking. • Negotiation. • Listening.
Organizational	• Strategic Planning. • Facilitative Leadership. • Creation of incentives in response of need to innovation.	• Accept, manage and build on the inherent diversity of the organization. • Create enthusiasm and shared responsibility, ability to catalyse collective leadership in others. • Encourage joint decision-making. • Enable inter-disciplinary exchange and learning Establish teams around specific challenges. • Provide incentives for collaboration, networking and partnerships.	• Encourage dialogue and voice for all. • Encourage honesty and transparency. • Reward creativity. • Document processes and learning on joint actions. • Use participatory M&E processes. • Understand strengths and weakenesses of other organisations.	• Building relationship and partnerships with external actors through linkages, knowledge sharing. • Creation of legitimacy of the organization as an expert in its field. • 'Influencing' others, including the ability to provide evidence and influence policy to inform the enabling policy environment. • Understanding the political and decision making processes. • Dedicating resources (time, budget) to joint activities. • Producing information and use of diverse communication channels (written, audio, video, social media). • Recognizing power asymmetries within the organization and taking specific action to address these. • Work in partnership and networks to support negotiation discourses.
Enabling Environment	• Ability to navigate between different sector policies and create coherence. • Learning from past experiences. • Ability to operate within the inherent complexity and unpredictability of social systems. • Recognizing the inter-connectedness of policies, ability to track and assess the wider effect of policy on society and adapt accordingly in a timely manner. • Willingness to try out a range of interventions, gather evidence on their effectiveness, and scale up those that prove effective.	• Creating mechanisms to bring diverse actors together and facilitation of their interaction. • Creating incentives for multistakeholder interaction and allocation of resources accordingly. • Identifying joint solutions and creation of commitment of actors for its implementation. • Participation of societal actors to ensure empowered citizens. • Regular planning, sharing of information, discussions with multiple actors in the system.	• Capacity to take long term view/ perspective. • Ability to take a holistic view. • Ability to communicate effectively to explain policies and strategies. • Accountability. • M&E systems that capture lessons learnt.	• Capacity for inclusive and transparent political engament. • Consideration of historical and political perspectives (e.g. indigenous, tribal, origin cultivation practices). • Promoting multi-stakeholder processes. • Ensuring mechanisms for collective decision making.

Figure 4.1 | **The CD for AIS Cycle**

FACILITATION
is a continuous process that enables the interaction of actors in the system and strengthens capacities for change

REFLECTION, LEARNING & DOCUMENTATION (RL&D)
happens among the actors in each stage and feeds into the M&E process

MONITORING & EVALUATION (M&E)
aspects need to be considered in each stage in order to effectively track and assess the performance of interventions

each of these three dimensions although the actors involved and the methods used may vary. The five proposed stages are "Galvanizing Commitment", "Visioning", "Capacity needs Assessment", "CD Strategy Development" and "Implementation".

In contrast to a typical project, the CD for AIS Cycle should not be viewed as a one-off, closed process with a clear start and finish. It represents just one cycle in a continuum or spiral of action, reflection, learning, adaptation and implementation of the CD process (Figure 4.2). It requires embedding an iterative process of reflection and documentation of learning throughout the cycle, leading to a further cycles of adaptation and implementation.

Whilst the CD for AIS Cycle is described as a logical sequence of consecutive stages, operationalization of the framework will probably not be a linear process. Depending on the context of the country in which it is being implemented and the extent to which CD for AIS is already being addressed, stages may be merged or addressed simultaneously. For instance, in a given context, actors may consider capacity needs assessment as a composite part of the CD strategy and action plan rather than an input into the strategic planning process; in other cases it may be decided to conduct a capacity needs assessment before embarking on a visioning exercise. Nor are the stages seen as separately bounded actions. For instance galvanizing commitment and visioning might be combined in one stage. It will be a decision to be made by country actors based on available resources (people, time and finances), available documented information, as well as existing programmes and past experience. The country context will also dictate whether the CD for AIS Cycle is initiated only at national level or if regional- and district-level processes need to be initiated concurrently, or if the entry point might initially only be for a defined geographical space (e.g. region or district) within a country.

Figure 4.2 | **Continuous cycle of action, reflection, learning and adaptation**

The CD for AIS Cycle, therefore, is not a blueprint for effective CD for AIS but is proffered as *a guide for contextualized action.* Country approaches may differ significantly in content and process, reflecting context, opportunities, commitment of individuals, organizations and institutions, as well resources that can be mobilized to support the process. Above all, the proposed dual pathways approach to system-wide CD and learning needs to be piloted and the proposed CD for AIS Cycle further refined based on experience and learning from these pilot activities. The key element that should be common to all countries is the systemic approach through dual pathways and cross-system learning, ensuring all actors within the system have opportunity to participate, to create joint learning and formulate joint solutions.

STAGE 1
Galvanizing Commitment

Each actor in the system is called upon to devote effort and resources to ensure internal capacities are developed; to link with other actors; and to reflect on their own role within the-wider system. As highlighted above, CD for AIS is an endogenous process and must be owned by those involved if it is to be successfully implemented. It is by no means a straightforward task to convince actors within the AIS to question deep-seated attitudes and behaviours embedded in a "business as usual" mentality, and to embrace an approach of promoting agricultural innovation through participation, reflection and joint learning, the outcome of which is not predictable. In order to advance a coordinated process of strengthening CD for AIS at national level (and possibly sub-levels)[6] and to create mechanisms of learning across organizations, institutions, sectors and the system as a whole, it is important to ensure both a common understanding of what CD for AIS entails, as well as creating initial ownership and high level support of the process by those that head and lead representative bodies of actors within the system.

A conscious process of sensitizing to galvanize commitment to a dual pathway approach and system-wide learning is thus called for. This is not to say that individuals within the system are not aware of an AIS approach, nor that they are not already involved in relevant interventions. In most countries, however, such interventions are frequently disjointed and the organizations responsible for them view them as a 'project' and do not create space for organizational learning or new ways of working, let alone stimulate system-wide learning.[7] Creating commitment of relevant stakeholders at system level and achieving a joint understanding of what a dual pathways to CD for AIS would involve soliciting commitment to a coordinated approach, requiring effort and conviction.

WHO TO INVOLVE

At this stage, consultations should include not only heads and senior management of relevant ministries, organizations, networks and associations that are an immediate part of the AIS, but also legislators and development partners. Selection of who to contact should be based on an analysis of the wider stakeholders beyond the immediate actors in the agricultural sector, and include, for instance, ministries of finance and planning, local government, as well as national think tanks on economic and social development, financial institutes supporting the agribusiness sector, and relevant local NGOs. In addition, in-country development partners and international NGOs working in the field of agriculture should be involved in the process to galvanize their commitment and ensure coordinated and harmonized support for furthering the process.

APPROACH

Face-to-face meetings with individuals are well suited for initial discussions, but group discussions within organizations and institutions (e.g. heads of departments) as well as mixed group meetings should be considered,

[6] As stated above, countries may decide on operationalizing the cycle at national, regional or district level concurrently, or select one of these levels for the initial CD for AIS interventions. The Framework here departs from the national level to initiate the process.

[7] A good example of this are the many programmes aimed at strengthening individuals within research organizations and advisory services to facilitate innovation platforms. All too often the experience of these individuals with a new way of working does not inform attitudes within their organization and innovation platforms are regarded as yet another isolated project.

involving representatives of various actors within the system (private sector, research and education, civil society, extension services, government departments, etc.). It is important to keep in mind that one-off meetings will most likely not be sufficient input to mobilize support for a dual-pathway approach to CD for AIS. Thus various opportunities need to be used to meet high level officials and those who may have influence over their opinions. Gaining access to high level individuals may not be easy, and it may be necessary to work through intermediaries either within the organization or institution, or external to it, who are respected and have the trust of those in positions of authority. A strategy of whom to involve and how to involve them needs therefore to be developed, based on information from the scoping study. A useful tool here, borrowed from advocacy initiatives, is that of **audience mapping.**

A semi-structured presentation and interview format is suggested for face-to-face meetings. In addition useful inputs for this stage are considered below.

SCOPING STUDY

An important input at this stage is the implementation of a scoping study informing sensitization efforts, but which might also be refined and supplemented during this stage of consultation. The scoping study should be based on available documentation and interviews with key actors in the public and private sectors, non-profit organizations, and farmer organizations, as well as bi-lateral and multi-lateral development partners involved in agriculture.

The study is wider than just documenting CD initiatives or efforts to promote AIS. It needs to explore the nature and dynamics of the sector, identifying governance structures of and main actors in the sector, assessing the performance of and describing challenges faced by the sector, and any initiatives to promote innovation in agriculture (for instance innovation platforms, programmes of higher education, agricultural finance platforms, community communicators, sector dialogue events and exhibitions). It should describe what mechanisms are in place to transfer knowledge and technology, and what finance mechanisms and policies or incentives are in place to enable this.

It should further analyse the wider policy framework, and incentives in place for different actors to engage in innovation processes, assessing agricultural and rural policies, priority sectors or commodities, and regional differences in production and market access. Key questions should elucidate the existence of clearly defined policies in these areas and the nature and orientation of existing policy instruments. Through interviews with relevant actors the study should assess whether or not existing policies can be considered a positive (supportive) factor for innovation in general, and agricultural innovation processes in particular, or a hindrance.

Additionally, within economy-wide conditions, there is also the need to consider the nature of existing policies on education and information. Finally the scoping study should cover framework conditions such as monetary and fiscal policies, trade policy and existing trade arrangements or country participation in trade agreements, as well as investment and industrial policies.

The study should also ascertain which organizations, individuals or private advisory services could play the role of facilitator or are already involved in such activities.

POLICY BRIEF

Since the process of creating commitment at system or national level involves individuals whose availability may be limited, messages for sensitization must be succinct and in a language easily understood. A policy brief is a useful input to have for galvanizing commitment. To guide such a process, the brief

should follow the outline of questions "What is the issue?", "What is the evidence?" and "What actions need to be taken?".

INCEPTION WORKSHOP

After initial interaction with key actors, a one-day inception workshop would ensure that there is a common understanding of AIS and CD, as well as identifying the way of addressing CD for AIS through a dual pathway. Facilitation of such a workshop should include those versed in participatory methods, but also those recognized and respected as authorities in their field. A key input into this workshop would be presentation of the scoping study to provide a first understanding of the actors involved in the AIS, challenges and opportunities faced, and an overview of AIS initiatives.

EXPECTED OUTPUT AT THIS STAGE

During the process of galvanizing commitment, to ensure national ownership of the further process, those institutions or organizations, as well as 'champions' of the process, responsible for and involved in the next step – a visioning exercise – should be identified.

STAGE 2
Visioning

A visioning process brings together the representatives of actor groups within the AIS to build on the common understanding of AIS and envisage a coordinated approach to CD by actors within the system. In most cases, the visioning exercise will be in the form of a workshop. In some cases, due to the availability of key actors, the workshop may not take place as a single event but may need to be spread over several sessions. It might also be combined with the inception workshop.

WHO TO INVOLVE

Participants in the workshop should be from a wide spectrum of interested parties, such as from ministries, legislator bodies, representatives of private sector-based associations (for instance, input suppliers, processors, transport and retailers), commodity-based associations, farmer organizations and cooperatives, relevant parastatal bodies, financial institutes, providers of business development services, research bodies, tertiary and vocational education, extension services, development partners and civil society. As this is a process ensuring high level commitment and decisions on further actions and responsibilities, actors should be mandated to take decisions on behalf of their organizations, institutions or associations.

APPROACH

Building on an analysis of the actors and trends within the sector, actors will jointly map out the current state of the AIS and identify where they want to go. The visioning process at system level is a large undertaking, bringing together representative with very varied experience and interests. It needs skilful facilitation and, considering the number of individuals to be involved, a facilitation team of two or three, who are respected by the actors involved in the exercise. Bringing together high level representatives from diverse organizations for several days may also require significant financial investment. Inviting presentations from guest speakers who have gone through similar CD for AIS processes could be an advantage in setting the scene and overcoming possible scepticism.

Useful methods or tools[8] to use in the visioning exercise are:

- Brainstorming;
- Rich picture;
- Sector Network Analysis;

[8] Description of the tools and sources for further information are given in the Tool Box in this document.

- Systems Mapping;
- SWOT analysis;
- Capacity Focused Problem Tree;
- Visioning or Scenario Building; and
- World Café Methodology.

EXPECTED OUTPUTS AT THIS STAGE

Setting the boundaries of the system

Given the complexity of addressing the capacity needs of AIS, the visioning process should define the boundaries of the system (e.g. the system could be confined to a specific agricultural sector such as livestock or horticulture; it might revolve around a single or number of commodities, such as oilseeds or grains; certain selected value chains; or it might select key organizations to be strengthened, such as farmer organizations, key research institutes, Ministry departments or agriculture advisory services).

Identification of the innovation niche(s)

Identification of opportunities and CD needs is an important step for initiating an innovation niche. Niche initiation should be based on articulation of different world views, interests, experience and visions of different actors, so that it provides direction to learning processes as well as continuing commitment of actors to nurture it. New ideas or entry points may come from scientists, individual farmers, traders, extension workers or policy-makers. Although an innovation niche will normally emerge from collective interaction and participation of broader actor groups, specific actor groups may be encouraged to play the roles of 'change agents' or 'champions'. In general, actors with genuine and serious interests in the niche are better placed to mobilize commitment and resources within their own organizations and networks. Pre-intervention choices are helpful for determining broad boundaries of an innovation niche. The choices can be made based on certain criteria, such as commodity, geographical areas, interest of target groups, types of market, concepts and guiding principles of development (gender, food security, food safety, value chain, etc.).

During the visioning process the initial identification should take place of "innovation niche(s)" that will in themselves be systems of learning and innovation and also inform learning and adaptation of the system. This could involve building on existing multi-stakeholder or innovation platforms around a single commodity or value chain, or it might consist of establishing such a platform or other multi-stakeholder process that encourages interaction among actors in the system.

