

# Innovation and development in agricultural and food systems

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## Chapter 8

# Designing and organizing support for collective innovation in agriculture

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### D

**Summary.** This chapter reports on the different functions fulfilled by existing mechanisms for supporting collective innovation in the agricultural and agrifood sectors in the countries of the Global South in order to identify the potential contributions the research community can make to strengthen them. The authors show that a variety of mechanisms are needed to create enabling conditions for innovation and to provide a step-by-step support to innovation communities, according to their capacities and learning needs. Researchers are encouraged to move beyond their traditional roles of knowledge producers or trainers and work more closely with actors involved in supporting innovation. They can then generate new knowledge about innovation mechanisms themselves, helping to design and organize the support for collective innovation in a variety of situations.

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In the context of developing countries where radical changes are needed in order to achieve sustainable development goals, supporting and accelerating collective innovation in the agricultural and agrifood sectors has become a central issue. However, even though innovation in agriculture has never been studied and understood as much as it is presently, there are still difficulties at the institutional and political levels to mobilize significant public or private investments to support innovation (Hall, 2007). Existing initiatives remain disparate, uncoordinated and low-key, and they have limited effects (TAP, 2016). Our research aims to characterize these initiatives and the support functions they fulfil in order to identify the possible contributions the research community can make to strengthen them.

Innovation is essence a risky activity, requiring the actors to engage in a process without knowing whether it will go to its term, and where the term will exactly be. The actors come upon problems and solutions along the way, according to a pattern described by Schön (1983) as a ‘conversation with the situation’ that responds to them, surprises them and forces them to learn new things. Supporting innovation is therefore a complex undertaking, as each situation is unique and the outcome uncertain. Rigid protocols have only limited application and may even be counterproductive. And yet, several such mechanisms exist today, such as innovation platforms presented as turnkey approaches.

We first present the evolution of the frameworks of thought concerning innovation support in agriculture, and the types of interventions that they have led to. We then offer an overview of the range of mechanisms for supporting innovation in order to draw lessons on the nature of research that could help to improve those mechanisms.

## 34. Evolution of frameworks of thought on providing support to innovation

Garel and Mock (2016) show that innovation requires collective action and an

organized environment. Two schools of thought are prominent in the field of innovation support for agricultural or rural development. The first believes in facilitation, which aims to create conditions that are conducive to innovation (Leeuwis and Aarts, 2011). The second focuses on strategic management, which involves bringing out and supervising a community of innovating actors, called innovation community, by providing support that is gradually adapted to each phase, starting from the phases for ideation and design to those for deployment and dissemination (Raven *et al.*, 2010).

### **34.1. Creating conditions conducive to innovation: the contributions of systemic thinking**

In the 1950s, innovation in agriculture was essentially thought of as a phenomenon of adoption and adaptation. Science was perceived as external to the socio-economic system, independent and neutral, and a source of innovation, whereas traditional knowledge was seen as a barrier to the spread of progress. In this linear model, support for change consisted of disseminating technological novelties through extension services, which mainly targeted farmers in order to train them in these new technologies. The best-known approaches included the technology transfer method, market-driven innovation, and the ‘training and visit’ system.

While this linear model of technology transfer did contribute to an increase in production and productivity in some regions of the world, it was nevertheless called into question in the late 1980s, following a paradigm shift from aid to development, advocating a participation-by-all approach, which is exemplified in the expression ‘Farmer First’ (Chambers *et al.*, 1989). Since the beneficiaries, their objectives and their environment had to be taken more into account, it became necessary to modify the methods of intervention. With more encompassing approaches being required, the discourse among researchers and development agencies gave rise to two new frameworks of thought: AKIS (Agricultural Knowledge and Information Systems) and AIS (Agricultural Innovation Systems) (Klerkx *et al.*, 2012). In both these frameworks, the interactive innovation model contrasts with the linear model. Innovation is thought of as a collective process of creation in which collective learning phenomena play a central role (Argyris and Schön, 1996). The farmer is no longer relegated to the role of a mere user, one who simply adopts innovation, but becomes a full actor in innovation in his own right, as a source of knowledge and a co-designer.

