

BUILDING CAPACITIES FOR INNOVATION MANAGEMENT  
IN EXTENSION AND ADVISORY SERVICES

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ABSTRACT

While the need for expanding the mandate of extension services is fairly well recognised, ways of operationalising the expanded vision have not been well articulated. This paper aims to provide insights on innovation management, which could be an important operational area for building capacity of extension and advisory services to deal with increasingly complex challenges. This paper builds on experiences from the Research Into Use programme in South Asia that tried to up-scale promising research outputs into wider use. The experience suggests that while facilitating access to technology is important in putting research into use, it has value only when it is bundled together with other innovation-management tasks such as: developing networks, organising producers,

communicating research needs, mediating conflicts, facilitating access to inputs and output services, convening innovation platforms, and advocating for policy change and other negotiated changes in practice and action. This has several implications for developing the capacity of extension and advisory services. First, the focus of capacity-building should shift from strengthening technical expertise to developing innovation-management expertise. Second, some of these skills and expertise can only be learned by actually doing them on the ground and therefore the approach to building capacity has to be designed in an action-research mode, involving experimentation, reflection and learning. Third, extension and advisory services need to be staffed with people with expertise in some of these tasks.

**KEY WORDS:** ACTION RESEARCH, FUNCTIONS, MEDIATING CONFLICTS, EXPERTISE, SOUTH ASIA

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## INTRODUCTION

Agricultural extension and rural advisory services are in transition worldwide. They are under pressure to reform their purpose and the way they are managed. The nature of the agricultural and rural sectors is changing, especially since the early 1990s, and this has led to demand for broader support from extension and advisory services. This means that extension needs to tackle a diverse set of objectives that include, but go beyond, transferring new technology. While the need for expanding the mandate of extension services is well recognised, ways of operationalising the expanded vision and building the needed capacities have not yet been well articulated. In this paper, I build on the experiences of the Research Into Use (RIU) programme in South Asia that tried to up-scale promising research outputs to wider use. I argue for an expanded role for extension and advisory services and the need for building capacities to perform this expanded role. I present a review of this expanded role of extension and the new capacities that are required. I then discuss the details of the RIU programme and the nature of the research undertaken to explore innovation management. Next, I discuss the key elements of innovation management witnessed in the programme. The implications of this case for building capacities for extension are discussed in the final section.

### **Building new capacities for extension: the current debate**

The nature of agriculture has been changing rapidly since the early 1990s. Declining availability of water and increasing degradation of soils have become two major issues confronting agricultural production. Though agricultural production and productivity have increased, poverty is widespread in many regions that are less favourable for agriculture. These have been largely by-passed by the introduction of improved technologies. There has been an increase in women's participation in the agricultural sector, either as self-employed or as agricultural wage workers. Opening of agricultural markets has further increased the vulnerability of poorer countries and small-scale farmers, who have weak bargaining power and limited political voice. Climate change, primarily due to global warming, has made agriculture more vulnerable to extreme weather events.

These new challenges also mean that extension needs to tackle a diversity of objectives that not only include, but also go beyond, transferring new technology. These encompass the need to: link farmers more effectively and responsively to domestic and international markets (Swanson and Rajalahti, 2010) where globalisation is increasing competition; reduce the vulnerability and enhance the voice of the rural poor (Berdegue and Escobar, 2001; Farrington *et al.*, 2002); promote environmental conservation (Alex *et al.*,

2002); view agriculture as part of a wider set of rural-development processes that include enterprise development and non-farm employment (Rivera *et al.*, 2001); couple technology transfer with other services relating to both input and output markets (Neuchâtel Group, 2002; APO, 2006); and enhance the capacity-development role for extension that includes training, but also strengthening innovation processes, building linkages between farmers and other agencies, and institutional and organisational development to support the bargaining position of farmers (Sulaiman and Hall, 2003). This broadly conceived notion of extension has been referred to as 'extension-plus' (Sulaiman and Hall, 2004).

