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**SOUTH ASIA RURAL INNOVATION CAPACITY  
BENCHMARKING WORKSHOP – A REPORT**

August 19-20, 2009

**The Workshop Team**



**CENTRE FOR POLICY RESEARCH**

Dharma Marg, Chanakyapuri  
New Delhi-110021

April 2011

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*Sponsored by:*



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## LIST OF ACRONYMS

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<b>AEC</b>	Agro-Enterprise Centre
<b>AMFPL</b>	Artisans Micro Finance Private limited
<b>BINA</b>	Bangladesh Institute of Nuclear Agriculture
<b>BRRRI</b>	Bangladesh Rice Research Institute
<b>CGIAR</b>	Consultative Group on International Agricultural Research
<b>CEAPRED</b>	Centre for Environmental and Agricultural Policy Research and Development
<b>CPR</b>	Centre for Policy Research
<b>CRISP</b>	Centre for Research on Innovation and Science Policy
<b>CTD</b>	Centre for Technology and Development
<b>DAMA</b>	Dastkar Andhra Marketing Association
<b>DANIDA</b>	Danish International Development Agency
<b>DFTQC</b>	Department of Food Technology and Quality Control
<b>FDD</b>	Fruit Development Directorate
<b>HORDI</b>	Horticultural Research and Development Institute
<b>IDRC</b>	International Development Research Centre
<b>IFPRI</b>	International Food Policy Research Institute
<b>LINK</b>	Learning Innovation Knowledge initiative
<b>NGO</b>	Non Governmental Organisation
<b>NID</b>	National Institute of Design

<b>OECD</b>	Organization for Economic Co-operation and Development
<b>OVOP</b>	One Village One Product programme
<b>PMD R&amp;D</b>	Post-Harvest Management Directorate Research and Development
<b>S&amp;T</b>	Science and Technology
<b>SMCL</b>	Sindhuwa Multipurpose Cooperative Ltd
<b>UK</b>	United Kingdom
<b>UNU-MERIT</b>	United Nations University Maastricht Economic and social Research and training centre on Innovation and Technology
<b>WBI</b>	World Bank Institute

## EXECUTIVE SUMMARY

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The South Asia Rural Innovation Capacity Benchmarking Workshop was organised by the Centre for Policy Research (CPR) and the Centre for Research on Innovation and Science Policy (CRISP) together with the LINK initiative (Learning, Innovation, Knowledge) and held in New Delhi on August 19-20, 2009. The event was sponsored by Canada's International Developmental Research Center (IDRC) and UNU-MERIT. The workshop brought together senior officials within S&T organisations in the region engaged in science, technology and innovation planning, and academics/ researchers/ practitioners involved in rural innovation in South Asian countries as well as Peru and the UK.

This workshop was designed as a policy dialogue – with S&T policymakers and rural development practitioners – on the implications for capacity benchmarking if South Asian countries wanted to move from science and technology policy to a broader innovation policy with the specific goals of rural development. The goal was to identify approaches and priorities relevant to undertaking rural innovation benchmarking exercises.

This report presents the converging views of the workshop participants and puts forward the concerns raised and suggestions made during the ensuing policy dialogue.

The workshop sought to provide opportunities for dialogue and learning for planners and policymakers in developing countries in South Asia on how to strengthen innovation capacity in ways that address social, economic and sustainability agendas. The ultimate goal was to discuss how to benchmark national capacity to innovate so as to provide points of reference to help planners make judgments about progress in improving national and sectoral performance and help guide and monitor the impact of policy and institutional changes.

The overarching question guiding the workshop proceedings was: “How do we understand and track the diversity of innovation activity around us?” (to better inform and initiate appropriate policy support).

To set the scene for the meeting, case studies from six South Asian countries (Nepal, Bangladesh, Sri Lanka, Pakistan, Bhutan and India) were commissioned, focusing on one selected rural sector. Paper writers had been provided certain guidelines to help them prepare the case studies in order to highlight patterns of innovation activity. The cases were required to provide illustrations of

both historical “below the radar” innovations — i.e., products, services and innovation approaches that have emerged at the margins and which have become mainstream; and emerging “below the radar” innovations — i.e., promising products, services and innovation approaches, which are different from what went before and which could have wider development significance.