The AKIS framework focuses on the exchange of knowledge and information to sustain the innovation process. It is the actors of research and development, education, and agricultural advice who are at the heart of mechanisms for providing support to farmers. Participatory research methods involving farmers then followed, such as participatory research and development, participatory technology development, the Farmer First approach, or mechanisms for action research in partnership (Faure *et al.*, 2014, see also Chapter 9).

The AIS approach is intended to be even more inclusive; it takes into account all the actors who participate, directly or indirectly, in innovation processes (input suppliers, actors of supply chains, banks, policymakers, etc.). Participation, the co-creation of knowledge and value, as well as the facilitation of actor networks become the key principles for designing new mechanisms to accompany and support innovation. The main form of operationalization of this approach in the countries of the Global South

is the innovation platform (World Bank, 2008). Its goal is to help different categories of actors – who usually have no connection with each other – interact to share knowledge and to pool resources for innovation. Facilitation is defined as a voluntary intervention to strengthen the interactions between individuals, organizations and their social, cultural and political structures through a process of network building, social learning and negotiation (Leeuwis and Aarts, 2011).

Table 8.1 summarizes contributions systemic thinking has made in organizing support for innovation, highlighting the differences between the mechanisms that result from it, the targets of support (from the farmer to a network of multiple organizations), the intended changes (from technical change to individual or collective capacity building), the principles and methods used (from training and supervision to the facilitation of learning) and the professions of support (from the extension worker to the innovation facilitator).

Table 8.1. Contributions of systemic thinking to facilitate innovation in agriculture (adapted from World Bank, 2008, and from Hall, 2007).

Frameworks of thought	Agricultural research system	Agricultural Knowledge and Information System (AKIS)	Agricultural Innovation System (AIS)
Innovation model	Linear: A process that takes place in the isolated and controlled research environment	Interactive: A social process that originates from the complex interaction of various socio-economic actors	
Innovation mechanism	Technology transfer	Co-production of knowledge	Complex, systemic, at different levels and multi-dimensional (technical, organizational, methodological)
Vision of interactions between the actors concerned	Sequential interventions, from the researcher to the farmer	Involving actors who possess knowledge	Involving actors who possess the knowledge and who have power
Domains of research used for the design of support systems	Behavioural studies (on adoption)	Knowledge management Network analysis Agricultural advisory systems Farming system	Agency (1) of individuals and organizations Institutional entrepreneurship Adaptive management of complex systems
Popularized methods(2) for supporting innovation	Technology transfer Induced innovation 'Training and visit' system	Participatory research with farmers Participatory technology development, Farmer First Action research in partnership, participatory rural evaluation Field school, management advice for family farms	Innovation platforms Multi-actor networks Alliance for learning Agricultural advice forums
Principles of support	Helping a large number of farmers adopt new techniques	Helping farmers participate in research, training and advisory mechanisms, and express their needs, and adapting inventions	Facilitating interactions, knowledge exchange, coordination

		designed without their involvement	
Objects of the support	Product of the innovation	Users of the innovation	Actors who contribute to the innovation
Intended changes	Improving farm performance	Strengthening farmers' capacities and the functioning of farms Strengthening support and advisory services, and those disseminating knowledge in rural areas	Strengthening the capacity to innovate in all the actors and creating novelties in production systems, supply chains and territories
Professions of support	Technicians/extension workers of government services	Technicians/advisers from the private and public sectors	Facilitators of innovation

1. Ability to set goals and act in a consistent manner to achieve them.

2. Popularized methods are those that are labelled, i.e. they are the subject of a book or a methodological guide, have been used on a large scale in development projects, and involve the use of specific approaches and tools.

The systemic approach to innovation has been widely used by development workers and researchers (Touzard *et al.*, 2015) and has allowed the widening of the circle of actors to be considered to accompany innovation (from the farmer to the policymaker), but it is still very rarely mobilized to design national policies and interventions to support innovation (Chowdhury *et al.*, 2014). Interventions formulated in development projects or policy documents often suffer from a lack of operationalization; they are presented as vague principles of action (such as 'developing collective capacities to innovate'), leaving organizations that have to implement them with the responsibility of finding the right methodology to achieve the intended change (Raven *et al.*, 2010).