Identification of innovation niches should be done on the basis of **clear, jointly defined criteria** drawn up by the workshop participants. Innovation niche selection is a key step to assure the usefulness of the dual-pathways approach to CD for AIS. Two main criteria should guide the selection of the innovation niches to include in the CD effort: (i) positive (active?) innovation processes offering the possibility of developing "story lines" reflecting the roles of individual, organizational and enabling conditions in the innovation performance, and (ii) representativeness of the broader production, market and policy conditions, so that information and experiences gathered at the niche level can reasonably be part of the learning loop between pathways. In addition the value of an innovation niche should not be judged solely in terms of impact at the niche level, but also in terms of the contribution to the learning and the broader CD effort.

Identification of organizations and institutions for the capacity needs assessment

CD initiatives at organizational and institutional level need to be linked to the proposed innovation niches and/or processes of system-wide learning. By doing this, organiza-

tional CD interventions will be built around learning processes both internal and external to the organization.

Whilst the visioning exercise might identify those organizations and institutions that they consider key to catalysing the AIS strengthening process or, alternatively, see as particular weak links in the system, it is important that the organizations to be involved are enthusiastic about and committed to the process. Without keen commitment on the part of organizations and institutions, future CD efforts are likely to have limited results.

Linking to the innovation niches could be through the training, mentoring and coaching of facilitators from different organizations (e.g. research, advisory services, commodity-based organizations or farmer associations), the establishment of leadership programmes involving representatives from key organizations, or the design of a university-level programme involving representatives from the private and public sectors and farmer organizations.

Initial assessment of capacities in the system

As all major actors in the AIS should be represented at the visioning exercise, an initial participatory assessment of the strengths and weaknesses with regard to the five functional CD for AIS capacities can be undertaken using a SWOT analysis and a Capacity-focused Problem Tree. This can assist in identifying key organizations and institutions to be involved in the further CD process. It will also help decide in what way organizations and institutions could be linked to the innovation niches.

Process leadership team and champions

The visioning exercise should lead to coordination arrangements for furthering the process, identifying a process leadership team representative of the actors within the system (i.e. from private and public sectors, farmer associations, research, advisory and training bodies). Whilst the leadership of the process may sit within a specific institution or organization, it is necessary to also identify "champions" of AIS who are enthusiastic about the process and will ensure that steps agreed are actually carried out. How and when this leadership team reports back to the larger group as part of the system-wide learning process should also be agreed during this process.

Scope of the capacity needs assessment and team

A further outcome of the exercise should be a decision on the scope of the CD needs assessment (i.e. which organizations to involve in the initial assessment process) and the composition of a CD assessment team. The latter should be a multi-disciplinary team and have representation from across the system. The task of identifying a CD assessment team might be delegated to the process leadership team. It is important, however, that workshop participants have the opportunity to suggest points for incorporation in a Terms of Reference for the team and to identify the experience, background and skills required by individual team members.

Outlining a Learning Architecture

The process by which system-wide learning from multiple and possibly diverse strands of actor interaction and learning (innovation niches) will take place horizontally between innovation niches and system-level actors, and vertically from innovation niches to the wider system, should be outlined at this stage. The architecture may later be refined based on the experience of its practicability, and identification of new ways of sharing knowledge, learning and insights. This goes beyond simple reporting schedules of the leadership team to the wider, system-level group, and should include regular cross-system events bringing the strands together, developing interactive spaces where informa-

tion, knowledge interpretation and sense-making is shared. These could possibly be virtual spaces. It might also see members of different innovation niches acting as facilitators for others.

STAGE 3
Capacity Needs Assessment

Assessing capacity through some kind of diagnostic process can help arrive at a shared understanding of capacity challenges of individuals, organizations and the wider system; agree on aspects of capacity that need attention; and take account of factors that might promote or inhibit change. Such insights provide a basis upon which an intervention strategy can be conceived, including identification of appropriate entry points. These might include: organizational development work, adjusting internal and external incentives, promoting knowledge and understanding, tackling underlying organizational values and meaning, and adapting formal and informal structures and systems (Baser and Morgan, 2008).

Capacity needs assessments are normally semi-structured discussions and meetings with individuals, representatives of organizations, networks and institutions within the AIS (within the boundaries set during the visioning exercise), based on answering a central question "Capacity for what?" In the case of CD for AIS, the assessment aims to ascertain the level of functional capacity related to the overall capacity to adapt and respond at the various dimensions as set out in Chapter 2.

WHO TO INVOLVE

Within the AIS, the number of actors to involve could be boundless and spread over vast geographical areas of a country. Thus an attempt to systematically assess the capacity of all relevant organizations would be a herculean task requiring large resources in terms of funding, time and personnel involvement.

The capacity needs assessment builds therefore on the identification of key representative bodies (research, extension, private sector and public sector representation, farmer organizations and cooperatives) during the visioning process, which will be linked through specific activities to innovation niches and/or the wider system-level learning process. Ideally, the capacity needs assessment starts with those organizations and networks expressing a keen interest in the CD for AIS process. At the same time, those institutions responsible for creating an enabling environment and providing incentives to strengthen the AIS and which will be part of the wider system learning process needs to be assessed for capacity.

Building on a system perspective and given the provision for a system-wide learning architecture, initial interventions with only a few organizations could have a sort of snowball effect, with other organizations coming on board as the impact of a CD for AIS approach becomes evident. Documenting learning from CD initiatives within organizations and networks and communicating it widely will be crucial here.

APPROACH

Building on the outcome of the visioning exercise, the designated capacity assessment team and the process leadership need to clearly define the scope of the capacity needs assessment process: Whose capacity? For what purpose? Which organizations or representation of sector actors are to be assessed? As a first step, an appraisal of those key organizations and institutions is proposed that have expressed an interest to be part of the CD for AIS process and to link to the innovation niche or system-wide learning process. In many cases, representative organizations

or associations can be supported to carry out an assessment of their members. Thus the CD needs assessment process serves as a first step in sensitizing and galvanizing the commitment of the wider membership of these bodies and actors in the system.

Based on desk studies of existing documents (former CD assessments, annual reviews, etc.), a semi-structured assessment questionnaire and checklist should be developed. Interviews with key informants or focus groups should be carried out using the questionnaire and checklist as a guideline for discussion. Key areas for questions could be around the existence of an organizational strategy for AIS with clear objectives, action plan, resource allocation and responsibilities that guide activities, perceptions of how the organization or institution relates to external actors, as well as whether the organization or institution is viewed as a legitimate actor in the system. The questions should above all be related to the five AIS capacities as set out in Chapter 2 and expanded upon above in Table 4.1 Wherever possible, interviewees should be requested to give examples to illustrate a strength or a perceived weakness within an organization or institution with regards to the five functional capacities.

In an in-depth assessment in a workshop setting with representatives from across the organizations and institutions, should help actors jointly identify with facilitators or interviewers the characteristics of an AIS, and the capacities, governance structures and procedures, management and leadership, values and policies needed to strengthen their role in the AIS. This can be addressed by an analysis applying a "Where we now?" "Where do we want to get to?" and "How do we best get there?" approach. Alternatively a more incremental approach that builds on identified strengths can be followed.

Given the large size of such an exercise, small teams of research students or staff within various umbrella organizations (providing the latter are perceived as impartial) could be oriented in an assessment methodology and engaged. Alternatively, countries might opt for a staggering of the process, spreading the assessment of key organizations and institutions over a longer period, or a needs assessment of one or two organizations could be undertaken and they in their turn could conduct the further capacity needs assessments of others.

The outcome of such an assessment exercise must be fed back to those who participated in the exercise to enable them to own, and act on, the findings of the assessment. A workshop with each organizations involved in the CD needs assessment should therefore review and validate the outcome of the needs assessment process. Participants should then prioritize the CD needs and identify ways in which they might be addressed (i.e. training; on-the-job learning; coaching; and mentoring sessions) Here again facilitation will be key to structuring ideas, and resolving possible conflicts of opinion. Facilitators need to be versed in navigating possible conflict situations, and enabling different actor's points of view and reasoning to be respected. An atmosphere of trust is essential for actors to be open to one another.

With regards to innovation niches representing networks of organizations and individuals, it will be necessary, as far as these niches already exist, to assess in joint reflection meetings of members how coherence of the group is achieved and how learning within the network is taking place, and what mechanisms of feedback to the constituencies of network members are in place and how they link to external bodies.

The capacity needs assessment provides a snapshot of capacity needs across the sector to inform the setting of priorities and development of strategic CD interventions in a bounded system. Such priorities could be around

organizational functional capacity such as strategic planning, leadership support and finance or around more conceptual issues linked to AIS, such as systems thinking, or the acquisition of soft skills (see table 4.1).

Sharing and validation of results should take place with the wider group involved in the visioning exercise as part of the system-wide learning process. Although this could be done by sending out the findings electronically, a half-day face-to-face meeting would reinforce the ownership of the ongoing process and allow opportunity for this group to input into the priority setting for the CD needs strategy development.

Useful tools for the capacity needs assessment, which will need to be tailored to the specific requirements of CD for AIS, are:

- Capacity-Focused Problem Tree;
- Capacity Needs Prioritization Matrix;
- Gap Analysis;
- Rapid Assessment Matrix;
- Self-Assessment Questionnaires;
- Self-Assessment Scoring Matrix;
- Stakeholder and Actor analysis of CD Readiness;
- SWOT Analysis; and
- Innovation histories and timelines with specific reference to existing innovation niches.

EXPECTED OUTPUTS AT THIS STAGE

Baseline setting

As with the other steps in the CD for AIS Cycle, the needs assessment is not a one-off activity, as experience and exposure will call for development of new capacities and with time also involve new organizations and networks.

The needs assessment gives a comprehensive baseline at a certain point in time. Organizations, institutions and networks are called upon to regularly reflect on needed capacities and, above all, reflect on how the strengthening of any one actor in the system gives rise to changes to other actors in the system.

Prioritization of CD needs

Validation workshops at organizational and institutional level will set priorities for further CD interventions. A document outlining CD priorities for each organization, institution and possibly innovation niche should be compiled by the needs assessment teams.

A system-level meeting should review this document and feed into the decision on prioritizing which interventions to follow. In the next stage of the cycle – strategy development – these priorities will be further articulated and elaborated.

STAGE IV
CD Strategy Development and Action Plan

WHO TO INVOLVE

The process leadership team (possibly with the recruitment of external experts) is called upon to build on the visioning exercise and the analysis of capacity needs assessment of actors in the system as well as the priorities suggested by the larger system-level group. The team will identify goals, objectives, priorities and options for a system-wide CD strategy, and draw up a meta-action plan.

It will also require involvement of representation from those organizations and institutions keen to be involved in the CD for AIS process and, where already in existence, representatives of innovation niches.

Validation of the strategy and endorsement of the action plan by the larger system group involved in the visioning exercise must be sought. It may be possible to combine validation of the strategy and endorsement of the action plan in one and the same meeting.

APPROACH

Development of such a complex strategy will possibly take several meetings of the process leadership team together with representation

from organizations willing to move further with the CD process and with representatives of innovation niches. These meetings should be facilitated by someone skilled in strategic planning and able to steer the group to recognize opportunities and prioritize activities. As with earlier steps, feedback and validation of the strategic plan by the large system group should ensure transparency and reinforce ownership of the process.

The potential pitfall of this step is to produce a wish list of activities rather than identify activities that can build on existing opportunities, can attract resources and solicit commitment and enthusiasm from various actors. Identifying activities (however limited) that allow the momentum of the process to continue will be critical.

Useful tools and methodologies at this stage are:

- Action Plan Matrix;
- Appreciative Inquiry Methodology;
- Force Field Analysis;
- PESTLE Analysis;
- Problem-Tree Analysis; and
- Outcome mapping.

EXPECTED OUTPUTS AT THIS STAGE

Final identification of innovation niche(s) and key organizations and institutions

It is possible that countries identify innovation niches only at this point in the CD for AIS Cycle, rather than at the visioning stage. These should, however, be informed by criteria developed during the visioning exercise and on the basis of the, where relevant.

Prioritization of organizations, institutions and CD interventions and initiatives

Options for identifying organizations and how they are linked to innovation niches will depend on the country context, ongoing programmes and funding opportunities. As discussed above, they might evolve around strengthening what are considered key or catalytic organizations and institutions, or identified "weakest link" organizations, as they are involved in innovation niches or wider system learning. The commitment of these organizations to allocating time and resources to, and documenting, the CD process is essential for the uptake of this activity.

Further options might be cross-organizational initiatives such as leadership or change management programmes that enable interaction and joint learning among actors within the sector; a training of trainers for facilitators of multi-stakeholder processes, recruited from different organizations; the setting up of multi-stakeholder initiatives at national level to inform higher education on the needs of end users; the formation and capacity building of an "agricultural innovation" unit that coordinates the innovation activities of each actor; cross-ministry dialogue; policy dialogue with sector actors and clear mandates to act on these; orientation of legislators, for instance of relevant parliamentary working groups; or the establishment of incentive funds to set up and facilitate multi-stakeholder processes. Prioritization should also include identification of activities that can start immediately so as not to lose enthusiasm and commitment generated by the process so far.

Three main criteria determine the prioritization process within the strategy development: existing initiatives in a country that can be built on or adapted to be included in the strategy; the commitment of various actors to implementing parts of the programme; and the availability or commitment of funding for the activities identified.

A systems-wide CD for AIS strategy

Based on a Theory of Change and clear articulation of assumptions of how change will happen, the strategy should state the outputs expected of each activity and outcomes of the overall strategy. As we are dealing with com-

plex systems in which capacity and innovation emerge from multiple interactions of actors, the outcomes of prioritized activities are not predictable. Expected or desired outcomes should be formulated and a monitoring and evaluation framework developed linked to these. A process of reflection and learning will be critical for tracking whether these outcomes were achieved and which factors enabled or restricted their achievement. A particular aspect and challenge of the strategy will therefore be the design of mechanisms that allow for system-wide learning from the various initiatives at certain points of time within the implementation cycle. The learning process should include development partners to inform their support, way of working and also for possible uptake by other countries.