The primary aim of using these case studies was to understand and analyse:

- The nature of innovation process
- How these innovations emerge
- Who the main players are
- How innovations move from the margins to the mainstream
- The role of the supporting policy environment
- What it means for recognising the different innovation trajectories
- What it means for public policy
- How this capacity can be benchmarked in order to direct policy support more meaningfully

The S&T policymakers and rural development practitioners attending the workshop were then asked to use the case studies to guide discussions around the following questions:

### **1. Why are we benchmarking?**

What is the gap that benchmarking-like activity should fill? Is it for policymakers, practitioners, donors or for everybody? Taking into account the gap that it is trying to fill what should be the balance between measuring innovation activity, learning lessons about innovation (for both policy and practice) and generating dialogue and building links between actors involved in innovation (including policymakers)?

### **2. Who should lead benchmarking?**

Given that much innovation is invisible and that visible innovation already has strong links to policy, who should convene benchmarking? How can capture of benchmarking (by vested interests) be avoided? Who could be an honest broker? Who should participate in benchmarking exercises? How can multilayer and multipurpose objectives be achieved?

### **3. How to make the invisible visible?**

How can we generate narratives of invisible innovation activity and capacity? How can we generate dialogues around these invisible innovation narratives? How can we blend visible and invisible innovation narratives in policy and practice learning?

#### **4. What are the organising themes for benchmarking?**

How can we delineate the benchmarking exercise? Should it be at the sector level (i.e., all that is rural) or should it be on commodities? Can it be around value chains, or new themes such as bottom-of-the-pyramid innovation? What about enterprise clusters? Or should the organising theme be a mixed suite of all of the above?

#### **Conclusions and Ways Forward:**

The workshop was just the first step at understanding the challenges that lie before us in developing ways and tools to benchmark rural innovation capacity. Our goal as organisers wasn't to come up with a one-size-fits-all solution. Rather, the workshop raised more issues and questions for policymakers and development practitioners to address. However, based on the discussions that followed the country case study presentations, we can make the following general points and recommendations for the next step in the process:

- 1.** Benchmarking rural innovation capacity is a concept that is still in infancy and its application requires flexibility and learning. No current blueprint exists.
- 2.** Innovation tends to emerge from network-like arrangements and linkages within an innovation system. These linkages can be fluid and constantly changing. Benchmarking could be one way to assess the strength of these linkages and improve them.
- 3.** Benchmarking innovation capacity can help identify policy gaps, select intervention points and track progress. Through the sharing of ideas and as a starting point for dialogue, it can be much more than just a way of describing the innovation experience. Rather, benchmarking capacity could be one way of ensuring that policy comes to grips with ways of enhancing that very capacity for innovation, and direct support more meaningfully.
- 4.** Innovation performance is no longer the existence of technological artifacts or the expertise to produce these. Rather its signature is a process which is fit for the purpose of mobilising different pieces of information to resolve a changing series of challenges and opportunities. This means it is an adaptive process where learning plays a large role. Benchmarking innovation then must necessarily be a learning tool.
- 5.** Emerging innovation is rarely the result of public policy intervention or of initiatives of international development organisations. Increasingly, innovation is observed at the margins, “under the radar” of public policy of formal research organisations. These “below the radar” innovations are important not just because of the specific new product or

service that they lead to and the developmental impact these may have. They are also important because they represent new forms of innovation capacity that may have wider development significance. In other words, these are new, contemporary modes of innovation that public policy needs to learn about and learn how to nurture.

6. The next phase could be a consultation and discussion phase, perhaps by facilitating multistakeholder platforms that support the identification and planning of activities, including the assessment and analysis of existing attempts at benchmarking.
7. We need to generate more case studies in order to identify instances of innovation activity, come up with detailed narratives of the process involved, and share lessons learnt. In other words, innovation often emerges from the way in which individuals and organisations work rather than the goals they work toward. Case studies, then, can provide the basis for a dialogue regardless of the context and location specificity of the innovation activity itself.
8. To take this process forward, it would be more useful to organize similar workshops on benchmarking innovation capacity at the national level, where evidence from such case studies are presented to practitioners and policy makers. This can potentially create interest and opportunities for initiating benchmarking exercises at the national level.
9. At some point the talk has to result in some sort of action. One suggestion is to actually initiate a benchmarking exercise around some innovation activity – *learning by doing*
10. More dialogue need not necessarily be in the form of regional workshops. A wide variety of communication tools are at our disposal, including perhaps an online forum in which different actors in the innovation process can share lessons learnt from their own experiences and receive inputs from others.

# INTRODUCTION

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If innovation activity remains largely invisible in the economy, how would you go about benchmarking it? How can policy take note of innovation (mainly invisible, but even visible) and how can it support it? Why are we even benchmarking in the first place, and when we do so, who should lead such an exercise?