### **34.2. Managing innovation strategically: the contributions of theories of learning and of management**

Research on strategic management and learning is increasingly being used to reinforce the field of analysis of action in order to support the emergence and rise of innovation communities (TAP, 2016), and thus moderate the overly analytical knowledge generated by approaches centred on innovation systems.

The aim is to focus on actors in innovation situations and on their support needs, by recognizing that in the field of agricultural development, the actors are neither experienced nor trained in the collective design of innovation, nor are they used to working together towards a common goal. We define an innovation situation on the basis of the definition by Girin (2016) of the management situation. It involves, on the one hand, a community of actors undertaking activities, more or less coordinated, which contribute to developing the innovation and, on the other, physical, cognitive and relational resources that can be used to innovate. Each of these actors has a specific interest in the innovation being developed and their cooperation is guided by common goals. The complexity of an innovation situation can vary depending on the changes required at the individual and collective levels (changes in knowledge, attitudes, practices, rules) and the degree of uncertainty encountered.

As advocated by learning theories, developing individuals' innovation capacities must be the core of the accompaniment approaches being tried out. The capacity to innovate refers to the knowledge and skills a group needs to effectively use, master and improve existing resources, or create new ones, in order to innovate (Hall, 2005). It includes the ability to apprehend the situation and its environment, set goals, take risks, experiment and implement concerted actions, build relationships and alliances, and mobilize resources. It is a matter of both technical and functional capabilities (TAP, 2016).

The managerial perspective helps to establish principles of action and to create useful tools for accompaniment practitioners. By relying on the theories of adult learning (Kolb *et al.*, 2001), it becomes possible to determine which tools to use, given the types of learning that must be generated, whether they are simple or transformative, involving changes in knowledge, attitudes, practices, rules of action or values. The tools can be diverse and may consist of, for example, a dashboard, a computer model, a field visit, a participatory workshop, a monitoring committee, or a charter. They promote learning by guiding reflection, participating in the creation of a common language, or orienting action. Each tool must be seen as part of an intervention method that makes sense of the use of the tool.

Research about innovation management draws attention to the complexity of innovation situations, i.e. to the multiplicity of the critical drivers of innovation at different levels, individual, organizational and inter-organizational (or collective), so that action can be taken on them (Crossan and Apaydin, 2010). For example, we can compare two innovation situations: the adaptation of an agricultural technique to a particular agroecological context *vs* the creation of a new agricultural model based on agroecological principles (Figure 8.1). In the first case, individuals or organizations need primarily to incrementally modify their practices and strategies for action, without questioning the values that guide their actions. It is a matter of simple learning, which can be supervised or facilitated through experimentation or decision-making support. In the second case, in contrast, a change in the reference framework, i.e. a change of all the representations that result from the acquired experience and that guide future experience, is required. This type of learning, called 'transformative' (Mezirow, 1991), requires a different type of support, which focuses on the capacity to make sense of collective action (i.e. 'sensemaking' defined by Weick, 2001). Tools to automate the search for new ways of doing things can be used, such monitoring and evaluation tools, which foster reflective analysis and enable transformative learning within the innovation community. A high capacity to innovate will result from the ability to achieve and combine simple and transformative learning, while continuing to work and by adapting work routines (Argyris and Schön, 1996). It is such kinds of learning that will enable each individual to align better with others to achieve collective innovation (Brown *et al.*, 2004).

Figure 8.1 illustrates different innovation support approaches depending on the one hand, on the complexity of the innovation situation and thus the types of changes required and, on the other hand, on the capacity of actors to innovate. The support methods and tools to be used vary according to the four cases.