Resource mobilization strategy

A CD strategy needs to have resources needed for its implementation, and also a strategy for mobilizing resources for various activities from domestic and external sources. One possible way of addressing the latter would be to set up a "marketplace", whereby government, development partners and individual organizations can identify initiatives that fit well within their own development strategies and mandates, or that they consider innovative and interesting to support.

A master action plan

The action plan forms part of the strategic planning exercise. The process leadership group with additional support if necessary should design a "master action matrix plan" or "action map" outlining activities to be undertaken by different actors in the system. The term "master action plan" is used here as activities and interventions will require subsidiary action plans at organizational, institutional and innovation niche levels. According to priorities set in the strategy, these might be an organizational CD process in a key organization, the training of facilitators from different organizations, an inter-ministerial dialogue, etc. The matrix should show who or which organization is responsible for carrying out the activity, the timeframe, as well as resources required and the source of funding. As many of the activities will require substantial facilitation by external individuals, it is suggested that facilitation support be identified as a separate item in any action plan. Given that for many activities and interventions funding may first have to be sourced, the "master activity plan" may take the form of a rolling plan to be updated as new activities are able to take off.

Whilst, the process leadership group may draw up the action plan on its own, the support of a facilitator could help navigate the possible complexity of activities. Knowledge of appropriate planning software would certainly be of an advantage here.

The danger at this stage is the temptation to include too many activities that may never get implemented. Ensuring commitment of all those who put forward a CD activity and soliciting funding for this are preconditions for including an activity in the plan. The proposed rolling plan, which adds activities as funding becomes available, could be helpful in navigating the complexity of activities.

Another pitfall is the setting of unrealistic timeframes and an expectation of immediate results. It should be kept in mind that a CD development process is an ongoing process that take time, and results may not immediately be visible in terms of improved performance of individuals, organizations, networks or institutions.

Learning architecture design

Due to the rapidly evolving dynamics of the system, it is essential that learning from implementation of the strategy and adjustments accordingly are factored into the strategy developments.

In addition to activities, responsibility, resources and facilitation, the "master action plan" should clearly show how learning throughout the system will be enabled, i.e. when and which actors will come together to reflect on the various initiatives, analyse if and how they reinforce each other to strengthen the AIS, and adapt, where necessary, in the context of trends within the agricultural sector. This design should include communication activities for information sharing, including using virtual space.

The structure of the learning architecture may need to be revised as implementation progresses and needs for information sharing and learning become apparent.

Monitoring and evaluation system

In addition to the learning architecture, which builds on a qualitative reflection process, a monitoring and evaluation system needs to be included in the action plan, based on the outputs and expected or desired outcomes as outlined in the strategy.

Further guidance for the development of a monitoring and evaluation system can be found in Chapter 5 of this guidance note.

STAGE V
Implementation

Implementing the action will require the organizations involved and innovation niches to develop their respective (sub-) strategies and action plans, clearly stating objectives, expected outcomes and planned activities.

Given the complexity of the AIS, the involvement of different actors who must first build up trust between themselves to enable smooth interaction, and given the many strands of CD and innovation niches included in the overall strategy, the implementation stage may see these starting at different times and with different dynamics. Thus any plan must remain flexible.

At this stage, implementation of the learning architecture will be crucial to ensuring system-wide learning, changing mind-sets and attitudes, as well as informing the enabling environment.

WHO TO INVOLVE

Implementation of the plan will fall to those individuals, organizations and institutions who have taken on the responsibility for a certain CD activity. The process leadership group should, however, maintain a coordinating role throughout the implementation phase. It will fall to the process leadership group to ensure that documentation of the change process takes place and agreed learning mechanisms are adhered to.

APPROACH

An important part of the implementation will be the cycle of learning and reflection, both within individual organizations and institutions, but equally important across the sector. The learning architecture should allow that opportunities to regularly reflect upon and reassess interventions and their appropriateness in a given context are embedded within CD interventions and innovation niches. This requires documentation of the change process by actors. All too often space for reflection and learning is disregarded due to the busy work schedules of all involved.

Useful tools for tracking process are:

- Timelines;
- Mind mapping;
- Triangle of Change;
- Circle of Cohesion;
- Outcome Harvesting; and
- Reflexive Monitoring in Action.

EXPECTED OUTPUTS AT THIS STAGE

The expected outputs, and even outcomes, at this stage will have been set out in the CD strategy. Tracking and documenting progress of the diverse CD activities, formation of new partnerships and networks, and emerging innovations, as well as monitoring agreed indicators, will be critical as to whether these outputs and outcomes are being achieved.

The learning architecture put in place should allow for system-wide analysis of progress and, where necessary, adaptation in line with emerging insights and experience.

4.2 The CD for AIS Cycle in organizations, innovation niches and networks

The CD for AIS Cycle, as described above for the system, is mirrored within organizations and institutions that have committed themselves to a CD process within the framework of the system-level CD strategy. Often this process of CD at organizational level will have begun with the involvement in the system-level process.

The 'innovation niche' will in most cases be a form of an existing or new network created around enthusiasm and interest. The coming together of different actors within the network is already a CD activity leading to the challenging of embedded perceptions and modes of working. In the case of newly established innovation niches, interest in assessing the capacity of participating organizations may come at a later stage once the network has been formed. A capacity needs assessment is therefore not a prior step to establishing an "innovation niche".

Within the niche, it will be particularly important to gauge the dynamics of the group over time and track how trust between actors is built and coherence of the group achieved. This will require the skills of a facilitator not only versed in AIS but who can ensure inclusiveness of the network, negotiate power relationships and possible conflicts within as well as supporting the joint learning process. Familiarity with tools developed to understand and respond to the dynamics within the group are essential here.

CD through the proposed five stage cycle takes place within organizations and individuals, linked to their involvement in innovation niches as locations of joint learning and innovation. Through interaction within innovation niches, trust is built, assumptions questioned and attitudes changed. At the same time, system-level actors of the AIS interact to learn from the innovation niches and from organizational CD processes. In turn this informs their actions and the creation of incentives and an enabling environment for AIS actors to interrelate and strengthen the entire AIS. The process is one of mutual influencing, learning and creation of synergies. An overall learning architecture enables various strands of CD experience at niche, network and organizational levels to ensure system-wide learning.

4.3 Factors of success

FACILITATION AND INTERMEDIARIES

As set out in Chapter 2, the role of facilitators or brokers is central to the AIS approach of interaction and joint learning. The process of CD for AIS and system-wide learning that this implies also calls for skilful **facilitation** by individuals whose role goes beyond linking actors to relevant sources of expertise and knowledge, and who are able to navigate potential misunderstandings and even conflict between actors with divergent views and interests. Facilitators must be in a position

to create the trust among actors that enable the learning process, and to support actors in tracking and reflecting on the process of transformation.

In addition, these facilitators will be key in ensuring system-wide learning, tracking the change process, identifying challenges to and requirements for an enabling environment, and bringing this knowledge together at learning events to inform the learning process.

An important process that should run parallel to the CD cycle, therefore, is the identification and strengthening of those organizations and individuals that can play an intermediary role (see Figure 2.1) – for instance extension services, private consulting firms, university departments, capacity building organizations and NGOs – and their orientation to CD for AIS enabled through tailor-made training and on-the-job orientation and accompaniment, as well as reflection sessions and documentation of learning as facilitators. As discussed above, the activity of strengthening facilitators' skills and their involvement in innovation niches, may be a CD activity in itself for select organizations. Experience from facilitation activities should provide input into organizational learning processes.

FACILITATIVE LEADERSHIP AND CHAMPIONS

Another key factor for success of CD for AIS is capacity strengthening of senior managers of organizations to become facilitative leaders. Specific programmes need to be developed that bring leaders from different organizations together at regular intervals to reflect on their role in enabling their organizations to effectively act and respond to change, and to mentor and coach them in this role. Such a programme could also be considered an innovation niche leading to system-wide learning.

Effective leadership is not about striving to control what is uncontrollable; rather, it is about creating the conditions for groups, teams, organizations and communities to effectively and creatively cope with threats and to leverage opportunities for greater social impact. Facilitative Leadership is grounded in the belief that leaders must inspire and create conditions that enable others to be their best in the pursuit of shared goals. This includes enabling others to offer their unique perspectives and talents, speak up when they have problems, take initiatives, make appropriate decisions, work with others, and share responsibility for the health of the team, organization, or community. Leaders must develop practical collaborative skills and tools for tapping the creativity, experience and commitment of staff and colleagues.

RESOURCES

As already indicated above the suggested dual pathway approach to CD for AIS is resource intensive in terms of time and personal commitment, as well as funding. The extent to which planned actions can be fully implemented will depend on the availability of funding and skilled, local facilitators.

The idea of a national marketplace of activities whereby development partners can pledge to support parts of the overall CD for AIS strategy or can see ways of aligning them with ongoing programmes, is one suggestion for mobilizing resources. This is preferable to the conventional idea of developing individual project proposals, which would have the disadvantage of possibly divorcing activities from the coordination of the whole, and creating reporting and accountability lines to individual donors rather than to AIS system actors as a whole.

This will require development partners to review their funding practices and become more innovative. Hence the need to involve the development partners from the initial stage of the CD for AIS Cycle.

PILOTING

As already stressed, the proposed Common Framework, with its dual pathways to implementing CD for AIS, is a novel concept that needs to be piloted in a few selected countries to assess the practicalities of its operationalization as set out in this guidance note.

On the basis of learning from these pilot countries what works and what does not in particular contexts, it will be possible to provide more concrete guidance to individual countries on how to institutionalize Common Framework.

OVERALL CONSIDERATIONS

When adopting the proposed cycle it is important to keep in mind that CD for AIS involves complex processes. Strengthening the interactions of actors with diverse perspectives, interest in the process, incentives for involvement, the outcome of which is influenced by a myriad of factors, means that the outcome is difficult, if not impossible, to predict. The proposed dual pathways and the CD for AIS Cycle are suggested as ways of ensuring that disjointed pilots or projects and CD efforts of various development partners can be better coordinated and synergies created, leading to overall learning and effective AIS. Whether and at what stage a 'tipping point' from bringing together various strands of interventions to achieving an effectively functioning AIS might be reached, is impossible to predict.

The Common Framework proposes logical steps to improve interactions, coordination, joint learning, adaptation and responsiveness of system actors and the system as a whole. However it is not a guaranteed recipe for success!

CHAPTER 5

Integrated Monitoring and Evaluation of CD for AIS

5.1 The M&E architecture

Typically, an M&E system is built on a logical results chain, assessing progress and results at different stages of the chain. The M&E architecture proposed here establishes:

1. A system for monitoring and evaluating CD for AIS at **country level.**
2. A system for monitoring and evaluating the performance of the Common Framework at programme **level.**

The first element refers to M&E of progress and results in each of the five CD stages set out within the Common Framework, whereas the second element evaluates the success of the Common Framework approach in its entirety (its overall performance as a new approach to CD for AIS).

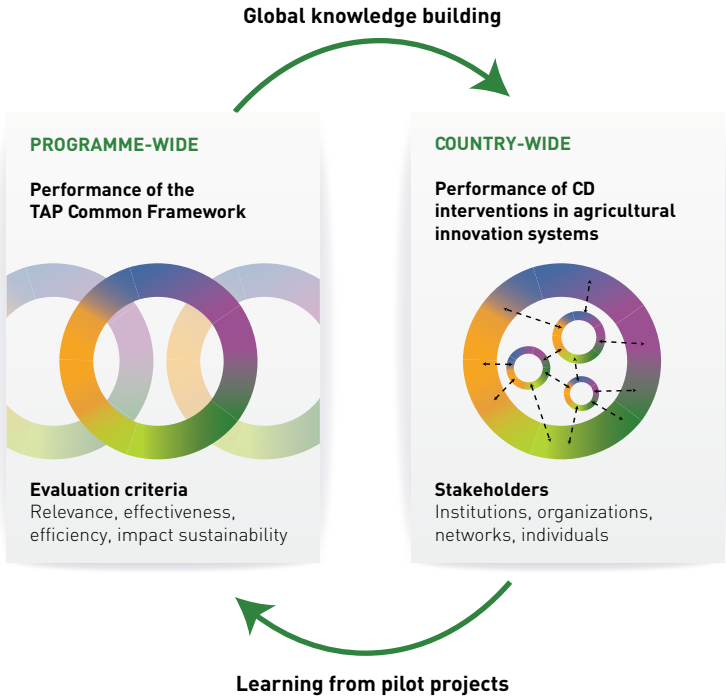
The two elements of the M&E architecture are integrated: empirical evidence, findings and learning from one element feed into the other and vice versa. The implementation of the Common Framework undergoes continuous adaption by using M&E approaches that encourage and facilitate collective knowledge building and adaptive learning (see box 5.1 and figure 5.1). This allows for improving approaches and interventions and making necessary adjustments. To track progress in a comprehensive manner, changes in all five

Box 5.1 | **Key evaluation questions being answered by the proposed integrated M&E architecture**

Capacity Development for Agricultural Innovation Systems at country level
How do we define and measure the performance of CD for AIS interventions within the CD for AIS Cycle, and what is the evidence on factors influencing the observed intended and unintended outcomes? Particularly, can a link between CD and the performance of national AIS or value chains be established?

Monitoring and Evaluation of the Performance of the Common Framework on CD for AIS at programme-level
How do we monitor and evaluate the performance of the Common Framework itself, and its contribution to the performance of AIS and the pro-poor outcomes that emerge? Is the Common Framework, the way it is designed and implemented, relevant to the intended users? In other words, does it suit the priorities and policies of the target group, recipients and development partners? Does it in fact engage target populations and promote learning? What factors influence the sustainability and replicability of CD at global level? Can we plausibly attribute improvements in the effectiveness of AIS to the CD interventions that are being advocated through TAP and the Common Framework?