Since the early 2000s, there has been an increasing realisation of the importance of tasks such as community mobilisation, conflict management, problem-solving, education and human development (van Beek, 1997), organisation-building, social learning and negotiation (Leeuwis and van den Ban, 2004) and the need for extension staff to acquire social-science skills to perform these tasks (van Beek, 1997; Farrington *et al.*, 1998; Sulaiman and van den Ban, 2000). Realisation of these tasks is key as most of the innovations needed in present-day agriculture have collective dimensions, i.e., they require new forms of interaction, organisation and agreement among multiple actors (Leeuwis and van den Ban, 2004). However, playing this wider



role requires large-scale restructuring and institutional change, which the extension bureaucracies have been reluctant to undertake. Reinforcing this reluctance is an extension-policy dialogue that continues to be couched in terms of a narrow conceptualisation of extension as an agency for transferring technology and improved practices from research stations to farmers (Sulaiman and Hall, 2005).

The number and types of such organisations supporting farmers with information, inputs and services have increased during the last two decades. Many of them are private agencies, which, while not always formally identified as extension services, still provide advisory and other support services to farmers. These include: input agencies, farmer organisations, producer co-operatives, agro-processors, non-governmental organisations (NGOs), agri-business houses, progressive farmers, individual consultants and consultancy firms, financial institutions, and media and internet services. As extension needs a wider range of skills to address the increasingly complex agenda, it needs to partner with these actors who can bring various skills and expertise.

‘Pluralistic extension relies on changing the rules of the game and strengthening the capacity of actors to understand and take advantage of these new rules through better co-ordination and contextualization’ (Christoplos, 2010). What is important is the nature and quality of the

relationship which has to be reflected in more joint activities. The current ‘institutions’ in extension favour independence and not interdependence. Moreover, partnership is a skill that can be perfected only through practice and therefore extension has to consciously interact more closely with other actors to develop partnership arrangements. ‘Creating and fostering effective coalition among actors is often hindered by incomplete information about what potential partners can offer, by different incentive systems for public and private actors, differences between indigenous and formal knowledge, social differences that cause exclusion of certain actors, or ideological differences’ (Pant and Hambly-Odame, 2006). These barriers indicate the importance of having a player who acts as an innovation broker, connecting people and enabling effective communication for innovation.

In the old way of thinking, agricultural innovation was a task related to the production of ideas by research, the supply of these by extension to farmers, and their consequent use. The role of extension was about making sure that farmers were aware of new ideas developed by research, in other words to communicate innovation. Today, innovation is increasingly recognised as a process by which new knowledge is generated, diffused, adapted and used to effect social and economic change. This process requires interaction and knowledge flows among multiple actors (Hall *et al.*,

2004; Hall, 2009). Communication can play a major role in supporting the three essential processes of innovation: *network-building, supporting social learning and dealing with dynamics of power and conflict* (Klerkx and Leeuwis, 2008). These wider tasks are referred to under various names: some call it ‘boundary work’ (Kristjanson *et al.*, 2009); others refer to it as ‘intermediation’ (Howells, 2006; Klerkx and Leeuwis, 2008); more recently, the term ‘innovation brokers’ has been used (Klerkx and Leeuwis, 2009). It is important to stress that the old innovation management tasks of providing access to technology are not superseded by these new tasks. Rather, these old tasks only have usefulness as part of a wider set of tasks that allow innovation to take place. For the question of how to put research into use for innovation, understanding what these wider sets of tasks are, how they should be operationalised and by whom, becomes critical.