These were just some of the key questions emerging from discussions on benchmarking rural innovation capacity during a workshop organised by the Centre for Policy Research (CPR) and the Centre for Research on Innovation and Science Policy (CRISP) together with the LINK initiative (Learning, Innovation, Knowledge) in New Delhi on August 19-20, 2009. The event was sponsored by Canada's International Developmental Research Center (IDRC) and UNU-MERIT. The workshop brought together senior officials within S&T organisations in the region engaged in science, technology and innovation planning, and academics/ researchers/ practitioners involved in rural innovation in South Asian countries as well as Peru and the United Kingdom.

The workshop was designed as a policy dialogue — with S&T policymakers and rural development practitioners — on the implications for capacity benchmarking if South Asian countries wanted to move from science and technology policy to a broader innovation policy with the specific goals of rural development. The goal was to identify approaches and priorities relevant to undertaking rural innovation benchmarking exercises. The overarching question guiding the workshop proceedings was: “How do we understand and track the diversity of innovation activity around us?” (in order to inform and initiate appropriate policy support).

Drawing on case studies (see Appendix 1) from six South Asian countries — where policy has largely ignored/ been oblivious to the kind of innovation activity taking place, or, in some cases, has provided insufficient support — participants at the workshop found common ground in the idea that innovation capacity needed to be benchmarked to help guide and monitor the impact of policy and institutional changes. However, given the wide-ranging views on the very purpose of benchmarking — from measuring innovation activity, learning lessons about innovation (for both policy and practice) and generating dialogue and building links between actors involved in innovation (including policymakers) — there was also consensus among participants that the workshop was just a start into what we hope will be an ongoing dialogue.

## BACKGROUND AND CONTEXT

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The idea that innovation, including rural and agricultural innovation, is rarely the result of research-driven technology or even public policy interventions designed to foster change and economic growth is one that is quickly and surely gaining momentum in the development agenda. This is not to deny the importance of both new technology and supportive policy regimes. While they are both valuable, the conditions that lead to innovation are often unplanned, serendipitous, contextual and path-dependent — and therefore, almost necessarily, location-specific. Indeed, it is this contextual nature of innovation activity that sometimes makes it invisible to policy.

Thus, while rural and agricultural innovation can be an outcome of research, more often than not it is a social process that results from the resourcefulness of farmers, private entrepreneurs and development practitioners to generate new ideas and continuously adapt existing ones according to their immediate needs. These ‘innovators’ tend to be part of informal networks that are used to gather different ideas and expertise and use them in novel ways. These networks can be transient and emerge around specific tasks and challenges and at particular points in time. Furthermore the existence, characteristics and strength of these networks is highly dependant on the social conditions and traditions in a particular location or sector.

The innovation process itself doesn’t follow a fixed track; the processes that result in innovation are almost always non-linear, and therefore fraught with the unpredictability that results from challenges, opportunities and successes that emerge in unforeseen ways and in unexpected places. It is no longer useful to believe that there is one way to understand and organise innovation, but rather an ever-expanding repertoire of approaches.

The emerging understanding of rural innovation is also leading to reconsiderations of what ‘capacity’ might mean in this context. Innovation capacity is a relatively new idea. It no longer appears appropriate to define capacity solely as scientific and technical expertise; rather, it implies the ability to meaningfully participate in joint learning processes (articulating challenges, objectives, interests, expertise and motivations; finding means of making them compatible; and collectively addressing them) that characterise innovation.

All of this raises intriguing questions, but also presents before us a seemingly insurmountable challenge: Considering the unpredictable nature of innovation, how does public policy go about planning for it?

Given the context-specific and location-specific nature of the conditions that give rise to innovation, how do we ensure that policy even recognises it for what it is? Networking and linking up are important for innovation, no doubt. And continuous learning along the way is crucial to building the innovation capacity to collaborate and innovate better in the future. But how do we go about assessing rural innovation capacity and the patterns of linkages that it emerges from in order to direct policy support more meaningfully? How do we also begin to identify the characteristics of the policy regime and institutional environment that nurture innovation?

The challenge for public policy is therefore two-fold. Firstly, it has to find ways to be alert to emerging innovation practices that, by definition are invisible to most mainstream thinking and sources of information that policy draws upon. Secondly, it has to find ways to provide the nurturing environment that can move these new products and services and new innovation capacities from the margins to the mainstream and in doing so accelerate the learning process through which innovation capacity is enhanced. An implication of this is that public policy needs to shift from an orchestration role in which it sets the conditions from which innovation will emerge, to a more reactive role where it supports new patterns of innovation behavior.

Benchmarking is a tool that can help identify gaps, select intervention points and track progress. Through the sharing of ideas and as a starting point for dialogue, it can be much more than just a way of describing the innovation experience. Rather, benchmarking capacity could be one way of ensuring that policy comes to grips with ways of enhancing that very capacity for innovation, and direct support more meaningfully.