Figure 5.1 | **The M&E architecture of the TAP Common Framework**



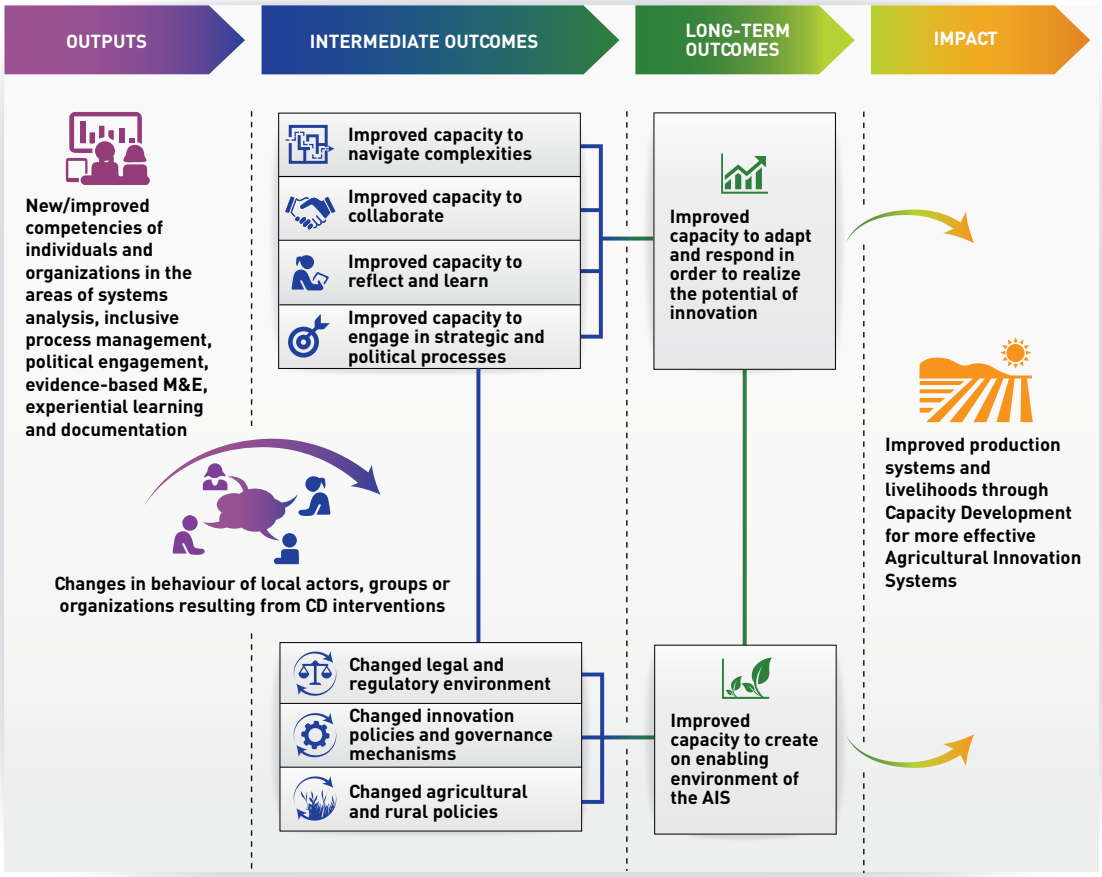
key capacities (Capacity to Navigate Complexity, Capacity for Collaboration, Capacity for Reflection and Learning, Capacity to Engage in Strategic and Political Processes and Capacity to Adapt and Respond in order to Realize the Potential of Innovation) need to be considered for effective M&E in CD for AIS. A consistent M&E methodology, starting from the needs assessment, is designed for comparing the effectiveness of CD interventions across time and space.

It is intended that the proposed M&E architecture can be used as a tool that is applied in a systematic and harmonized way. The advantage of using a common approach is that it **helps to structure and support monitoring and evaluative thinking within the individual countries that are implementing the Common Framework. In addition, it will build a systematic evidence base supporting the Common Framework.** The expectation is that the M&E architecture will continuously undergo an adaptation process based on lessons learned from the field, and thus will evolve over time into a more validated and robust architecture guiding M&E in CD for AIS initiatives.

5.2 Towards a set of core results indicators

The CD for AIS Cycle described in Chapter 4 promotes a systems approach to CD for AIS, whereby continuous learning and adaptation are key principles in achieving results. The notion is that CD is an endogenous process,

Figure 5.2 | **The CD for AIS Results Frame**



so its outcomes and the final impact are driven by the "facilitative" performance of both the enabling environment and the capacity of AIS actors to "adapt and respond" to challenges and emerging opportunities.

The main elements of the proposed CD for AIS Results Frame are set out below:

1. A clearly specified **Impact** that motivates the CD effort: *Improved production systems and livelihoods through Capacity Development for more effective Agricultural Innovations Systems.*
2. Two long-term outcomes that determine the extent of national and local ownership of the effort, in order to achieve the stated development goal(s), as well as the efficiency and effectiveness of that effort. The **two Long-term CD Outcomes** are:
   - improved capacity to create an enabling environment of the AIS; and
   - improved capacity of AIS actors to "adapt and respond" in order to realize the potential of innovation.

3. A change process that leads to advances in intermediate outcomes among AIS actors, and, when effectively integrated, to more innovation. The **Intermediate Outcomes (IOs)** are:
    - improved Capacity to Navigate Complexities;
    - improved Capacity to Collaborate;
    - improved Capacity to Engage in Strategic and Political Processes; and
    - improved Capacity to Reflect and Learn.

These depend on activities, instruments, and outputs designed to achieve the necessary capacity outcomes for the AIS actors or agents of change in the AIS. As discussed earlier, an effective AIS is a function of *technical and functional capacities*, and a fifth: *the Capacity to Adapt and Respond in order to Realize the Potential of Innovation.* The effectiveness of the actor's response to changes depends on the reflection of the four capacities at individual and organizational dimensions.

Finally, the CD for AIS Results Frame includes **outputs from CD interventions,** which are the *new and/or improved competencies that individuals and organizations have gained.* As part of the M&E System, these would be monitored and evaluated systematically along the 6 steps of the CD for AIS Cycle.

This guideline is meant to accompany the Common Framework document by providing more operational guidance on how to apply the Common Framework. It is also meant to be a working document, while the Common Framework is being piloted in the field. As such it provides some more practical details, and "food for thought" on how to go about operationalizing monitoring and evaluation of the Common Framework at country level. It can be used as an aid for defining and measuring the CD intervention results (i.e. outputs in form of new competencies, learning outcomes and long-term development outcomes) by the pilot projects, and for thinking through how to monitor (i.e. collect, analyse and manage) the resulting information for effective learning, management and accountability purposes. The aim is also that the countries introducing the Common Framework commit to reporting on an agreed set of "core" measures, including a joint development of survey instruments for collecting the necessary information for the indicators. This will allow consolidation of information about country results, foster learning, and serve as evidence about the potential developmental performance of the Common Framework as whole.

Experience shows, that it will require a consultative process with some iterations, initially among core actors at system and niche level along with their development partners, to finalize and agree on a set of indicators and their definitions. Each project may have additional outputs and indicators that are specific to its context and project design**.**

The following three tables provide a **working list of core results indicators** for measuring (1) long-term development outcomes; (2) intermediate outcomes; and (3) CD outputs that are compatible with the recommended M&E architecture laid out in the Common Framework.

Table 5.1 | **Long-term CD outcomes (CDOs) with core indicators**

Long-term CD outcomes (CDO) at systems level	**Core Indicators**	**Recommended Data Source**
	CDO INDICATOR 1 **Changes in agricultural research intensity (ARI) in the target country**	
Improved capacity to create an enabling environment for the AIS	**Definition** National expenditure on public agricultural R&D as a share of agricultural GDP. Recommended benchmark is 1%. **Guidance** This measure is being widely used as an indicator of an economy's relative degree of investment in generating new knowledge. National and regional ARI data is publicly accessible at http://asti.cgiar.org (ASTI = Agricultural Science and Technology Indicators); ASTI is a trusted open-source database on agricultural research systems across the developing world, led by the International Food Policy Research Institute (IFPRI).	Secondary Data from ASTI: http://asti.cgiar.org
	CDO INDICATOR 2 **Improvements in "Enabling the Business of Agriculture" indicators of the target country"**	
	Guidance • "Enabling the Business of Agriculture 2015" is a pilot assessment report on the agribusiness sector enabling environment in 10 countries currently, but information on additional countries is expected to follow. • It is an open-access database on enabling conditions for registering agricultural land, accessing financial services, strengthening seed systems, improving fertilizer supply, transporting agricultural goods, selling agricultural goods. • Under testing: Contracting agricultural production, electrifying rural areas, connecting farmers to information. • Depending on the CD for AIS country project, either a set of selected indicators or an *index* (to be generated – comprising all or only selected measures depending on the context of the pilot project) could be used as baseline (i.e. needs assessment stage) and subsequently changes could be tracked over time.	Secondary data from: World Bank http://eba.worldbank.org/
	CDO INDICATOR 3 **Change in the summary score of reported learning outcomes by AIS stakeholders (aggregated at niche or national level)**	
Improved capacity of AIS actors to Adapt and Respond in order to Realize the Potential of Innovation	CD learning outcomes result from behavioural changes attributable to improved competencies in the four basic capacities: 1. To Navigate Complexity. 2. To Collaborate. 3. To Engage in Strategic and Political Processes. 4. To Reflect and Learn. **Guidance** • Learning outcomes can be tracked by conducting opinion surveys of AIS stakeholder organizations and their staff at baseline, mid-term and at the end of intervention period using questionnaires with Likert scale answering options. • Each learning outcome would be measured at individual level using a self-assessment scoring methodology about the use of the competency acquired from the CD intervention. • Data on learning outcomes would be collected periodically, e.g., every two years, aggregated at the level of the individual and the organization, and finally reported at the niche or system level. • Baseline would be zero.	Primary data collection: Periodic survey of AIS stakeholders

(cont.)

Table 5.1 *(cont.)*

	CDO INDICATOR 4 **Change in share of AIS organizational actors that demonstrated the ability to advance their role within the AIS by having undergone a systemic change process (i.e. adopt, adapt, expand, respond) since the intervention has been implemented**	
	% of AIS organizational actors that advanced to the "ADOPT" Stage; % of AIS organizational actors that advanced to the "ADAPT" Stage; % of AIS organizational actors that advanced to the "EXPAND" Stage; and % of AIS organizational actors that advanced to the "RESPOND" Stage. **Guidance** Nippard, Hitchins and Elliott (2014) use a framework for measuring systemic change for the four stages of: adopt, adapt, expand and respond. Reflective questions for the project team to gauge the stage in which the organization is considered to be: • if you left now, would partners return to their previous way of working? (ADOPT) – yes/no; • if you left now, would partners build upon the changes they've adopted, without us? (ADAPT) - yes/no; • if you left now, would target group benefits depend on too few people, firms, or organizations? (EXPAND) - yes/no; and • if you left now, would the system be supportive of the changes introduced (allowing them to be upheld, grow, and evolve)? (RESPOND) yes/no. The intention is to track whether those at the adoption stage are in fact moving to more advanced stages and if so, at what pace, and how does one organizational AIS actor compare with the other? Nippard, *et al.* (2014) include a set of possible indicators that can be applied as evidence for determining whether a country's AIS falls under one or the other category, e.g. • financial and in-kind commitment by partners; • partner's satisfaction with results from the pilot; • interest in and ownership over learning that emerges from the pilot; and • former (pilot-phase) partners have invested in upholding, or improving upon (qualitatively or quantitatively), the change(s) adopted, without programme support.	Periodic Self-Assessment by Project Team See also Nippard, Hitchins and Elliott (2014)

Notes: This "enabling environment for an agricultural innovation system" is being defined as the set of factors that influence agricultural innovation but are controlled by institutional, regulatory and policy domains other than those directly linked to agricultural innovation. Please refer to Section 3.3 in the main document for more information.

Table 5.2 | **Intermediate Outcomes (IOs) with core indicators**

IO 1	**Intermediate Outcomes indicators**
Improved (systems) capacity to navigating complexity	**IO INDICATORS 1.1** **Level of cost reductions and/or revenue gain of AIS organizational actors** **Guidance** The assumption is that through improving the analytical competencies of AIS actors (e.g. in terms of systems thinking, complexity theory, value chain analysis, cost-benefit analysis) the understanding of the system and its interconnectedness is being improved, and with this information improved management decision can be taken that lead to reduced cost and/ or increase of revenues among other things. Management of AIS stakeholder organizations would be asked to estimate whether there have been cost reduction / revenue gains due to improving their analytical competencies (e.g. cost-benefit analysis, value chain analysis). Measure can be generated based on self-assessment by AIS stakeholder organization on a Likert scale such as: 3 – Significant cost reduction /revenue gains. 2 – Considerable cost reduction. 1 – No, cost reduction. 0 – Don't know. Certainly actual cost reductions /revenue gains should be measured in monetary terms, if data availability permits.
	IO INDICATOR 1.2 **Increase in number of co-innovations generated and put into practice (between organizational actors)** **Guidance** This indicator will help monitor whether over time the AIS is maturing and thereby generates an increased number of innovations. Unit of measurement could be: *number of improved technologies released, adoption rates of improved technologies and practices.*
Based on CD intervention output: Improved analytical competencies (e.g. systems thinking, complexity theory, value chain analysis, gender analysis)	
IO 2	**Intermediate Outcomes indicators**
Improved (systems) capacity to collaborate	**IO INDICATOR 2.1** **Inclusive decision-making processes about [topic] is in place (0-3)** "Inclusive decision-making" involves four steps (i) Collect input widely (both in terms of participation and in diversity of perspectives); (ii) Facilitate consensus; (iii) Announce the decision clearly; and (iv) Do not reconsider the decision unless there is significant new information. "[topic]" to be defined based on AIS context. Pilot project management and oversight bodies would self-assess whether an inclusive decision-making process for the targeted subject matter has been put in place, by using four results categories: 3 – Yes, fully. All four steps in inclusive decision making has been satisfactorily achieved. 2 – Yes, but only moderately satisfactorily. All four steps in inclusive decision-making have been conducted, some only moderately satisfactorily. 1 – Yes, but it is moderately unsatisfactory. All four steps in inclusive decision-making have been conducted, but mostly unsatisfactorily. 0 – No. One or more of the four steps in inclusive decision-making have not been conducted.
	IO INDICATOR 2.2 **AIS actors view themselves as part of an aligned, interlinked system** **IO INDICATOR 2.3** **Perceived level of (i) trust and (ii) commitment by AIS actors** **Guidance** Data for both indicators would be collected through periodic Stakeholder Perception Surveys asking questions related to: • beliefs; • collective action; • trust in relationships, social networks, institutions of governance (including fairness of rules, official procedures, dispute resolution and resource allocation); • organizational commitment; and • willingness to support, empowerment and involvement as elements of commitment. The unit of measurement would be a (summary) score generated based on answers for a group of questions. **Examples for possible questionnaire techniques:** "I believe in the value of this change" => 1(strongly disagree) -2 -3 -4 -5 -6- 7 (I strongly agree). "How well do people in your village/neighbourhood help each other out these days? Use a five point scale, where 1 means always helping and 5 means never helping."