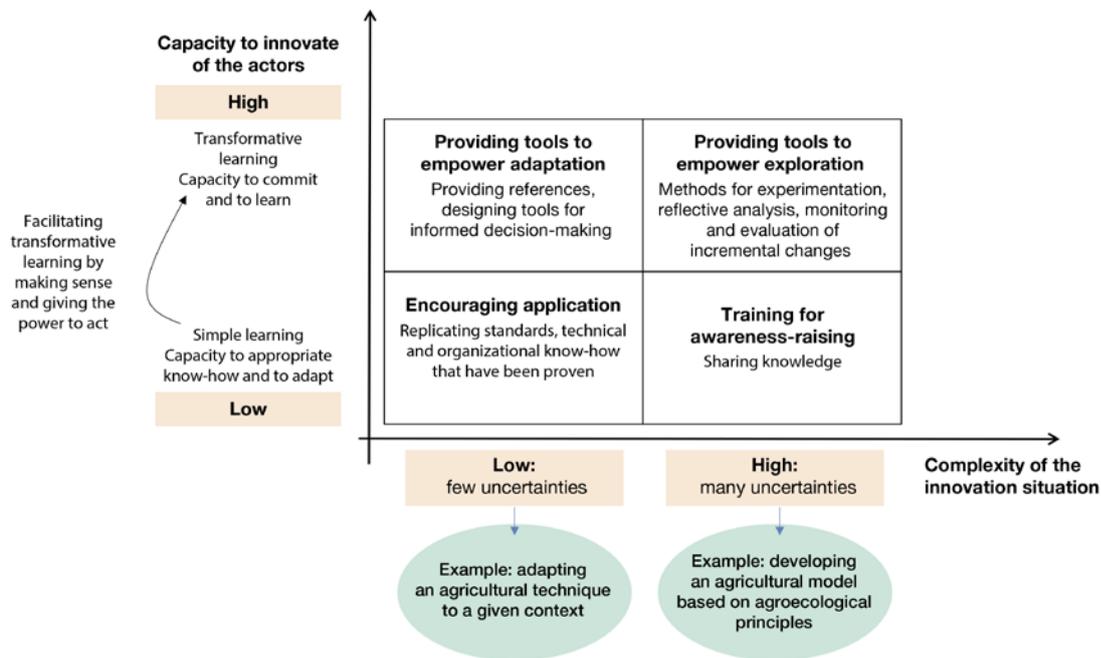


Figure 8.1. Examples of support activities during an innovation process, depending on the complexity of the innovation situation and the capacity of actors to innovate.

Dubois *et al.* (2016) show that managing the emergence of innovation communities is crucial in all innovation situations, especially for creating design spaces, organizing collective reflection and exchanges of ideas, identifying partners to involve, and monitoring collective activities. Furthermore, as the innovation community and the innovation itself progress, support needs evolve. The main challenge is to get the actors to understand the concepts to be explored, the knowledge to be acquired, the skills to be built up, and the actions to be carried out by a combination of planning and improvisation (Land *et al.*, 2009). There are a significant number of failures in the processes of accompaniment since such situations involving several actors are conducive to opportunistic behaviour and disengagement by individuals and organizations if their interests are not adequately addressed (Vall *et al.*, 2016). Strategic management must address these pitfalls, for example by accelerating certain phases of the innovation process (Cohendet *et al.*, 2008) or by establishing formal modes of cooperation between the various actors involved (Dhanaraj and Parkhe, 2006).

More specifically, the literature on innovation support allows us to distinguish two levels of intervention to design on and organize innovation support: the micro level of innovation situations and the macro level – sectoral, regional, or national depending on the context – in which they evolve. Innovation communities have specific support needs depending on the stages of the innovation process, the capacities of the actors involved and the complexity of the innovation situation.

### 35. Diversity of support mechanisms: their emergence and sustainability in the Global South

In this section, we illustrate the diversity of existing support mechanisms that play a role in accompanying innovation processes and examine their conditions of emergence and sustainability.

### 35.1. Styles and functions of support

We distinguish mechanisms based on the support functions that they fulfil with regards to innovation communities' needs, to the stages of the innovation process and according to the style of support (Table 8.2).

The style of support can be:

- supervised, i.e. intentionally led by support practitioners who manage one or more stages of the innovation process according to strategic management principles and with the aim of meeting identified learning needs;
- facilitated, through the creation of an enabling environment by helping networking and coordination between actors, access to various innovation support services or obtain funding

The identified support mechanisms fulfil four major functions:

- the emergence of innovation communities through the generation of collective ideas and by making actors willing to collaborate;
- the structuring of these communities by organizing collaborative work around a common project and with a common vision;
- the creation of technical partnerships with services for supporting innovation thus encouraging experimentation and the development of innovation;
- the creation of strategic partnerships to allow the scaling and the dissemination of innovation through replication or its promotion at a political level by creating relationships with key actors of change.