## **What is Benchmarking?**

Benchmarking broadly refers to the comparing and assessing of performance. A concept that owes much to the management and business development literature, benchmarking has been used to compare the performance of organisations, sectors, countries and regions, and is considered a valuable tool to identify gaps and trajectories for innovation. In this context, it always involves some sort of systematic comparison of one organisation's outcomes or processes with either some other organisation or against some accepted standard. Not to be confused with performance measurement, which seeks to assess how a particular programme or organisation operates, benchmarking is more of a comparative exercise that assesses performance in relation to the best in class. It has been described as a process of "borrowing shamelessly." As Lundvall and Tomlinson<sup>1</sup> put it:

"Benchmarking is thus basically about comparing one company's performance with another who is consider one of the best, if not the best in the field. A learning process takes place whereby the benchmarking company can adjust its behaviour based on observation of the benchmarked company

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<sup>1</sup> Lundvall, B. and Tomlinson, M. (2002). "International Benchmarking as a Policy Learning Tool". In Maria João Rodrigues's (Ed.) *The New Knowledge Economy in Europe: A Strategy for International Competitiveness and Social Cohesion*. Edward Elgar Publishing Ltd.: UK.

and thus improve its efficiency. Crucially, data are generated that can be compared between organisations.”

Benchmarking is classically used to compare current progress either against historical measures or against that achieved by other countries. These measures have traditionally been centred around outcome indicators (new patterns, processes and products) and input indicators (particularly investments and in R&D). This has helped policy judge the effectiveness of measures it has in place and adjust these according to their effectiveness.

From its early definitions in the 1990s<sup>2</sup> (as a tool to observe organisational routines and compare performance with superior units at the level of resource use, efficiency, and effectiveness — in other words, the search for industry best practices that lead to enhanced performance), benchmarking in the management literature has evolved (see Lundvall and Tomlinson, 2002) to an understanding of it as a tool to promote the formation of learning organisations. In this view, the basic process of comparing your own way of doing things with that of others is one way of stimulating reflection — a key element of the learning process.

### **The Need for Benchmarking Rural Innovation Capacity**

The definition of benchmarking in the management literature may have evolved to that of a *learning process* rather than just a simplistic listing of performance ‘benchmarks’ to measure up to, but the end goal is still that of bettering performance and the continuous improvement of quality. Clearly, our understanding of benchmarking rural innovation capacity needs to be more nuanced. Supporting rural innovation is not just about fixing today’s problems, but strengthening innovation capacity for the long-term.

Any attempt to benchmark rural innovation capacity needs to recognise the following points, which have already been articulated in the previous pages:

- Development is not a race along a fixed track; there are multiple features to development that are contextual and path-dependent
- Technology development and innovation are not cumulative unidirectional processes; innovation involves the creative use of all knowledge available for problem-solving
- Achieving one goal does not necessarily lead to development; sustainable development requires systemic behaviour, which in turn results from coordinated efforts by multiple actors
- Innovative solutions do not result only from technology transfers; learning is at the centre of innovation

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<sup>2</sup> Bogan and English (1994). “Benchmarking for Best Practices“. In Robert L. Craig’s (Ed.) *The ASTD Training and Development Handbook: A Guide to Human Resource Development*. McGraw Hill: New York.

- The capability to learn does not happen automatically or spontaneously; learning requires effort. These capabilities are hard to build, to maintain and to enhance everywhere, but particularly so in rural communities

There is now a large body of evidence to suggest that successful organisations, programmes, sectors and countries go through a process of trial and error before they learn how to mobilise ideas and technology for innovation in order to respond to emerging opportunities and challenges. In other words, the capacity to innovate is something that continues to be refined and redefined – and that those involved in the process of refining and redefining are actors in the innovation process itself, rather than policymakers setting framework conditions.

In the earlier era when innovation was equated with technology development and capacity was understood to be research capacity, policy prescriptions could simply focus on ensuring that sufficient resources were allocated to research and, in the same way, innovation performance could be tracked through indicators of research capacity and technology creation. The emerging reality of the innovation process outlined above not only reveals the inadequacies of this earlier perspective, but suggests that an altogether different approach is required – one that takes into account the following concerns:

*Firstly*, the signature of innovation performance is no longer the existence of technological artifacts or the expertise to produce these (important as they are). Rather its signature is a process which is fit for the purpose of mobilising different pieces of information to resolve a changing series of challenges and opportunities. This means it is an adaptive process where learning plays a large role.