(cont.)

Table | 5.2 *(cont.)*

	• Always helping; • Helping most of the time; • Helping sometimes; • Rarely helping; and • Never helping. **Some resources for questionnaire design:** Measuring Social Capital – An Integrated Questionnaire, World Bank (2007), Coetsee (1999)
CD intervention output: Improved process competencies (e.g. team building, listening, conflict negotiation, leadership, emotional intelligence, participatory methodologies	
IO 3	**Intermediate Outcomes indicators**
Improved (systems) capacity to engage in strategic and political processes	**IO INDICATOR 3.1** **Resources (time, budget) dedicated for engaging in joint activities with other AIS (organizational) actors with the objective of advancing the functioning of AIS** **Guidance** Joint activities with the objective of advancing the functioning of AIS could be the undertaking of joint research (e.g., resulting in joint publications), workshops, working group meetings, field days, knowledge fairs, joint online platforms, Board membership in partner organizations, etc. The unit of measurement can be *number of hours, day, local currency, opportunity cost of time spent.*
	IO INDICATOR 3.2 **Progress made in advocating for reforms** **Guidance** The assumption is that improved political engagement competencies will help in advocating for policy and regulatory reforms in a more successfully way. This success would be measured through: 1. Self-assessment by the project team (e.g., using a scale of 1-5, whereby no progress is 1 and excellent progress 5), with documentation of evidence, such as the use of AIS based policy analysis in formal policy-making processes. 2. Success in achieving campaign milestones for a given year (on a scale from 1-5).
CD intervention output: Improved Political Engagement Competencies (policy analysis, influence and negotiation skills)	
IO 4	**Intermediate Outcomes indicators**
Improved (systems) capacity to reflect and learn	**IO INDICATOR 4.1** **'Developmental evaluation tools' are being implemented effectively (on a scale from 1 to 5)** **Guidance** A generic checklist should be developed for: • stock-taking of what type of developmental evaluation (DE) tools are being applied. DE tools include outcome mapping, contribution analysis, most significant change analysis, appreciative inquiry, participatory action research, and visual language; and • gauging whether the principles and methods behind the DE tool are being applied in the intended and best possible way. In this respect, the team may also want to look at whether some of the following good practices in DE are being followed (Gamble, 2008): • **the M&E focal point takes an "accompanying" role during the innovation process,** i.e., he/she contributes to the core group of actors by moving through a range of roles such as observer, questioner and facilitator; he/she frames and syntheses ideas for the group, and thereby helps the group to make sense of its deliberations, to fine-tune and to move on. In the same way, the evaluator as facilitator supports the group as it interprets progress data so that it can feed directly into the ongoing development process; • **data collection is mainstreamed into the overall organization's processes** and serves planning, implementation and evaluation in parallel, i.e., data collection for evaluation already begins in the planning phase and continues through implementation and post-evaluation. Mechanisms can be the use of blogs and reflective journals; and • **process reporting goes hand in hand with an active framing of (process) data interpretation and the conscious challenging of assumptions,** e.g. during reflexive meetings, strategy conversations. *Resources:* Gamble (2008), Patton and Horton (2009).
CD intervention output: Improved Competencies in developmental evaluation, evidence-based and experiential learning and documentation (e.g. Participatory Action Research, appreciative inquiry, tracking the change process, reflexive monitoring and evaluation, horizontal evaluation, revised and emergent modelling).	

Notes: Largely based on self-assessment by (i) individuals; and (ii) representatives of organizations on behalf of their organization, and measured on a Likert scale (e.g. 1-10); it is suggested that a common survey tool should be developed and implemented by the proposed country pilot implementations.

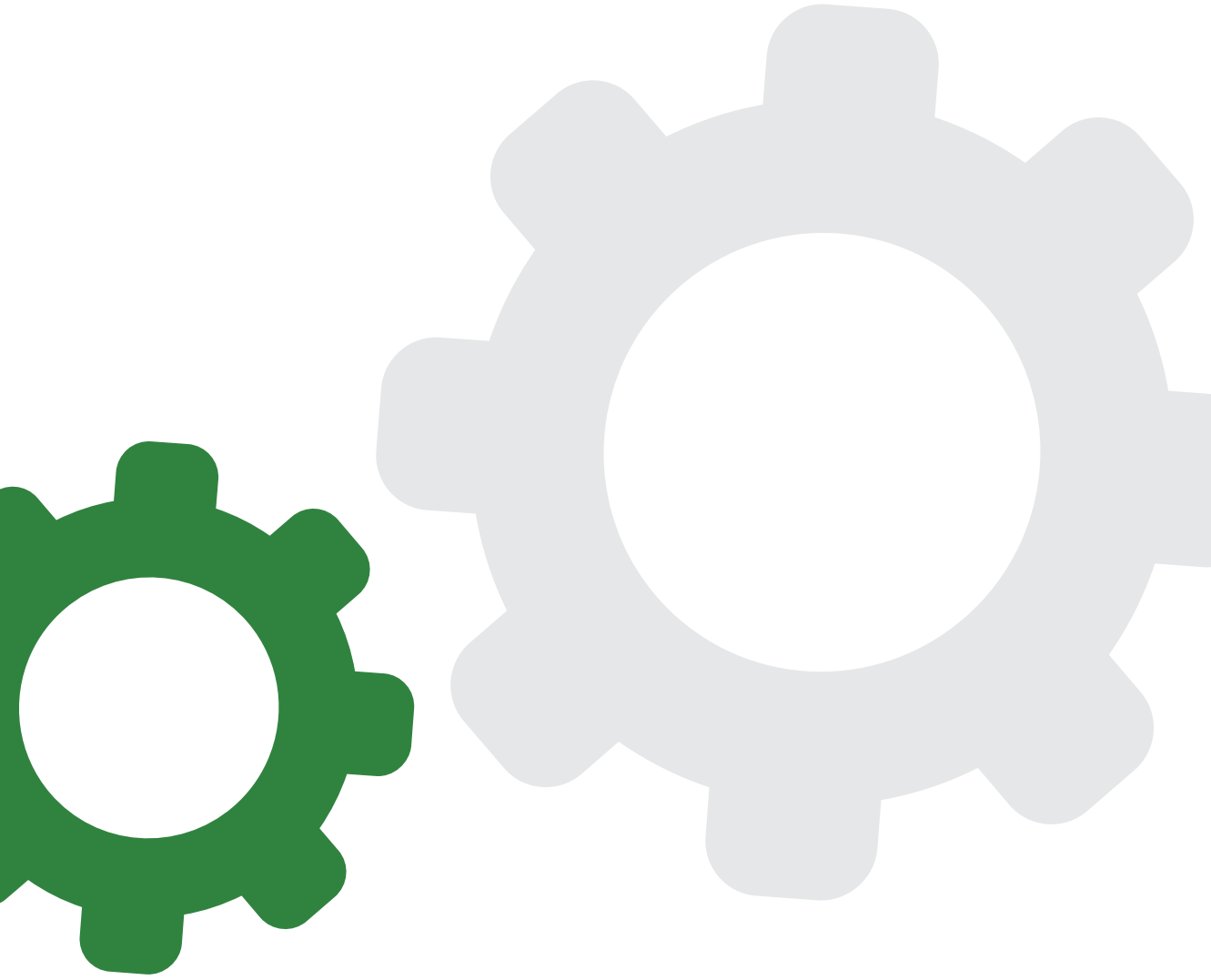
Table 5.3 | **CD for AIS outputs and indicators matching the stages of the CD for AIS Cycle**

Stage in CD for AIS Cycle	**Cycle Outputs COMPETENCIES**	**Core outputs (both at the level of an innovation niche or national system**	**Core output indicators (for illustrative purposes; to be customized based on context and priorities of the innovation niche or national system)**
Galvanizing Commitment	Improved Understanding, Commitment and Ownership of a process to strengthen AIS and CD for AIS.	Agreement on coherent process and boundaries of the AI system. Scoping Study conducted. Inception workshop planed and convened in an inclusive way.	Document [topic] describing CD for AIS process and boundaries is prepared and circulated. Scoping study [topic] commissioned and circulated among stakeholders for feedback. Inception Workshop conducted.
Visioning	Facilitative Leadership Committed and inclusive political engagement behaviour.	Clear Vision Statement is in place (at system and innovation niche level).	Vision Statement xyz developed in a participatory process. Vision statement xyz published with endorsement by key stakeholders (name).
Capacity Needs Assessment	Inclusive CD Needs Assessment, integrating technical, functional and capacities to adapt and respond.	CD Needs assessment conducted (i) using an effective participatory approach, and (ii) integrating the three dimensions of CD (technical, functional and capacities to adapt and respond).	CD Needs Assessment report prepared and publicly available (yes/no). CD Needs Assessment meets agreed quality criteria (on a scale of 1–5).[1]
CD Strategy	Effective leadership and management behaviour.	Improved Leadership competencies. Improved managerial competencies. CD for AIS Champions identified and nurtured.	360 degree competency assessment conducted as planned. Change in 360 degree competency assessment score.[2]
	Inclusive CD Strategy and CD Action plan developed and financing secured.	CD Strategy developed using a participatory approach. CD Action plan developed using a participatory approach. Sustainable financing plan.	The CD strategy is publicly accessible (yes/no). The process for developing the strategy meets agreed quality criteria (on a scale of 1–5). Action plan developed and publicly available (yes/no). The process for developing the action plan meets quality criteria (on a scale of 1–5). Financing plan is in place and meets agreed quality standards (yes/no).
Implementation	CD Implementation is progressing satisfactorily.	Timely achievement of milestones. Evidence on improved interdisciplinary mind-sets, incentive systems, KM, organizational changes, soft skills; ability to partner, influence and mobilize resources. Effective innovation brokerage mechanism in place. Measures of progress in change management of research and extension management.	Milestones established in action plan have been achieved within an agreed timeframe (1–5).

Notes: [1] A summary score generated from a check-list to be jointly designed and used by all pilot projects;.
[2] The leadership practices measured include: Vision, Goals and Objects, Model the Way/Quality Standards, Looking for a Better Way, Communication, Feedback, Rewards & Recognition, Building Relationships, Delegation, Participative Management, Individual Development, job Satisfaction.

CHAPTER 6

Tool Box



There are a number of existing tools that may be used for the stages in the proposed CD cycle. Some of them have been mentioned in Chapter 4. The toolbox describes these tools in more detail providing sources where more information on their use can be found and wherever possible pointing out the strengths and weaknesses of these tools. These tools are by no means prescriptive but should stimulate thinking on how best to approach a certain area of CD for AIS. In many cases they will need to be adapted to the specific issue of AIS in a given context. Utilizing these tools is by no means a guarantee of success. A tool is only as good as the craftsperson who uses it. Those responsible for the CD for AIS framework implementation are thus encouraged to be flexible and creative in their choice of tools and adapt to the local situation and actor constellation.

6.1 Action Plan Matrix

An action plan guides the team for getting things done and realizing their goals and visions. After mobilizing the team, defining the problem, developing visions and identifying roles and responsibilities, an action plan can be translated into a matrix. Some common elements of a matrix are priority areas, objectives, activities need to achieve capacity change, possible resources, actors responsible for different tasks, and time line.

An action plan matrix serves as a product that formalizes commitments for action and provides a plan to guide it.

- the action plan and matrix aid in learning processes – through the exercise of planning (collective reflection on a specific issue) the actors arrive at a consensual definition of their problem, and become aware of their capacities to change the situations;
- action plan should not be ambitious – scope of the action plan should not be large; and
- it is often a challenge to make the action plan concise and targeted. Without a concise and targeted action plan matrix, it is difficult to mobilize people and resources to accomplish the tasks.

Sources: FAO (2013b).

6.2 Appreciative Inquiry Methodology

Appreciative Inquiry is a methodology based on the belief that the way you conduct an inquiry affects the outcome. It is a positive thinking inquiry process that uses a series of statements to describe where the organization wants to be based on what already works in the organization. It is a powerful approach to change that engages and focuses the discussion positively.

By shifting conversations to the affirmative and positive, it can help growth and improvement in organizations. It can be used when:

- analysing organizations;
- designing change interventions;
- benchmarking an organization;
- doing strategic planning; and
- conducting monitoring and evaluation.

In some cases, the impression may be gained that the methodology is glossing over fundamental problems and conflicts within an organization by focusing only on the positive. Using a problem tree analysis as an entry point often helps in first bringing out critical issues to then focus on positive solutions.

Sources: FAO (2012b; 2013b).

6.3 Assessing Organizational Capacity

This tool aims to ensure that the most critical areas of organizational capacity are considered when planning an assessment. The tool uses a checklist of issues used to help deter-

mine if and how thoroughly the organization(s) should be assessed; the checklist can also be used to verify if a previous assessment has included the issues recommended. The checklist focuses on the following assessment areas:

- organizational outputs (services and products, including regulatory services and/or products);
- inputs (monetary, human, and physical and/or technical resources);
- leadership;
- motivation and incentives;
- balance between functional and political dimensions of the organization(s);
- fit between the formal and informal organization(s); and
- networking capacity.

