

Tools, principles or policies?

Agricultural innovation system capacity development

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One of the most notable changes in the field of agricultural development has been the growing popularity of thinking in terms of innovation systems rather than just focusing on research.

A persistent criticism of agricultural research, voiced by a whole generation of rural development practitioners and system thinkers, has been the unresponsiveness of research to the changing needs of clients. It has



also been observed that while research is good at developing new technologies, the adoption of these technologies has been weak.

Focusing on innovation rather than research shifts the emphasis to the application of knowledge and technology rather than just their production. Although there seems to be growing acceptance of this logic in the development research community, what seems to be less clear is how the idea of an innovation system can be translated into practice. The challenge in this is the highly context-specific nature of capacities that need to be developed. Researchers are now exploring a number of ways to nurture the development of these context-specific capacities.

Innovation systems

An innovation system is nothing other than a way to help understand how the process of innovation takes place, and to help think about how capacities for innovation can be developed. There is no recognised method or set of tools. A general definition is that an innovation system is made up of the individuals and organisations that demand and supply knowledge and technologies, as well as the policies and mechanisms that affect the way different agents interact to share, access and exchange knowledge. Based on this concept of an innovation system, what does innovation capacity entail?

First, innovation capacity entails more than technological artefacts, or the expertise and information within research organisations that are required to produce them, important though they are. The capacity for innovation also includes the process through which research-based knowledge and context-specific knowledge are combined for the development of solutions that actually work in a specific context. For example, crop pest management problems arise periodically and require combinations of research-based knowledge and local pest management knowledge that has been acquired from experiences of previous crop pest attacks.

Second, innovation capacity includes a system or network of multiple nodes of expertise. Users of new products and services, such as farmers and consumers, are prominent nodes in their own right. These systems are often informal, adaptive and transient, and are characterised by the context in which they emerge ? some countries and sectors are conducive to public/private sector partnerships or participation, some are not.

The emergence and operation of the networks of interaction that give rise to innovation are usually unplanned and spontaneous. However, if these processes could be strengthened, better linked to formal research and directed toward developmental goals, innovation and impact could be greatly enhanced.

Fodder innovation

A research project of the International Livestock Research Institute (ILRI) and the United Nations University (UNU-MERIT), Maastricht, the Netherlands, has been exploring whether the long-standing problem of fodder scarcity in India and Nigeria could be tackled by focusing on innovation capacity development rather than technology development. The Fodder Innovation Project (FIP), which draws inspiration from innovation systems ideas, aims to understand how to strengthen the networks and processes in different locations that lead to innovation, and what the outcomes of doing so might be. Key elements in the project include the following:

- Careful selection of partners to act as nodal catalysts for network strengthening.
- A diagnosis of existing patterns of innovation capacity, which was used to help develop action plans as well as form a baseline to track progress.
- The use of an action research approach to help cope with the uncertainty of the process of network strengthening.

- The provision of innovation mentoring or coaching to partners to help them make sense of how project activities were developing and to help redefine action plans.
- The establishment of an innovation policy working group in each of the two countries to help bridge the gap with policy-making processes.

Although the project is still in its early stages, some interesting lessons are emerging.

It is evident that a focus on innovation capacity constraints and the mapping of existing patterns of linkages among livestock-related actors quickly points to connections and relationships that need to be made or strengthened. But the project revealed that making those connections requires collaboration in action, rather than just the formation of new committees to talk about collective action.

For example, the Foundation for Ecological Security (FES) – FIP's partner in Rajasthan, India – began by asking people involved with various aspects of livestock how they could work together. But this only progressed beyond discussion when public and private sector veterinary services and dairies were invited to a 'cattle health camp' in some of the villages where FES was working. The success of the camp – largely due to effective on-the-spot collaboration among the various agencies concerned with livestock – has now led livestock keepers to demand other services, including access to new fodder grasses for rehabilitating degraded land. This, in turn, has drawn in a wider set of people who are planning new activities together.

The experience of this project also illustrates that dealing with fodder scarcity doesn't necessarily mean starting with fodder itself or fodder technology. In Kano, Nigeria, for example, the project is helping farmers to form cooperatives and to get access to credit, and this is providing the incentive to invest in fodder seed. And in Ibadan, Nigeria, the FIP partner – the Justice Development and Peace Commission (JDPC) – is using a transition from subsistence to commercial goat production to address fodder scarcity.