### **RESEARCH INTO USE (RIU) PROGRAMME**

Commissioned by the UK Department for International Development (DFID) in 2006, the RIU programme had two purposes. First, to get the best research results from past DFID-supported research into widespread use in Africa and South Asia. Second, to draw lessons on the process of putting research into use; in other words, to tease out when and under what circumstances and



settings, a range of different approaches become more or less useful in making the best use of agricultural research as a policy instrument for development. The programme emphasised the use of an ‘innovation systems’ approach in its call for proposals. This was primarily understood in the programme as an approach that gave importance to partnerships and networking among a wide range of actors for horizontal and vertical scaling-up and use of research results. Table 1 provides the details of the research results that were put to use in the RIU in Asia. The programme received 123 concept notes and finally selected 13 projects. These were referred to as the Asia Innovation Challenge Fund (ICF) projects. Started in July 2008, these were modest scale projects (budgets in the range of £150,000–500,000 over 3 years), building on earlier research by members of project teams with the logic that a final ‘into use’ phase would address the impact-at-scale objective of RIU.

Based on a review, two projects were dropped in 2009, reducing the project portfolio to 11. Following this review and the subsequent appointment of a Central Research Team (CRT), of which I was a member, the remaining 11 projects were clustered for lesson-learning purposes along the following lines: participatory crop-improvement innovation; innovation in value chains; innovation in natural resource management, and others (more details on the projects are provided by Sulaiman *et al.*, 2010; Reddy *et al.*, 2011). At the time that the

projects were conceived, the narrative of the programme was about putting research findings into wider use. So, despite programme rhetoric about systems of innovation ‘approaches’, projects found it necessary to present themselves as having rather archaic technology-transfer logic. However, the projects explicitly presented a range of novel ways to operationalise the technology-transfer hypothesis. For example, setting up seed companies, training community-based groups, linking up new value chains. However, the CRT’s subsequent description and analysis of the projects revealed that the project teams (even in pre-RIU activities) had been using quite sophisticated innovation management strategies that included, but went beyond, partnership. Some of this involved brokering and maintaining partnerships and relationships – not just in operational field domains, but also in policy and institutional domains. Some of the projects clearly knew about many of these innovation management tasks from earlier experience, while others had to learn them along the way.

### **Innovation management**

Our earlier discussion predicted a large range of tasks involved in promoting innovation. The RIU project portfolio in Asia demonstrated many of these. It also revealed the wide range of functions, activities and tools that are critical for enabling innovation, which is collectively referred to as

‘innovation management tasks’ (Sulaiman *et al.*, 2010). These are summarised in Table 2.

The projects do not just use one function or one action, but rather cluster them. The existence of a range of sophisticated strategies to manage innovation means that this has not happened overnight. It has been a pragmatic response to dealing with the goals of the various organisations involved. The main thing that stands out is the range of intermediary organisations that have taken a lead in undertaking or organising some of these tasks. Certain kinds of organisations have a comparative advantage in leading and undertaking some types of tasks. Such organisations have been classified as ‘innovation brokers’ (Leeuwis and van Den Ban, 2004; Klerkx and Leeuwis, 2009). For instance, a project promoting institutional and governance innovation in community forest management in Nepal required leadership by a policy think-tank, Forest Action, which spanned grass roots initiatives and policy advocacy. In contrast, another project in Nepal, which focused on strengthening the relationships among various actors in a value chain, required leadership from an organisation with expertise in marketing systems. While researchers led many of the previous initiatives that focused on the generation of new technologies and approaches, they played a secondary or supporting role in most of the RIU projects. This is because innovation management requires a different and broader set