*Secondly*, the signature of innovation capacity is no longer single nodes of expertise and information in research organisations. Instead, the signature of capacity is a system of multiple nodes of expertise where users of new products and services are prominent nodes in their own right. These arrangements are often informal, adaptive and transient.

*Thirdly*, the signature location of emerging innovation is rarely in the mainstream of public policy intervention or as a result of the initiatives of international development organisations including the CGIAR. Increasingly, the signature location of innovation is at the margins, “under the radar” of public policy of formal research organisations. Many of today’s development innovations emerged in this way: systems of rice intensification; farmer field schools; the commercialisation of spirulina; treadle pumps; micro-finance; and innumerable civil society-derived innovations in rural development and a myriad of user innovations that are largely undocumented.

These “below the radar” innovations are important not just because of the specific new product or service that they lead to and the developmental impact these may have. They are also important

because they represent new forms of innovation capacity that may have wider development significance. In other words, these are new, contemporary modes of innovation that public policy needs to learn about and learn how to nurture.

### **How do we Benchmark Rural Innovation Capacity?**

There are already some efforts to benchmark rural innovation capacity, but these primarily still rely on quantitative information as the foundation of measuring, monitoring, and 'benchmarking' inputs and outcomes of innovation. These include STI indicators generated by the OECD, agricultural benchmarking indicators generated by agricultural research centres, most notably the CGIAR<sup>3</sup>, as well as other unpublished measures used by governments and private consultants, etc. This sort of concise, numerically-based information, as well as other relatively sophisticated composite indicators of innovation performance developed by innovation surveys, is greatly valued by policymakers. However, while these efforts may be of cache to policy, they do not necessarily capture the complete and nuanced picture of the innovation experience. Following a presentation of the CGIAR's efforts at benchmarking innovation during the April 2008 IFPRI conference on 'Advancing Agriculture in Developing Countries through Knowledge and Innovation', Andy Hall (2008) observed:

"Of course, indicator-based innovation benchmarking has a role, but it clearly needs to be expanded to accommodate key insights from the innovation systems perspective. Most important is the need to assess the degree of interconnectedness in the economy and the institutional setting that shapes this interconnectedness. Innovation outcomes such as new products are certainly a proxy for innovation capacity, but have limited diagnostic content for policymakers seeking to strengthen capacity.

Both Dr. Spielman's presentation on benchmarking and Dr. Nienke Bientema's on agricultural science and technology indicators acknowledged that their approaches did not capture the critical aspects of systemic coherence or even the degree of partnership. The truth is that data on these topics simply doesn't exist. The question, however, that one is left with is why, considering the limitations of a numerical, indicator-based approach to innovation benchmarking, has a research organisation like IFPRI not started to experiment with different approaches?"<sup>4</sup>

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<sup>3</sup> Spielman, D and Birner, R. (2008). How Innovative is your Agriculture? Using Innovation Indicators and Benchmarks to Strengthen National Agricultural Systems. *Agriculture and Rural Development Discussion Paper 41*, World Bank: Washington, D.C.

<sup>4</sup> Andy Hall (2008). "Negotiating a New Agricultural Innovation Paradigm. The Anatomy of the Debate". *LINK LOOK*, Link News Bulletin April 2008, LINK: Hyderabad. (For more on Dr. Hall's views on the CGIAR's efforts to benchmark rural innovation, as well as the larger debate about the mainstreaming of ideas of the agricultural innovation system and accompanying clamouring for tools to operationalise systems perspectives, visit [http://innovationstudies.org/index.php?option=com\\_content&task=view&id=223&Itemid=99999999](http://innovationstudies.org/index.php?option=com_content&task=view&id=223&Itemid=99999999)).

This is not to say that every effort so far at benchmarking rural innovation has followed a strict, indicator-based approach. There have been attempts at more process-orientated approaches, such as dialogues between policymakers and other actors in the innovation process to discuss what works, what does not and what can be done in the future. In May 2008 the World Bank Institute (WBI) organised a workshop<sup>5</sup> in which country teams consisting of policy, private and development actors convened to discuss and act on a series of innovation and agribusiness case studies from six sub-Saharan African countries.

Other alternative options to generate information about innovation experiences include consultations, policy and business climate reviews, foresight and visioning. However, the use of these approaches is in its infancy – particularly for the rural sector, where levels of investment in agricultural research remain the principle tool used to track capacity.

The “South Asia Rural Innovation Capacity Benchmarking Workshop” was organised to carry these ideas forward to the next level, by identifying the role benchmarking could most usefully play in a particular innovation scenario and by initiating a dialogue over what features the process could possibly incorporate.