This tool is relevant when competent actors have decided that a more formal and concentrated assessment or self-assessment of organizational capacity should be carried out. This tool is used when local stakeholders with sufficient power and concern for the sector are committed to foster CD.

It does not indicate how the key issues can or should be assessed, which can be done in many different ways. People involved still need to base their choices of assessment instruments on professional judgment.

Assessment by "others" is a very sensitive and delicate matter. Paying attention to content only and seeking an "objective" answer without considering how to involve the staff and management is a recipe for failure, hostility, breakdown of trust, and increased resistance to change.

Source: ADB (2011).

6.4 Audience Mapping

This tool identifies who has authority to make policy changes, or the primary audience (this could be as broad as the president or prime minister, a city mayor, the head of an institution or the CEO of a local company). In a second step, those individuals are identified who can influence the decisions of the primary audience and help gain access or convey information to the main actors. Such secondary audiences could include interest groups, business leaders, NGO or donor representatives, or possibly other policy-makers.

6.5 Brainstorming

It uses power of mind making it possible to quickly and, with a minimum effort, extend one's horizon to available experiences, ideas and opinions. It is applied during group sessions or workshop to collect uncommented ideas or suggestion. It is thus used at the beginning of the session (brief but comprehensive) in order to gain overview of the theme to be treated. Brainstorming sessions are used for solving a process problem, inventing new products or product innovation, solving intergroup communication problems, improving customer service, budgeting exercises, project scheduling, etc.

The method encourages creativity through a free flow of ideas. It ensures realism (i.e.by giving voice to a wide range of different perspectives) and increases commitment among participants to the final "product" of the discussion. This method usually leads to a very animated and energetic discussion. Even more reserved participants usually feel bold enough to contribute.

The power of association may be blocked if the ideas are criticized (e.g. it will cost too much, we have tried this before, etc.) as soon as they are expressed. This would discourage team members from expressing their ideas and introduces an element of self-censorship.

The output should be considered as first as an issue to consider, and then these must

be examined closely. Ideas that are not supported by evidence or not feasible should be eliminated at a later stage.

The sessions may be hampered due to many factors, such as unclear objectives or ill-defined goals, disorganized or less-than-enthusiastic participation, conflicts among team members, strong or overbearing personalities as well as micro-management by various decision makers, etc.

Sources: SDC (2009), FAO (2013b).

6.6 Capacity Focused Problem Tree

This tool identifies a capacity issue as a core problem, as well as its effects and root causes. It helps initiate and follow up on the collaborative design and implementation phase. It is an interesting tool that helps clarify the precise capacity-development objectives that the intervention aims to achieve.

By interpreting the effects to set objectives and addressing root causes to inform activities, a problem tree is a tool to helpful to develop and action plan and reach clarity about the outputs and outcomes that will be monitored.

A drawback may be that it tends to simplify very complex issues.

Source: FAO (2012b).

6.7 Capacity Needs Prioritization

It is an exercise related to capacity needs assessment, and uses a plenary session in a workshop to discuss priorities categorizing capacity needs into "high", "medium" and "low". At this stage of the assessment, it is very important to have clarity regarding what types of intervention might be considered by the funder of the capacity assessment.

It is helpful to establish what types of intervention might be supported by the existing mechanisms and might be undertaken without reliance on "external" funding.

A participatory process of prioritization of capacity needs, while raising stakeholder expectations, can be extremely useful for deepening the analysis of capacity issues and thinking strategically about how these can be addressed.

This exercise helps participants to transition from thinking in terms of "wish-lists" of what could be done to identifying implementable measures that will make a difference.

Source: FAO (2012b).

6.8 Circle of Cohesion

The Circle of Cohesion is a network analysis tool, specifically used to identify patterns of interactions (both constructive and destructive, as well as corresponding interventions) that either generate or drain energy from the network. The Circle of Coherence focuses on healthy interaction within the network. It tries to assess:

- if the network generates energy or not;
- which patterns of interaction require most attention; and
- what was undertaken to restore connection, or raise the level of coherence.

The dynamics tracked by this tool can become very complicated and complex, hence its use requires skilful facilitation and knowledge of the tool.

Source: http://www.linkconsult.nl/en/gereedschap/modellen

6.9 Drivers of Change

This tool is a qualitative study for country analysis which helps to identify different drivers of CD and linkages to the long and short-term changes.

The Drivers of change (DoC) tool helps to identify several issues required for understanding context and process of changes:

- basic country analysis – covering the social, political, economic and institutional factors affecting the dynamics and possibilities for change;
- medium-term dynamics of change – covering policy processes, in particular the incentives and capacities of agents operating within institutions;
- role of external forces – including the intentional and unintentional actions of donors;
- link between change and poverty reduction – covering how change is expected to affect poverty and over what period of time;
- operational implications – covering how to translate an understanding of the context into strategies and actions; and
- how we work – covering organizational incentives, including those promoting or impeding the retention of country knowledge.

It is essential that the team conducting the DoC analysis includes people with a very good knowledge of the country.

It requires significant amount of time to collect data and conduct the analysis.

It requires sound knowledge of data collection and skills of facilitation, analysis and synthesis.

Sources: FAO (2013a; 2013b).

6.10 Force Field Analysis

This tool – also called pros and cons analysis – is usually used for a preliminary context analysis, as well as to periodically review organizational goals and to set priorities.

It aims at drawing a picture of forces that work in favour or against a plan or project.

The analysis provides the assessment team with information to help make decisions that accommodate the interests of all forces. It is an action planning tool to help enhance or minimize opposing forces which can halt or encourage Change. Organizations or groups are better equipped to handle and plan for change when they increase their understanding of force relationships.

The rationale of the tool is based on the assumption that the outcome of a future plan or project is determined by forces acting for or against it. It is essential to reach consensus on what is the future 'desired' state if the team is to agree on what are positive or negative forces.

There may be a dilemma in reaching agreement as there is no 'in-between' decision – when some actors view a force as favouring the desired future state, while others may view the same forces as maintaining the status quo; some forces may even receive both types of assessments.

Sources: FAO (2013b), Kumar (1999), SDC (2009).

6.11 Gap Analysis

This is a process of generating long lists of capacity needs or aspects of CD requiring some form of intervention. It involves defining 'desired' capacity, and measuring 'existing' capacity through the participation of relevant actors. This is also called capacity assessment, and is a structured discussion with key national actors on major capacity issues, perception, with suggestions at different levels. Different checklists and matrices can be used to guide the process. However, these should be adapted to the specific context of CD for AIS.

In general, the process is guided by three general questions:

- Where are we now?
- Where do we want to go?
- What is the best way to get there?

It provides a comparison of existing capacities with desired levels of capacities, and helps to determine specific aspects of CD.

It is a step-by-step process and can be complex and time consuming.

Gap analysis may raise expectations among the actors, which needs to be well managed.

Source: FAO (2012b).

6.12 Interest/Influence Matrix

This is a matrix that helps to understand the role that local stakeholders and development partners should play in CD processes. Interest indicates their concern and support for CD change and "influence" indicates ability to resist or promote the CD process. It can be used during the identification and/or formulation phase of the project cycle.

Source: FAO (2012b).

6.13 Mind Maps

A mind map is a diagram that connects information around a central subject. At the centre is the main idea, the branches or arms are subtopics or related ideas. Greater levels of detail branch out from there and branches can be linked together.

Mind maps can be used for almost any thinking or learning task, from studying a subject (such as a new language) to planning a career or even building better habits.

Mind maps can be more effective than other brainstorming and linear note-taking methods for a number of reasons:

- it is a graphical tool that can incorporate words, images, numbers and colour, so it can be more memorable and enjoyable to create and review. The combination of words and pictures is several times better for remembering information than words alone;
- mind maps link ideas and group concepts together through natural associations. This helps generate more ideas, find deeper meaning in your subject, and also prompt you to fill in more or find what is missing;
- a mind map can at once give you an overview of a large subject while also holding large amounts of information;
- it's also a very intuitive way to organize your thoughts, since mind maps mimic the way our brains think – bouncing ideas off of each other, rather than thinking linearly; and
- one can generate ideas very quickly with this technique, and are encouraged to explore different creative pathways.

6.14 Most Significant Change

This is a participatory storytelling technique used for M&E of outcomes in an open way. It is especially helpful to unearth unexpected outcomes of interventions that otherwise are not trackable with indicators.

It can complement formal evaluation techniques, especially where the impact of an intervention can be described more effectively by qualitative rather than quantitative indicators.

It is simple and involves easy steps to follow.

The tool needs active stakeholders who are able to stay engaged, as they may be needed in identifying the type of change to be recorded and in analysing the data.

It is difficult if stakeholders are not active or easily accessible.

Source: FAO (2013b).

6.15 Outcome Harvesting

It is an assessment tool that applies principles of outcome mapping tools to identify, verify and formulate outcomes – what each social actor (or change agent) did, or is doing, that

reflects a significant change in their behaviour, relationships, activities, actions, policies or practice. It is used to learn about who changed what, when and where, why it matters, and how the programme contributed. It can be used either for monitoring or for assessment of projects, programmes or organizations.

- It is helpful when the nature of problem is complex – i.e. if it involves many and diverse social actors, challenging development problems addressed, and the uncertain solutions to these problems. There are often difficult to monitor processes because of the multiple actors involved and unclear result chains, but they offer an opportunity for experimentation to gather new lessons.
- The information gathered can be used to maximize the benefits of interventions and offer a context-specific view to inform and complement learning from other M&E data.
- Outcomes provide qualitative learning on key interventions and identify essential lessons, such as how best to adapt successful efforts to different contexts and how to choose the best mix of actors to involve. The information can also promote dialogue and inform strategic decisions on next steps. The information can help answer questions about a programme's results, and be a starting point for more comprehensive evaluation.

Source: World Bank (2014a).

6.16 Net-Map

Net-Map is a participatory, influence-network mapping method, based on social network analysis and power mapping. This pen-and-paper method helps those involved in or observing agricultural innovation to determine and discuss who the actors are, how they are linked, how influential they are, what their goals are, and what are the crucial bottlenecks and opportunities.

Net-Map is useful for understanding complex, dynamic situations in which multiple actors influence each other and the outcome.

It can be used for an initial assessment of an innovation system and can also help to monitor the innovation system's development over time.

Source: Schiffer (2012).

6.17 Outcome Mapping

Participatory methodology, to create outcome maps for organizations where M&E is primarily intended to support learning and improvement. It clarifies the presumed logical intended relationships among the objects of a programme, project or activity. This can be useful at any stage from ex-ante design to ex-post assessment. Clarifying ongoing and emerging intentions can be useful when implementing and monitoring, and in evaluations.

- It provides a structured framework for programmed design, outcome and performance monitoring and evaluation.
- It actively engages groups and teams in designing a learning-oriented plan and encourages self-reflection.
- Often used for large programmes, but difficult to use for smaller programmes as it may not be appropriate, but can be used for parts of smaller projects.

Source: FAO (2013a).

6.18 PESTLE Analysis

This is a model for analysing macro-environmental factors affecting the performance of an organization. The basic PEST assesses the Political, Economic, Social and Technological environment within which an organization operates. These are aspects of the external environment that are beyond the direct influ-

ence of the organization, but which should be considered by the organization when drafting its strategic plan and planning for the future.

There are several variations of the PEST. Some analysts add legal and environmental factors, renaming it into PESTLE or PESTEL; others add ethics and demographic factors.

The tool can be used to understand the external environment of an organization. It can be part of a strategic analysis to obtain an overview of the different macro-environmental factors that an organization has to consider to remain relevant. It can be used to shape the opportunities and threats elements in a SWOT analysis.

Source: FAO (2013b).

6.19 Problem-Tree Analysis

This is a planning tool, also called situation analysis or just problem analysis, that helps to find solutions by mapping out the anatomy of cause and effect around an issue, in a similar way to a mind map, but with more structure. The cause-effect diagram is drawn as a tree structure, where all items on the same causal level are aligned vertically.

The Problem tree is closely linked to the objectives tree, another key tool in the project planner's repertoire, and well used by development agencies. The problem tree can be converted into an objectives tree by rephrasing each of the problems into positive desirable outcomes – as if the problem had already been treated. In this way, root causes and consequences are turned into root solutions, and key project or influencing entry points are quickly established. These objectives may well be worded as objectives for change. These can then feed into a force field analysis, which provides a useful next step.

The problem can be broken down into manageable and definable chunks.

- This enables a clearer prioritization of factors and helps focus objectives. There is more understanding of the problem and its often interconnected and even contradictory causes. This is often the first step in finding win-win solutions;
- It identifies the constituent issues and arguments, and can help establish who and what the political actors and processes are at each stage.
- It can help establish whether further information, evidence or resources are needed to make a strong case, or build a convincing solution.
- Current issues – rather than apparent, future or past issues – are dealt with and identified.
- The process of analysis often helps build a shared sense of understanding, purpose and action.
- Problems need to be formulated as accurately as possible, and there should be consensus in problem formulation.
- It is easy to confuse 'problem' with 'missing solution', as the latter can also be interpreted as a problem. Therefore, it is necessary to make a special effort to go to the root cause and not see only symptoms.
- A single cause-effect line reinforces linear thinking; things are usually more complicated and there may be several interrelated lines.
- Representing all causes and all inter-relationships among them can become unmanageable. Therefore, the team needs to reach consensus on what are the most important ones.

Source: FAO (2013b).

6.20 Rapid Appraisal of Agricultural Innovation Systems (RAAIS)

RAAIS is a participatory diagnostic tool for integrated analysis of complex agricultural problems and capacity to innovate. RAAIS fa-

cilitates the analysis of interactions among: (1) different dimensions, levels and stakeholder dynamics of complex agricultural problems; (2) innovation capacity in the agricultural system; and (3) the existence and performance of the agricultural innovation support system. RAAIS has been developed and tested to identify and analyse opportunities for dealing with parasitic weeds in rain fed rice production in Tanzania and Benin. An upgraded version of RAAIS can be used as a participatory tool that can identify specific and generic entry points for innovation to address complex agricultural problems in the humid tropics.