**TABLE 1. RESEARCH PRODUCTS INTENDED TO BE PUT INTO USE IN THE RIU SOUTH ASIA PROJECTS AND THE UNDERLYING ASSUMPTIONS**

Types of RNRRS research products intended to be put into use	Implementation Hypothesis/assumptions
<b>Technological artefacts</b>	
Improved seeds of rice and legumes developed through participatory crop improvement (PCI)	Subsidised mass production and distribution of seeds and its promotion through NGOs and community seed producers; subsequently, establishing seed companies under NGOs
GIFT (genetically improved fish tilapia) and production of fish fingerlings in rice fields	Establishing a new value chain and linking actors in this chain
Ecologically based rodent management	Local NGOs can train communities and companies can be encouraged to manufacture rat traps
Technologies for coastal fisheries (crab fattening, mollusc culture, seaweed culture, improved fish icing, improved fish drying)	Training and establishing enterprise groups by NGOs will connect fishing communities to markets and facilitate technology adoption
Production and processing technologies in under-utilised crops	Organise crop fairs and establish germplasm orchards and food processing parks at the community level to establish new value chains
Multi-product silvicultural practices, improved harvesting techniques of medicinal plants	Training communities on harvesting and value addition and linking them to market intermediaries and manufacturers of herbal products
<b>Process/approach</b>	
Participatory action plan development; adaptive co-management and learning approach-joint reflections	Training community-based organisations and brokering their links with technical, legal and policy expertise
Improved and democratic governance in community forest user groups	Training community forest user groups for local level institutional development and using this evidence to influence macro policy
Integrated delivery of services, mainly micro-credit and improved access to inputs and technical advice	Institutional development at the community level and brokering linkages to financial services and input agencies will create a demand pull for drawing new technical knowledge
Participatory market chain analysis	Linking the existing actors in the value chain

of expertise which is not normally available in research and extension organisations.

This review of RIU projects highlights that while facilitating access to technology is important in

putting research into use as one of a range of innovation management tasks, it only has value when it is bundled together with other supportive tasks (access to markets, convening consortia,

etc.). This has an important implication for policy. It means that putting research into use requires projects, organisations or initiatives whose chief characteristic is not primarily as a conduit for technology, but rather is one of being able to undertake a much wider range of innovation management tasks.

## **BUILDING CAPACITIES FOR INNOVATION MANAGEMENT**

Capacity-development implies facilitating an entity to achieve improved performance. This often means helping different actors within an organisation or across organisations to change and or improve their interactions in order to bring about the desired changes. Capacity-development is a fundamental bottleneck to effective extension and advisory services, given the new global and local challenges facing rural development. Building capacities for innovation management in extension and advisory services would, to a large extent, allow extension and advisory services to respond better to this changing environment. To build this capacity, three aspects need to be considered.

First, the focus of capacity-building should shift from strengthening technical expertise to developing innovation management expertise. Capacity-building within the context of extension is often understood as enhancing technical capacity of extension personnel to deal with current and emerging technological bottlenecks in the field.



**TABLE 2. INNOVATION MANAGEMENT TASKS OBSERVED IN THE RIU ASIA PROJECTS**

Functions	Actions	Tools
Networking and partnership building	Convening	Grain cash seed bank
Setting up/strengthening user groups	Brokering	Community-based seed producer groups
Training	Facilitating	Community-based user groups
Advocacy for institutional and policy change	Coaching	Producer companies
Enhance access to technology, expertise, markets, credit and inputs	Advocating	NGO-led private companies
Reflective learning	Information	Market chain analysis
	Dissemination	Market planning committees
		Community germplasm orchards
		Village crop fairs
		Food processing parks
		Use of lead entrepreneurs

This is often achieved through training in and demonstration of new technologies and training in communication skills. As technology dissemination is only one element of innovation management, the focus of capacity-building within extension and advisory services should move towards building capacity in other functions and activities that are critical for applying new knowledge.

Second, skills and expertise in some of these areas can only be learned by actually doing them on the ground and therefore the approach to building capacity must be designed in an action-research mode, involving experimentation, reflection and learning. Developing new platforms for interaction by various actors (e.g., stakeholder dialogues) and promoting joint interventions by coalitions of different actors are two important

means of developing this capacity. Creating a platform to share successes, mistakes and failures and reflect upon them is essential. Developing better habits and practices that promote wider interaction and learning is perhaps the greatest challenge for building capacity in extension organisations.

Third, extension and advisory services must be staffed with people with expertise in some of these tasks. While partnering with other organisations to access diverse skills and expertise will continue to remain important, extension should have a core group of specialists with some of these skills to technically backstop extension personnel.

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