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<sup>5</sup> World Bank Institute (2008): Developing Technology and Innovation in Africa: Focus on Agriculture and Food Industry. Research Agenda and Policy Forum, Dar es Salaam, May 12-14, 2008. (<http://go.worldbank.org/52EXZ94WV0>)

## WORKSHOP PROCEEDINGS AND OBSERVATIONS

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As outlined in the preceding section the question of what aspect of innovation capacity could be measured becomes much more difficult as it no longer concerns expertise and technologies, but the process by which different bits of knowledge are mobilized to address emerging challenges and opportunities and how the systems learn and evolve. This immediately suggests that a qualitative understanding of capacity is going to be much more useful. However it may also be the case that the notion of benchmarking as a measurement of innovation capacity should be rethought. Perhaps it needs to be eclipsed by activities that stimulate policy learning in different ways. In other words benchmarking in the contemporary sense may itself need to become a learning process rather than a description (quantitative or qualitative) of innovation performance.

To start and build up a picture on how to move forward a workshop was organised in New Delhi on August 19-20 to discuss these issues with policymakers, practitioners and others. The first day of the workshop was devoted to the presentation of six country case studies of below-the-radar innovations in one particular rural sector, discussions over which set the tone for the next day's proceedings.

To set the scene for the meeting, case studies from six South Asian countries (Nepal, Bangladesh, Sri Lanka, Pakistan, Bhutan and India) were commissioned, focusing on one selected rural sector. The cases were required to provide illustrations of both historical “below the radar” innovations – i.e., products, services and innovation approaches that have emerged at the margins and which have become mainstream; and emerging “below the radar” innovations – i.e., promising products, services and innovation approaches which are different from what went before and which could have wider development significance.

The paper writers were to prepare their case studies according to the following guidelines:

1. Select three “below the radar” innovations in one selected sector – one historical, two emerging (these should not be devised or led by the CGIAR or any other international development organisation)
2. Describe the innovation and its significance. Is it a technical innovation or an innovation in the way things are organised, marketed or produced? Does it have any notable features

— i.e., is it low cost, a new use of something already widely used, does it have any features specifically adapted to particular social groups (e.g. the poor).

3. Describe the history/ story surrounding the innovation, providing enough country/ sector context to help explain why it happened as it did. What was the problem or opportunity being addressed? Who championed the innovation and why? Which other individuals and organisations were involved? Who did what? What was the role of formal research, if any?
4. What policy or regulatory obstacles were encountered? How did mainstream research/ or enterprise/ or development practitioners react to the innovation? Was there any resistance from vested interests in different social, professional, or enterprise groups?
5. For historical cases, what allows the below the radar innovation to move to the mainstream?
6. What are the common features of the cases?

The primary aim of using these case studies was to understand and analyse:

- The nature of innovation process
- How these innovations emerge
- Who the main players are
- How innovations move from the margins to the mainstream
- The role of the supporting policy environment
- What it means for recognising the different innovation trajectories
- What it means for public policy
- How this capacity can be benchmarked in order to direct policy support more meaningfully

The S&T policymakers and rural development practitioners attending the conference were then asked to use the case studies to guide discussions around the following questions:

### **1. Why are we benchmarking?**

What is the gap that benchmarking-like activity should fill? Is it for policymakers, practitioners, donors or for everybody? Taking into account the gap that it is trying to fill what should be the balance between measuring innovation activity, learning lessons about innovation (for both policy and practice) and generating dialogue and building links between actors involved in innovation (including policymakers)?

## **2. Who should lead benchmarking?**

Given that much of innovation is invisible and that visible innovation already has strong links to policy, who should convene benchmarking? How can capture of benchmarking (by vested interests) be avoided? Who could be an honest broker? Who should participate in benchmarking exercises? How can multilayer and multipurpose objectives be achieved?

## **3. How to make the invisible visible?**

How can we generate narratives of invisible innovation activity and capacity? How can we generate dialogues around these invisible innovation narratives? How can we blend visible and invisible innovation narratives in policy and practice learning?

## **4. What are the organising themes for benchmarking?**

How can we delineate the benchmarking exercise? Should it be at the sector level (i.e., all that is rural) or should it be on commodities? Can it be around value chains, or new themes such as bottom-of-the-pyramid innovation? What about enterprise clusters? Or should the organising theme be a mixed suite of all of the above?