Table 8.2. Diversity of support mechanisms in the Global South, based on the style of support and the function performed.

Functions fulfilled by the support mechanism and examples of activities		Styles of support	
		Facilitated support	Supervised support
Helping innovation communities to emerge and develop	Communicating and raising awareness about inventions (solutions) or social issues (problems) Creating spaces for designing Stimulating the collective production of new ideas: exposure to new knowledge, confronting of paradoxes, exchanges between peers Organizing reflection and exchanges of ideas	Science and society forum (www.soscience.org) Third-party areas for experiments and meetings: spaces for coworking, FabLab Competitions and prizes for innovative projects conducted by pioneers	Action research in partnership co-design of innovations research teams Ways to support project scientific and technical transfer institutes or innovation centers
Structuring innovation communities	Promoting collaborative leadership Assisting with planning Encouraging organizations to look outside and encouraging participatory learning Providing methods and tools for exploration or use		Projects to build up the innovation capacity of actors Projects based on the participatory development of innovation Communication agencies for development, which will provide customized tools
Creating partnerships with innovation support services for	Helping formulate needs for support and funding	Technopoles, integrated development hubs	Business clusters in a region Process to support

experimentation and development	Helping identify donors and support service providers Organizing opportunities for meetings between supply and demand Creating mutual trust Helping the contractualization and formalization of partnerships	Innovation Fairs, B2B <sup>(1)</sup> , innovation market Science and society forum Crowdfunding systems	businesses/start-ups in in Multi-actor innovation p oriented towards research designing of innovation Customized support for innovative projects: serv provided by private agen associations
Creating mechanisms for exchanges and coordination for purposes of scaling	Identify the key actors of change Making them aware of the benefits of innovation Organizing opportunities for discussions and meetings with the proponents of the innovation	Roundtables for policies to facilitate the emergence of policies and standards for incentivizing innovation General public forum to publicize innovative experiences	Chain-specific innovatio platform to facilitate coo between actors Organization of agricult advice for training and publicizing innovative experiences

1. Business to business, i.e. commercial activities and marketing between companies.

Helping innovation communities to emerge and develop entails bringing together those who have the problems and those who have the solutions, organizing reflections and exchanges, providing tools and methods for generating collective ideas, and creating design spaces. These are activities that can be implemented by projects of action-research in partnership, by certain types of innovation platforms or by innovation centers led by private or public institutions (technical and research institutes). More recently, there has been an increase in new spaces dedicated to the sharing of new ideas and to exploratory learning, which are open to all public categories. Examples include coworking spaces or FabLabs, often initiated by civil society or the entrepreneurial sector.

The structuring of innovation communities must allow the community to function over time, so that new ideas can become innovation projects. Support activities can include the emergence and consolidation of leadership roles, planning or opening up of organizations for helping them to align their strategy. Support mechanisms of this type are still rare. They can sometimes be implemented by projects dedicated to capacity development.

The creation of technical partnerships with innovation support services facilitate the stages of experimentation and development, i.e. help formulate support and funding needs, and putting in contact with organizations that have suitable technical skills to design the innovation. Certain infrastructures, such as technopoles, business clusters, or events such as innovation fairs or markets, or, at a more virtual level, crowdfunding platforms, facilitate this linkage. Incubators, usually from private entities, offer tailor-made support services adapted to these types of needs.

The creation of strategic partnerships consists in identifying key actors of change, in political or economic spheres, to raise their awareness and mobilize them so that they can make available to the innovation communities the traditional support mechanisms for disseminating innovation, such as training in formal education systems and extension services. It is also a matter of mobilizing these actors to develop incentivizing regulatory frameworks.

Some mechanisms can perform multiple functions with no coordination with other types of mechanisms. For example, some innovation platforms tend to encompass all support functions without forging alliances with other complementary systems, such as incubators or existing advisory services. Thus, the incubation of innovative

agrifood companies might be complementary to innovation platforms that aimed at improving the organization of production and sale of agricultural products.