It is a multi-method tool that combines qualitative and quantitative data collection techniques (workshops, interviews, questionnaires, secondary data analysis) that then allows for critical triangulation and validation of data. RAAIS facilitates interaction and negotiation among different groups of stakeholders in collecting and analysing data (e.g. farmers, NGO/civil society, private sector, government and researchers). RAAIS workshops can be organized with Research for Development (R4D) Platform or Innovation Platform members to identify entry points for innovation.

It is however quite a time consuming exercise, taking at least one full day with multiple actors, and requiring skilled facilitation.

Source: Schut (2014).

6.21 Rapid Assessment Questionnaire

This is a matrix for rapidly diagnosing (assessing, reviewing, etc.) the capacities required at system and other levels. There are different methods for rapid assessment of CD, and the matrix should be developed considering the concept and practices of CD for AIS.

Source: European Commission (2012).

6.22 Reflexive Monitoring in Action

Reflexive Monitoring in Action (RMA) focuses on analysis of the dynamics of network building, social learning and negotiation processes, and/or the effectiveness and efficiency of individual and/or collective activities, with a view to adapting interventions in the immediate future (Mierlo *et al.*, 2010; Arkesteijn *et al.* 2015). With the aid of various tools and skills, a reflective monitor (or a knowledge manager/facilitator) supports participants to reflect upon the relationships between activities and results, the institutional setting, and the ambition to change in both short-term actions and long-term goal and future perspectives.

Source: Mierlo et al. (2010).

6.23 Rich Picture

In situations involving actors from different fields with different perspectives and understanding of terms, it is often useful to use a visualization method. Here participants would be asked in groups to visualize the present and future situation of AIS through a drawing. This stimulates thinking deeply about an issue, and to understand it well enough to express it pictorially.

This method makes use of various parts of the brain and triggers more creative thinking. Also, a picture can sometimes say more than a thousand words.

- It helps participants to make connections among what they learned, and they often enjoy doing this assignment.
- The method requires quite some time to accomplish the whole process. It can become more of a recap than a deep reflection, i.e. encouraging people to visualize their learning (not just what happened).

6.24 Scanning the Institutional and Political Economy Context

This matrix is framed as a checklist to help assess typical institutional and political economy factors (budget allocations, influences on policy-making, influences on organizational capacities, accountability and monitoring processes, networking and external relations) across sectors that may influence the prospects for successful CD. This is done through a quick scanning of significant factors that enable and/or constrain the capacity and performance of sector organizations.

- It focuses on medium-term to longer-term factors, and not on individual actors and stakeholders.
- It helps to answer the question: Which context factors explain the current capacity, and why?
- The tool facilitates a dialogue about the readiness for the intervention among people with interests and voice or power.
- It is easy to apply.

Results of an analysis of institutional and political economy factors may be contested and could evoke negative reactions, particularly if the analysis were to be carried out by external development partners.

Sources: ADB (2011); FAO (2012b).

6.25 Sector Network Analysis

This methodology maps institutional linkages by visualizing relationships between actors and assessing the position of actors within the system. It helps map the necessary connections and interactions among actors, allowing the identification of priorities for strengthening relationships.

Source: Gordijn et al. (2012).

6.26 Self-Assessment Questionnaires

Capacity needs can be assessed using a self-assessment questionnaire. Any questionnaire should be designed with the possibilities for open-ended inquiry and for probing issues of particular importance. Given the contextual demands of any assessment, it is expected that the questions will be adapted, added to and/or deleted, to address context-specific needs.

When actors are geographically dispersed, self-assessment questionnaire is useful to assess capacity.

- Results can be used to stimulated discussion in a follow-up visit or workshop.
- Questions should be very clear; otherwise people will not complete the assessment.
- Correct translation in local language is needed.
- Significant time is required to follow-up, enter and analyse the data.

6.27 Self-Assessment Scoring Matrix

A scale can also be used to quantify capacity needs/priorities.

6.28 Six Thinking Hats (De Bono)

Six Thinking Hats is a powerful tool that facilitates productive: critical thinking, collaboration, communication, and creativity. It enables each person's unique point of view to be included and considered. It provides a framework to help people think clearly and thoroughly by directing their thinking attention in one direction at a time: white hat – facts; green hat – creativity; yellow hat – benefits;

black – cautions; red hat – feelings; and blue hat – process.

It's a simple mental metaphor. Hats are easy to put on and to take off. Each hat is a different colour, which signals the thinking ingredient. In a group setting each member thinks using the same thinking hat, at the same time, on the same thinking challenge – this is called focused parallel thinking.

Source: http://www.debonoforschools.com/asp/six_hats.asp

6.29 Social/Collaborative Media

Social media refers to the web-based tools and media that allow users to personally and informally interact, create, share, retrieve and exchange information and ideas in virtual communities and networks. Social media includes social networking sites, blogs and microblogs, online forums, discussion boards and groups, wikis, socially integrated text messaging services, videos and podcasts, and much more.

- The tools are very cost-effective and flexible, and can be used in different stages of the CD cycles as tools for reflections and documentation of learning.
- It help bring different actors into one platform – especially as it can be used as a rapid tool for collecting information from actors located at a distance.
- Tools can be used to document and share information (gathered through any other methods or tools) with a broader spectrum of actors, and then to synthesize the findings.
- Some tools can be used as monitoring tools, for instance, actors can share stories of innovation and capacity changes through Facebook or blogs, and then one can track or monitor their interaction and evolving network, etc.
- Collaborative media (blogs, Wikis, project management tools, etc.) can be used as platforms for content management, collaboration, reflection and learning.
- Limited Information and Communication Technology (ICT) and online facilities in rural areas.
- Suitable to only educated and 'online' clientele.
- Lack of awareness and 'readiness' to accept social media by some group of actors (e.g. farmers, extension agents, policy-makers, researchers).
- Success of social media depends on commitment level of users.

Source: Andres and Woodard (2013); Chowdhury and Hambly Odame (2013).

6.30 Social Network Analysis

This methodology maps institutional linkages by visualizing relationships among actors, and assessing the position of actors within the system (in terms of centrality, number of ties, and strength of ties). It helps map out the necessary connections, identifying priorities for strengthening relationships.

Sources: Spielman et al. (2009).

6.31 Stakeholder and Actor analysis of CD Readiness

This tool is relevant at all stages of sector development processes, but is particularly crucial when major CD initiatives are considered. It helps change agents to assess the likely support for and resistance to CD, to devise means to strengthen support and overcome resistance, and to design CD that is realistic given the positions of stakeholders. The tool consists of two parts:

- Actors Assessment Matrix and stakeholder analysis. The matrix invites the user to consider possible stakeholders, their

interests, and resources. Not all stakeholders may be relevant or important in all sectors and/or contexts. The matrix is useful for making detailed analysis.

- Circle of Influence Graphic. This tool provides a visual overview. It builds on the details from the Actor Assessment Matrix.

The tool allows a dialogue on the CD readiness of people with interests and voice or power related to the CD.

It is designed to map the situation as it is and not as it should be.

- The tools provide a simple mapping of the key actors or stakeholders who will influence the success of any CD or change process. Without the active support and involvement of key players, the CD or reform process will not succeed.
- The tool cannot be used in abstract, but must refer to a broad indication of the direction of change.
- Repeated analysis is required to assess, in a more precise manner, when and where the balance would tilt in favour of CD and change.
- Some CD elements may evoke more resistance than others, and may therefore have to be postponed.

Source: ADB (2011).

6.32 SWOT Analysis

It is a tool for strategic analysis and planning which helps to define a strategy for organizational development. It is a strategic decision-making tool used to identify the strengths, weaknesses, opportunities and threats facing an organization or multiple actors in a value chain or sector.

Strength and weakness are organization's internal attributes, such as its capacity (i.e. the resources that an organization possesses and the processes used to manage them) and its motivation (i.e. the factors that influence the direction of the organization and the energy invested in its activities).

The opportunities and threats are factors external to the organization (i.e. the stakeholders' context, which includes competitors, economic and political partners and allies) and the "rules of the game" (i.e. the political, administrative, legal, economic and socio-cultural context).

The resulting assessment is used to identify and leverage internal strengths to pursue external opportunities while mitigating weaknesses and threats. It can be used in various contexts at different levels of analysis, such as the national development sector (agriculture, education), organizational development (strategy to develop organizational operating plan), value chain analysis (exploring the economic environment of a community) and innovation assessment (analysing environment of an innovation).

It sometime difficult to define the context. In general, the tool is used for developing strategies for organization and projects. It is therefore necessary to have a clear definition of the context – is the SWOT being used to define strategies to support an innovation process or to analyse different conditions of product innovation (e.g. technology such as crop variety or a value chain, etc.)?

Participants should be knowledgeable about different domains of the subject and capable of providing unbiased views and facts.

It is sometime challenging to have a clear perception and agreement about a SWOT component.

Sources: FAO (2013a); Ahmed and Omotunde (2012) ; SDC (2009).

6.33 Systems Mapping

Using flow charts or graphics to represent the different components or interactions among components. It assists in identifying gaps, duplications, strengths and opportunities.

System mapping has some clear advantages, including that it produces visual tools that can be readily digested by stakeholders. Since a system map quickly communicates relationships visually, it can be useful in soliciting information about those relationships from participants in interviews or focus group discussions. A participatory process of producing a system map can also help to challenge assumptions, improve understanding, and promote consensus among stakeholders.

System mapping however has some potential limitations. Since most system mapping is qualitative, when developing maps it is important to acknowledge the potential for bias and limitations of perspective.

Source: CCSA (2014).

6.34 Theory of Change (ToC)

The Theory of Change (ToC) is both a process and a tool or methodology. It should be seen as a continuing process of discussion-based analysis and learning that produces powerful insights to support programme design, strategy, implementation, evaluation and impact assessment, communicated through diagrams and narratives that are updated at regular intervals.

Developing a ToC requires both logical thinking and deeper critical reflection. It is a continuing process of reflection to explore change and how it happens, and what that means for the part actors play in a particular context, sector and/or group of people.

- It locates a programme or project within a wider analysis of how change comes about.
- It draws on external learning about development.
- It articulates our understanding of change – but also challenges us to explore it further.
- It acknowledges the complexity of change: the wider systems and actors that influence it.
- It is often presented in diagrammatic form with an accompanying narrative summary.

ToC encompasses the following elements:

- context for the initiative, including social, political and environmental conditions, the current state of the problem the project is seeking to influence, and other actors able to influence change;
- long-term change that the initiative seeks to support and for whose ultimate benefit;
- process or sequence of change anticipated to lead to the desired long-term outcome;
- assumptions about how these changes might happen, as a check on whether the activities and outputs are appropriate for influencing change in the desired direction in this context; and
- diagram and narrative summary that captures the outcomes of the discussion.

The ToC is best kept flexible and should not be prescriptive. It inspires and supports innovation and improvement in programmes. The central idea in ToC thinking is making assumptions explicit. Assumptions act as 'rules of thumb' that influence our choices, as individuals and organizations. Assumptions reflect deeply held values.

- The time and resource needed to work effectively with ToC needs to be taken seriously.
- Staff in donor agencies, country programmes and civil society organizations are all under time pressures.
- Pragmatic approaches can get ToC habits seeded, but institutional and funding support for ToC processes is needed to get full benefits in terms of more robust log-frames, results frameworks and better implementation of programmes.

Working with ToC requires performance-management approaches to accommodate uncertainty and flexibility. ToC thinking can be challenging, but it can create a strong organizing framework to improve programme design, implementation, evaluation and learning, if some of the following enabling factors can be achieved:

- people are able to discuss and exchange their personal, organizational and analytical assumptions with an open, learning approach;
- ToC thinking is used to explain rationales and how things are intended to work, but also to explore new possibilities through critical thinking, discussion and challenging of dominant narratives for the benefit of stakeholders;
- critical thinking is cross-checked with evidence from research (qualitative and quantitative) and wider learning that brings other analytical perspectives, referenced to the contextual knowledge of stakeholders, partners and beneficiaries;
- a number of ToCs are identified as relevant 'impact pathways' for any given initiative, rather than a single pathway, with acknowledgement of the non-linearity and emergent nature of these;
- documented ToCs and visual diagrams are acknowledged as subjective interpretations of the change process and used as evolving 'organizing frameworks' to guide implementation and evaluation, and neither rigid predictions nor prescriptions for change;
- ToC frameworks and visuals are used to support a more dynamic exchange between donors, funders, grantees, development partners, programmes and communities, to help open up new areas and challenge received wisdoms; and
- donors, funders and grant-makers are able to find ways to support justified adaptation and refocusing of programme strategies during implementation, while there is time to deliver improvements to stakeholders and communities.

As it encourages on-going questioning of what might influence change in the context and drawing on evidence and learning during implementation, ToC thinking can inspire improvements in programmes, moving beyond technocratic responses towards more realistic and feasible interventions that are responsive to dynamic contexts.

Sources: Vogel (2012); Reviers (2012).

6.35 Timelines

The Timeline method is a tool for joint reflection on a network process. It helps to share perceptions and opinions from participants in such processes. The tool is fairly simple to use and takes only a limited amount of time. It reveals the historical process of a network, as seen through the eyes of the people involved. The result is a story of which the participants say: "Yes, this is what happened, and this story reflects the most important moments."

Experience shows that after a timeline session people are more inclined to take responsibility for their collective process.

A timeline appreciates all contributions. Different points of view can be figured next to each other, and such differences are interesting. Participants are asked to recall all moments they see as significant for the network process, from the start of their involvement until present. They write each moment on a separate post-it sticker. These moments can be positive, adding energy to their involvement, or negative, taking energy away. They can also refer to flash moments where new insights broke through or new opportunities opened up.