## CONCLUSION AND WAYS FORWARD

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What was eminently evident from the case studies and the discussions around them that followed was the wide range of innovation practices observed — from science-led to farmer-led and many configurations in between. While some were visible to policymakers, the majority were either invisible to policy or were ignored by it. Although most of the cases discussed were designed specifically around pro-poor goals, others that did not set out with this particular aim still presented positive outcomes for the rural poor. Building on the debates that followed the presentation of the six South Asian case studies<sup>1</sup>, we can make the following points:

- Innovation is not only about technology transfer, but also **learning and un-learning** (or re-discovering, e.g. the case of organic agriculture in Pakistan which rediscovered traditional practices)
- We need to move away from an understanding of innovation as research-based to viewing it as more **capability-based** (e.g., the case of Sri Lanka bananas, in which a research organisation played a critical role but the innovation process didn't involve the simple transfer of the research technology it generated)
- Interactive learning is at the basis of innovation; i.e., it emerges from the interaction among various actors (linkages, networks; e.g. the development of a successful value chain around cabbage in Nepal which relied on continuous and sustained interactions among the different actors involved)
- Innovations are **context-specific** (path-dependent, conjunction of circumstances) (e.g. Milk processing in Bangladesh)
- Innovation is often around the critical engagement of **demand** (e.g. an integrated community development model in Bhutan that relied heavily on inputs from that very community in order to set immediate tasks while still working on larger intended goals)
- Innovation is not about **what** happens (inputs, outcomes), but about **how** it happens (process) and **when** and **where** it happens (context-specificity) (e.g., the success of Fabindia in India happened almost serendipitously at a time when it lost its only client and was forced to expand into the domestic market during a period that also witnessed the emergence of a burgeoning middleclass)

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<sup>6</sup> See Appendix 1

Table 1 below summarises the discussions about how to rethink conventional benchmarking from an innovation systems perspective

**TABLE 1: A NEW WAY TO BENCHMARK INNOVATION CAPACITY?**

<b>Key features</b>	<b>Traditional benchmarking</b>	<b>Proposed Benchmarking in innovation systems</b>
Understanding of development	Development as catching-up	Development as upgrading
Objective	Setting up best-performance: Catching-up tool	Improving performance of the system: learning tool
Focus	Focus on measurable impact	Focus on improving dialogue and linkages across the IS
Type of information	Quantitative	Mostly qualitative; detailed narratives
Direction	Top-down exercise: implemented at the policy level; distribution of public resources	Multilayered exercise: implemented at various levels; encourage improvement performance across the IS
Reference	External to the IS	Internal to the IS
Underlying culture	Reflects a culture of achieving pre-determined goals	Reflect a culture of change and improvement

*Courtesy: Erika Kraemer-Mbula, University of Brighton*

## **Ways Forward**

Benchmarking innovation may have a rich history in the corporate world, but its application in rural development circles is clearly still in a conceptual phase.

The workshop was just the first step at understanding the challenges that lie before us in developing ways and tools to benchmark rural innovation capacity. Our goal as organisers wasn't to come up with a one-size-fits-all solution. Rather, the workshop raised more issues and questions for policymakers and development practitioners to address. However, based on the discussions that followed the country case study presentations, we can make the following general points and recommendations for the next step in the process:

1. Benchmarking rural innovation capacity is a concept that is still in infancy and its application requires flexibility and learning. No current blueprint exists.
2. Innovation tends to emerge from network-like arrangements and linkages within an innovation system. These linkages can be fluid and constantly changing. Benchmarking could be one way to assess the strength of these linkages and improve them.
3. Benchmarking innovation capacity can help identify policy gaps, select intervention points and track progress. Through the sharing of ideas and as a starting point for dialogue, it can be much more than just a way of describing the innovation experience. Rather, benchmarking capacity could be one way of ensuring that policy comes to grips with ways of enhancing that very capacity for innovation, and direct support more meaningfully.
4. Innovation performance is no longer the existence of technological artifacts or the expertise to produce these. Rather its signature is a process which is fit for the purpose of mobilising different pieces of information to resolve a changing series of challenges and opportunities. This means it is an adaptive process where learning plays a large role. Benchmarking innovation then must necessarily be a learning tool.
5. Emerging innovation is rarely the result of public policy intervention or of initiatives of international development organisations. Increasingly, innovation is observed at the margins, “under the radar” of public policy of formal research organisations. These “below the radar” innovations are important not just because of the specific new product or service that they lead to and the developmental impact these may have. They are also important because they represent new forms of innovation capacity that may have wider development significance. In other words, these are new, contemporary modes of innovation that public policy needs to learn about and learn how to nurture.
6. The next phase could be a consultation and discussion phase, perhaps by facilitating multistakeholder platforms that support the identification and planning of activities, including the assessment and analysis of existing attempts at benchmarking.
7. We need to generate more case studies in order to identify instances of innovation activity, come up with detailed narratives of the process involved, and share lessons learnt. In other words, innovation often emerges from the way in which individuals and organisations work rather than the goals they work toward. Case studies, then, can provide the basis for a dialogue regardless of the context and location specificity of the innovation activity itself.