Capacity development through facilitating networks

In each project location, people – be they in government agencies, research institutes, dairy cooperatives or other private sector organisations – either have a mandate to improve farmers' livelihoods or need to help farmers as part of their business model. Getting these actors to work collectively and pool their knowledge and expertise requires the partner organisations to build interest and encourage effective networking. When asked what it is that they do, organisations like FES use words such as facilitating and negotiating. It seems that a large part of this concerns navigating the agendas and idiosyncrasies of different organisations and individuals, and brokering new working relationships among unfamiliar partners. This is not something they did explicitly before the fodder project, but they now see the value of doing so.

The FIP experience underscores that the role played by these champions or innovation brokers, as some have called them, is key to the development of innovation capacity. It has also highlighted the fact that in most rural areas there are currently no organisations or services playing this sort of role, although many organisations could be reoriented and supported to do so.

The project's experience has also shown that development can often take unexpected, yet valuable, directions. In Nigeria, it has led to a new and novel partnership between FIP's partner, JDPC, and the Nigerian Veterinary Research Institute on livestock disease surveillance research. Another FIP partner in Nigeria built links that enabled rapid reporting during an animal disease outbreak and a vaccination programme to prevent the spread of disease. In Puducherry, in southern India, experiments with the development of small-scale fodder enterprises soon revealed that the policy on milk prices was a major issue, and the focus of the research has now shifted.

In addition, from across the five research sites, it is evident that there is no single way to approach facilitating capacity for innovation. Each situation is unique. It is not about working with a fixed set of players, but having the ability to respond to the needs and challenges that emerge. Responding to the unexpected is also essential. For instance, Some of the most interesting fodder developments in Puducherry are occurring outside the defined area of research. A self-help group of landless women farmers has approached the local veterinary college to get advice on and access to fodder planting material. The challenge for the college, which is leading the research in the area, is to know what can be learned from these unexpected developments, and how it can support a promising initiative that might lead to the very outcome it is seeking.

This clearly places challenges on conventional project management frameworks. It suggests that future programmes focusing on innovation capacity development will need to have much broader goals than today's often subsector- or problem-oriented projects. More use will need to be made of formative reviews and dialogues with donors and other stakeholders to determine the desirability of different, broader sets of action.

Even at this early stage, the demand for technical research expertise has emerged. One of the Nigeria partners has been exploring ways of improving goat breeds and is looking for a research partner. The project predicts that as capacity for change is strengthened, and livestock production systems are upgraded, there will be an increased demand for knowledge, including from livestock research organisations. In other words, livestock research will become an embedded part of the capacity for innovation.

Generic principles for context-specific activities?

The fodder project has developed some broad principles that others can use to help facilitate capacity development. Focusing on strengthening innovation capacity is not a quick fix. It is often messy, unpredictable and iterative. Because it involves readjusting the roles and ways of working of many organisations, it takes a long time. And of course it is highly context specific. The approach piloted by FIP also seems to challenge many project management approaches where outcomes are predicted in advance.

The early evidence from the fodder project experience suggests that the best results are achieved if agricultural research and general development activities are well integrated. This is a challenge, as it is long-standing practice to separate them. Overcoming this separation requires fundamental changes in policy (such as the merger of agricultural research councils and rural development ministries) in order to introduce a well embedded and more responsive role for research, rather than new tools for collective action (such as innovation or multi-stakeholder platforms), which for

the most part already exist.

This might not be a very encouraging conclusion, but it does underline that a systems approach to capacity development can only fulfil its potential when all its principles are adhered to. Context specificity is one of the principles, but equally important is the need to recognise that rural innovation systems span rural activities as well as policy processes.

Further reading

- Hall, A. et al. (2008)
Reframing Technical Change: Livestock Fodder Scarcity Revisited as Innovation Capacity Scarcity, Parts 1?3. Working Paper Series 2008, 2?4, UNU-MERIT.
www.merit.unu.edu/publications
- Fodder Innovation Project (FIP):
www.fodderinnovation.org