### **35.2. Actors and professions of support**

The different types of support mechanisms, as well as the nature of the innovations supported, are dependent on the kind of actors providing the support, i.e. whether from civil society, public services or private organizations.

Public or quasi-public mechanisms are mainly involved in the structuring and deployment of collective capacities for undertaking innovation at the territorial level; these include competitiveness clusters, technopoles, and technical and scientific training institutes. The State uses mechanisms that are usually part of a planned management of innovation by selecting the innovations deemed essential to meeting priority national challenges, such as food security, the fight against climate change, and the creation of new chains or new technologies (for example, genetically modified organisms, mechanization).

The private sector is increasingly positioning itself as a provider of customizable services, offering to support an innovation over time by responding to evolving support needs of innovation communities. Incubators for innovative businesses or for innovative collective projects in various supply chains and private agri-agencies specialized in organizing support programmes with relatively customizable toolboxes (for example, organization of events, creation of participatory videos) offer this form of support. Short- or medium-term value creation allows the funding of such services and thus determines the type of innovations supported, which generally consist of innovative products in value chains. These support services are expensive as the skills they provide require a high level of expertise.

Civil society is involved primarily in the emergence and structuring of innovation communities, and the innovations concerned are usually 'responsible' ones, in which ethics dominate. These innovations usually focus on solving environmental and societal problems by addressing the needs of the most disadvantaged populations. While the resources available are few, they are used to create mechanisms to connect various existing initiatives, such as advocacy, forums for exchanges and virtual networks.

The implementation of these various mechanisms for supporting innovation in the agricultural sector in developing countries requires the creation of new professions and, consequently, new reference standards for skills – which remain to be developed. For the moment, it is mainly agricultural technicians and agricultural advisers who are mobilized, because they are known to be capable of providing support to farms and rural development activities. However, these skills are not enough. For example, the Global Forum for Rural Advisory Services (GFRAS) is seeking to promote a new adviser profile that is more versatile and open to managing groups of actors (Sulaiman and Davis, 2012). But many challenges are yet to be met. While such an adviser can be responsive to farmers' innovations, he can also be perceived by farmers or by development project actors as being overly influenced by his technical background, which may drive him to orient innovation processes towards traditional themes, such as increasing production, and thus may fail to be sufficiently attentive to the needs of innovating actors. Moreover, retraining agricultural advisers is easier said than done, as vocational training courses are still scarce and often inadequate.

The professional profiles for facilitating collective innovation are, however, beginning to emerge, especially in the context of the implementation of innovation platforms, but they are still not very formalized. It is usually the consultants or service providers hired in development projects that take on this role and are trained on an *ad hoc* basis by the projects. While such an option has its advantages (knowledge and capacity to manage participatory processes, neutrality and goodwill, especially towards the marginalized actors), it also has its limitations (low legitimacy compared to the actors involved in innovation situations, which makes it difficult to arouse the necessary willingness and commitment). In the context of projects, the temporary status of a majority of the innovation facilitators does not favour the continuity and reproducibility of support mechanisms. They stop their activities at the end of projects and their know-how is neither transmitted nor made permanent within an organization that had gained some visibility in the field of support. Finding ways to anchor such processes or approaches, to obtain funding for them and to find the necessary skills represent new challenges that the research community will have to address.

### **36. Implications of research on supporting innovation in the Global South**

The research community currently assumes different roles in supporting innovation, depending not only on the complexity of the situation, the needs expressed by actors, and its own desire to accompany innovation, but also on its own capabilities. Toillier *et al.* (2017) identify several possible roles: entrepreneur, translator, or expert. In the role of an entrepreneur, the researcher mobilizes and engages the various actors around an innovation project that he is promoting, and helps set up mechanisms (including platforms, networks, partnerships) to manage the innovation situation over a long enough period of time for the innovation to emerge and succeed. In the role of a translator, the researcher is involved in defining the problem and the goals of the action, in the co-design of innovation and in the strategy to manage the innovation process. However, tasks and responsibilities are shared, and traditional and scientific knowledge are accorded equal importance. And finally, in the role of an expert, he provides the specific knowledge needed to design the innovation, without seeking to participate in its management.