With regard to AIS, the timeline should be based on a single innovation (e.g. a new product, a new type of organization) or on a process in general (innovation in an organization or sector). In this case, it does not focus on a single innovation, but more on the process of change.

Source: http://www.linkconsult.nl/en/onderzoek

6.36 Triangle of Change

The Triangle of Change is a network analysis tool, specifically applied to identify options that people take in a process of change, and how to deal with them strategically The Triangle of Change focuses on positions taken by individual actors. It addresses the questions:

- Who are the drivers for change?
- What positions do key actors take?
- What steps were taken to induce movement?

It visualizes positions relevant to change in a network. Any process of change takes place in the field of tension between people having ambitions and structure that sets the conditions for what is expected, allowed and profitable. People take up different positions. Some are inspired about change, whilst others feel primarily responsible for the structure. There will also always be those who are more concerned about their own circumstances and survival than what they share with others. In this situation, the tool helps in choosing a strategy that finds sufficient supporters who share an ambition. In implementing this, approach gatekeepers only after acquiring a position that ensures the initiative will be taken seriously; and then communicate about realistic changes with the others.

As with the Circle of Cohesion, this tool requires skilled facilitation and familiarization with how to use and interpret it.

Source: http://www.linkconsult.nl/en/onderzoek

6.37 Visioning or Scenario Building

This is a process through which a group develops a vision (a single scenario) to define and collectively help achieve a desired future. Visioning is a process of creating a compelling statement about what an organization aspires to be or to accomplish in the mid-term (i.e. five years from now) or in the long term (10 or 20 years from now). A vision is a mental picture of the organization's or multi-stakeholder platform's ideal future, which is shared by its leaders, staff and members.

It is useful to develop strategic plans in a variety of contexts: urban planning, community planning, organizational development, innovation impact assessment, and action plans.

It is very useful to design a new organization (formalization phase) or when the organization is driving a large-scale change (re-invention phase). Visioning is essential to any successful organizational change. It serves to motivate and energize people, gain commitment and provide direction.

- In the context of community action planning, it can be used to formulate objectives and activities needed for fulfilling an innovation support plan.
- Visioning should be considered as a learning process that enables stakeholders to get together, exchange and analyse their situations, rather than as final project formulation. It is always challenging to get accurate and relevant information about an ambition or a dream, and it may change over time, with change in stakeholder circumstances, interests, and points of views.

The issue of community representation has to be considered carefully – it can be resumed with relatively small group of people and then the team should be expanded as the process progresses, either before or after the problem identification.

Sources: FAO (2013b); DFID (2003).

6.38 World Café Methodology

To ensure full participation in a large group and gather diverse opinions on key questions, a World Café methodology can be adopted. A café conversation is a creative **process for collaborative dialogue sharing knowledge and creating possibilities for action.** It focuses on convening conversations around questions that matter. A café conversation is a creative process for leading collaborative dialogue, sharing knowledge and creating possibilities for action in groups of all sizes.

Four to eight people sit around a table and hold a series of conversational rounds about one or more questions, but with a focus on one question per table. The conversations are facilitated by the table host who remains at the table throughout. At the end of each round everyone moves to another table with the exception of the host. By providing opportunities for people to move in several rounds of conversation, and by mixing the table participants at each round, ideas, questions and themes begin to link and connect. World cafés are participatory, inclusive and can even be held in multiple languages.

World café is very flexible and can be used in many settings. Its discussions can be used to start a larger meeting, respond to a keynote speaker or solve problems.

It is useful when sharing stories and experiences, reviewing and evaluating projects or conducting planning and visioning exercises, i.e. anywhere a conversation will help forward the work.

World café discussions are traditionally conducted face–to-face, but some people are experimenting with ways to do them online in order to include people who cannot be physically present.

It requires that table hosts are well versed in their role of facilitating conversation around a question, and not directing or even dominating the discussions.

World café can be used to complement other methods. For example, one can start with a keynote speaker, and then instead of holding question and answer sessions, move into a world café.

Sources: FAO (2013b); SDC (2009).

6.39 5 Ws (and an H)

This is a simple and effective action planning tool using simple focusing questions to clarify roles, responsibilities and resources for implementing the assessment. The tool uses the following questions to guide the process:

- Why – Why do it? Why do it then? Why do it there? Why do it that way?
- When – When is it done? What other times can it be done? What other times should it be done?
- Who – Who does it? Who is responsible for it? Who else can do it? Who should be involved?
- What – What to do? What is already being done? What else should be done? What should be the focus? What are the expected outcomes?
- Where – Where to do it? Where should it be done? Where can it be done?
- How – How to do it? How should it be done? Is there another way of doing it? How will it be resourced?

Source: Stephen and Triraganon (2009).

ANNEX

Overview of Tools for Monitoring and Evaluation

Tools/Methods/ Methodologies	Description: What is it?	Strengths/ Importance	Weaknesses/ Caution	Reference/ Further Reading
Cost-benefit analysis Cost-effectiveness analysis Cost comparison analysis	Cost-benefit and cost-effectiveness analysis are tools for assessing whether or not the costs of an activity can be justified by the outcomes and impacts. Cost-benefit analysis measures both inputs and outputs in monetary terms. Cost-effectiveness analysis estimates inputs in monetary terms and outcomes in non-monetary quantitative terms. Cost comparison analysis takes multiple programmes and compares them using the same units, –allowing policymakers to ask: per dollar, how much does each of these strategies reduce the problem?	A good quality approach for estimating the efficiency of programmes and projects: – Makes explicit the economic assumptions that might otherwise remain implicit or overlooked at the design stage. – Useful for convincing policy-makers and funders that the benefits justify the activity.	Fairly technical, requiring adequate financial and human resources available. Requisite data for cost-benefit calculations may not be available, and projected results may be highly dependent on assumptions made. Results must be interpreted with care, particularly in projects where benefits are difficult to quantify.	World Bank, 2004. Monitoring and Evaluation: Some Tools, Methods & Approaches Dhaliwal *et al.*, 2012
Focus Group interviews	Structured interview with a small group of respondents designed to answer specific research questions for scientific purposes. Helps to gather data, including opinions, perceptions, values, and ideas to make data-driven recommendations for programmes and policies.	Useful in evaluating learning programmes, because respondents gather in one place (actual or virtual) for a specified time, which simplifies recruitment; can be used for mid-term review or programme monitoring, enabling decision makers to make mid-course responses can help contextualize quantitative data; allows the moderator or participants to pursue ideas generated by the group; generate insights through cross-fertilization of ideas in group interaction.		World Bank, 2004. Monitoring and Evaluation: Some Tools, Methods & Approaches
Formal surveys (e.g. household surveys, web-based survey of stakeholders, perception surveys) Polls	Formal surveys can be used to collect standardized information from a carefully selected sample of people or households. Surveys often collect comparable information for a relatively large number of people in particular target groups.	Findings from the sample of people interviewed can be applied to the wider target group or the population as a whole; Quantitative estimates can be made for the size and distribution of impacts.	Can be expensive and time consuming. Many kinds of information are difficult to obtain through formal interviews.	Iarossi, 2006. The Power of Survey Design
Horizontal evaluation	Horizontal evaluation is an option developed to evaluate new methodologies for agricultural research and development that combines self-assessment by local participants and external review by peers. The focus of horizontal evaluation is the actual R&D methodology itself rather than the project per se or the team or organization that developed it.	The involvement of peers neutralizes the lopsided power relations that prevail in traditional external evaluations, creating a more favourable atmosphere for learning and improvement.		Thiele *et al.*, 2006. Horizontal Evaluation. http://www.cgiar-ilac.org/content/horizontal-evaluation

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Tools/Methods/ Methodologies	Description: What is it?	Strengths/ Importance	Weaknesses/ Caution	Reference/ Further Reading
Impact evaluation Quantitative methodologies (e.g., Causal Inference and Counterfactuals, Randomized Selection Methods, Regression Discontinuity Design, Difference-in-Differences, Propensity Score Matching Techniqueses)	Impact evaluations are a particular type of evaluation that seeks to answer cause-and-effect questions, i.e., the positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended. An impact evaluation looks for the changes in outcome that are directly attributable to the program.			See www.Alliance.4Useful Evidence@nesta.org.uk
Qualitative methodologies (e.g., Realist Evaluation, General Elimination Methodology, Process Tracing, and Contribution Analysis)				Mayne, 2008
Multi-stakeholder Results Framework	A tool to strengthen the results and effectiveness of multi-stakeholder development planning, implementation and results monitoring; the RF is developed through a collaborative process with all stakeholder making contributions; it provides a road map of agreed upon priorities to prepare a development strategy with a strong results-focus.	Can help (i) to overcome some deep-rooted institutional problems, (ii) bring together fragmented development context and ownership (iii) can facilitate consensus building on priority outcomes.	Can be time consuming; high transaction costs.	World Bank, 2013. Designing a Multi-Stakeholder Results Framework
Rapid appraisal methods (e.g. Key informant interviews, focus group discussion, community group interview, direct observations, mini survey)	Rapid appraisal methods are quick, low-cost ways to gather the views and feedback of beneficiaries and other stakeholders to respond to decision makers need for information; Skills required are Non-directive interviewing, group facilitation, field observation, note taking, and basic statistical skills.	Low cost, can be conducted quickly, and provides flexibility to explore new ideas.	Findings usually relate to specific communities or localities; thus, it is difficult to generalize from findings, and findings are less valid, reliable, and credible than findings from formal surveys.	Vondal, 2010. Schut *et al.*, 2015

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Tools/Methods/ Methodologies	Description: What is it?	Strengths/ Importance	Weaknesses/ Caution	Reference/ Further Reading
Theory-based evaluation	Provides early feedback about what is or is not working, and why; allows early correction of problems as soon as they emerge; assists identification of unintended side-effects of the program; helps in prioritizing which issues to investigate in greater depth, perhaps using more focused data collection or more sophisticated M&E techniques; provides basis to assess the likely impacts of programmes.	Can easily become overly complex if the scale of activities is large or if an exhaustive list of factors and assumptions is assembled. Stakeholders might disagree about which determining factors they judge important, which can be time-consuming to address.		Weiss, 2000. Theory-based evaluation
Developmental Evaluation Revised and emergent modelling Network mapping Appreciative inquiry	Involves changing the intervention, adapting it to changed circumstances, and altering tactics based on emergent conditions. Developmental evaluations are designed to be congruent with and nurture developmental, emergent, innovative, and transformational processes.	Supports the process of innovation within an organization and in its activities. Initiatives that are innovative are often in a state of continuous development and adaptation, and they frequently unfold in a changing and unpredictable environment.		Gamble, 2008. A Developmental Evaluation Primer
Participatory M&E Stakeholder Analysis Participatory rural appraisal Beneficiary assessment	Involves stakeholders at different levels working together to identify problems, collect and analyzanalyse information, and generate recommendations; seeks to shift the focus from upward to downward accountability. The intended beneficiaries of programmes themselves set the indicators for progress and success. They discuss and decide how a programme brought about change and whether it improved their lives. A PM&E process helps to ensure responsible and accountable aid. Participatory methods provide active involvement in decision making for those with a stake in a project, program, or strategy and generate a sense of ownership in monitoring and evaluation results and recommendations.	Examines relevant issues by involving key players in the design process; Establishes partnerships and local ownership of projects. Enhances local learning, management capacity, and skills; Provides timely, reliable information for management decision-making.	Sometimes regarded as less objective than surveys or quantitative analysis of program programme data. Time consuming if key stakeholders are involved in a meaningful way. Potential for domination and misuse by some stakeholders to further their own interests.	Participatory Methods Web site

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Tools/Methods/ Methodologies	Description: What is it?	Strengths/ Importance	Weaknesses/ Caution	Reference/ Further Reading
Performance indicators	Measures of inputs, processes, outputs, outcomes, and impacts for development projects, programmes, or strategies. When supported with sound data collection – perhaps involving formal surveys – analysis and reporting, indicators enable managers to track progress, demonstrate results, and take corrective action to improve service delivery. Participation of key stakeholders in defining indicators is important because they are then more likely to understand and use indicators for management decision-making.	Can be an effective means to measure progress toward objectives; it facilitates benchmarking comparisons between different organizational units, districts, and over time.	Use of poorly defined indicators as measures of success. Tendency to define too many indicators, or those without accessible data sources, making system costly, impractical, and likely to be underutilized. Often a trade-off between picking the optimal or desired indicators and having to accept the indicators which can be measured using existing data.	World Bank, 2004
Structured Interviews	An interview that uses data collection instruments to gather data, either by telephone or face to face; it is a structured interview, in which evaluators ask the same questions of numerous individuals or individuals representing numerous organizations in a precise manner, offering each interviewee the same set of possible responses.			World Bank, 2004
CD Results Framework (CDRF)	A guide to the strategic use and design of capacity development CD programmes, as well as practical instruments to strengthen the results-orientation of such programmes. A key feature of the CDRF is the perspective that learning can empower agents of change to improve socio- political, policy-related, and organizational factors that are key to the effectiveness of development efforts, and thereby enhance achievement of development goals.			
Rapid Results Approach (RRA)	RRA is a set of principles and methodologies for organizing and managing change efforts and for improving organizational performance. It can be applied together with the CDRF.			Otoo, Agapitova and Behrens, 2009. The Capacity Development Results Framework

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The 41 partners of the Tropical Agricultural Platform agreed to develop a Common Framework on Capacity Development for Agricultural Innovation Systems (CD for AIS). The objective of the TAP Common Framework is to harmonize and coordinate the different approaches to CD in support of agricultural innovation. Such harmonization would promote optimal use of the resources of different donors and technical cooperation agencies. The development and thus the validation of the Common Framework is supported by the Capacity Development for Agricultural Innovation Systems (CDAIS) project, funded by the European Commission (EC) and jointly implemented by the European agricultural research alliance AGRINATURA and the Food and Agriculture Organization of the United Nations (FAO). The present volume "Guidance Note on Operationalization" complements the volume "Conceptual Background". The "Synthesis Document", separately published for ease of consultation, summarizes the content of both volumes.