However, researchers can also be excluded altogether from innovation situations. For example, many development support agencies make effective use of action research, action-training-research or farmer-based research methods, by making farmers and technicians assume the roles of researchers and knowledge producers.

New fields of research need to be opened up in order to promote the emergence of professions and mechanisms for supporting innovation. To begin with, it is necessary to conduct research at the same time in the fields of human and social sciences and management sciences on the transformation of traditional support and advisory services in agriculture, in view of the desire to involve them in mechanisms for supporting innovation. Considered in a broader sense, other issues also assume importance. Under what conditions can organizations acquire innovation support skills and offer sustainable services? What roles can public-private partnerships play in these new types of services and mechanisms so that they are able to support all types of innovations, even those that do not generate profits?

Furthermore, there is a lack of sufficient knowledge on supporting innovations and

this lacuna has to be addressed. Won't the cultural or organizational specificities in each country compel us to consider support in a particular way? How can different types of learning at the individual and organizational levels be combined in contexts in which actors do not know how to innovate together? Is an external actor always needed to facilitate or support an innovation process?

The coordination mechanisms of existing systems also need to be examined, depending on the innovation situations and innovation phases, so as to allow the creation of systems for accompanying innovation which cover all support needs.

Finally, it is a matter of producing new tools and approaches, together with the actors of support, in order to better respond to the diversity and complexity of innovation situations. This entails an operational production which, when it is part of an intervention research<sup>28</sup> approach, also helps produce new knowledge on the analysis of change and to carry out, with the actors, reflective analyses of support practices.

This kind of work applied in agricultural sector in the Global South, where available resources, values and ethical concerns are different from those in the Global North, remain rare, not only because of its novelty, but also because of the difficulties in accessing data, and in ensuring the acceptance of intervention research on the management itself of the innovation by being present when the innovation is being carried out.

### **37. Conclusion: towards pluralistic systems for supporting innovation**

The analysis of the evolution of thought frameworks shows that innovation support in the countries of the Global South has followed the evolution of development paradigms, which range from training farmers for technology transfers to facilitating exchanges within multi-actor innovation networks. The managerial perspective, enriched by contributions on processes of learning, makes it possible to put humans and individuals back at the centre: to support innovation is to support the actors of innovation, which implies taking interest in their abilities to learn, their progresses and their needs in order to adapt tools and support methods to the concerned stage of the innovation process.

The panorama of existing support mechanisms that we have painted is admittedly not exhaustive, but it does provide an insight into their diversity and can help identify gaps in systems for supporting innovation at the country or regional levels. On the one hand, some support functions along an innovation process are less developed than others. And on the other, certain functions cannot be fulfilled by the traditional actors of agricultural research and extension, making it necessary to involve new private sector entities, such as business incubators or communication agencies. This not only leads to a rethinking of the roles to be played by the private and public sectors, civil society and research entities in the provision of this support, but also of modalities of coordination between these plurality of actors in order to align services and the skills and tools to be mobilized for fulfilling each function.

The research community can contribute to a praxeology of the innovation support<sup>29</sup>

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<sup>28</sup> Intervention research aims to generate both practical knowledge useful for action, as well as more general theoretical knowledge (David, 2000).

<sup>29</sup> The aim is to produce a theory for supporting action: analysing the practices and their effects and, in turn, designing support mechanisms.

in agriculture by offering methods and tools that make it possible to reflect on and propose an organization of innovation support, and to develop the professions of support. The challenge is to produce knowledge on support processes themselves in order to help outline the modalities of collaboration between different organizations, create new types of support mechanisms, or mobilize various existing support mechanisms by showing the complementarities that exist between them for a given innovation situation. Theoretical frameworks remain to be built on the basis of field experiments with the actors of support, as well as on knowledge obtained from research on the management of innovation in other domains.

The chapters that follow illustrate the different roles that researchers can play in innovation (Chapter 9), the tools and approaches proposed by researchers for the design of agricultural innovation (Chapter 10), the evolution of agricultural advisory services in how they take the project of change and the farmers' capacity building needs into account (Chapter 11), and, finally, the support of multi-actor innovation by two different intervention methods (Chapter 12).

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