8. To take this process forward, it would be more useful to organize similar workshops on benchmarking innovation capacity at the national level, where evidence from such case studies are presented to practitioners and policy makers. This can potentially create interest and opportunities for initiating benchmarking exercises at the national level.
9. At some point the talk has to result in some sort of action. One suggestion is to actually initiate a benchmarking exercise around some innovation activity – *learning by doing*
10. More dialogue need not necessarily be in the form of regional workshops. A wide variety of communication tools are at our disposal, including perhaps an online forum in which different actors in the innovation process can share lessons learnt from their own experiences and receive inputs from others.

## APPENDIX 1:

### COUNTRY CASE STUDIES

To set the scene for the discussions on benchmarking rural innovation capacity, we commissioned papers from six South Asian countries. The case studies selected focused on a selected rural sector to provide illustrations of both historical “below the radar” innovations — i.e., products, services and innovation approaches that have emerged at the margins and which have become mainstream — and emerging “below the radar” innovations — i.e., promising products, services and innovation approaches that are different from what went before and which could have wider development significance.

Participants were asked to examine one rural sector in particular, highlighting historical and emerging innovations and explaining how these initiatives emerged. In each of the case studies picked, participants noted the main players and the nature of the policy environment and, where possible, described what allowed these innovations to become visible.

#### 1. Country: Nepal

##### Case: The Horticultural Sector

Horticulture is one of the most important agricultural sub-sectors in Nepal — a country in which over 65% of the population lives in rural areas (two-thirds of which depend on agriculture for their livelihoods). However, horticulture development only received its due attention from the government in the recent 1995-2015 Agriculture Perspective Plan, which recognised the potential of high value crops such as off-season vegetables and citrus fruit and articulated specific programmes to cultivate them. The examples below highlight three unique innovation stories from Nepal’s horticulture sector and the trajectories they followed.

- i) *Intensifying vegetable production in the Kathmandu Valley through innovative cropping techniques:* The first example from Nepal details the farmer-led intensification of vegetable production in the increasingly urbanised Kathmandu valley. Only two decades ago around 70% of all vegetables sold in Kathmandu was imported from India; today nearly 85% of the supply is grown in Nepal. Although vegetable farming in the Kathmandu Valley has a history of nearly three-quarters of a century, this was traditionally limited to a small number of farming families raising a few crops — such as garlic, turnip and chilli on a seasonal basis — around the traditional paddy cultivation cycle. As the demand for green, leafy vegetables grew with increasing urbanisation of the Kathmandu valley, farmers gradually started practising adopting innovative intercropping and multi-tier cropping techniques to grow more than 25 types of vegetables, utilising 6-8 crop cycles per year. Although traditional harvesting practices still persist, farmers now selectively plan to grow vegetables with short crop cycles like cress and spinach (1-1.5 months), garlic and chilli (3 months), and carrot (four months). During the rainy season, farmers plant

onions, leeks, broadleaf mustard, etc. The case is indicative of the farmers' capacity to innovate around changing market demands — despite the lack of extension support from government agencies or even NGOs. The relative proximity to the primary markets gave the farmers the luxury of direct access to customers and information about their needs, while at the same time eliminating one roadblock — that of extra transportation costs.

**Actors:** Farmers, who took upon themselves the responsibility of production and marketing

**Innovation:** Production innovations around crop intensification, using innovative intercropping techniques; marketing innovations based upon the needs of the consumers

**Conditions:** Rapid urbanisation of the Kathmandu valley and an accompanying rise in demand for green, leafy vegetables

**Constraints:** The chief constraints in this case loom in the form of decreasing productivity because of soil degradation and insect and pest problems because of intensive farming.

- ii) *Successful development of a value chain on cabbage (and, to some extent, tomato) led by a producer co-operative in Dhankuta, east Nepal:* Nepal's incredibly variance in climactic zones serves as a backdrop for the second example of innovation in the horticultural sector in the form of the successful development of a value chain on 'off-season' vegetables. Under a government-backed programme, with technical support from research organisations, farmers in the Dhankuta Hills in the eastern Terai region were encouraged to grow vegetables like cabbage, peas, tomato, cauliflower, radish, carrot, etc., instead of traditional crops like millet and maize. Produced in one agro-climatic region during their normal season of production, the produce is marketed in other regions as 'off-season' vegetables. The Dhankuta Hills vegetable production model, as it came to be known, is now one of the most successful examples of the establishment of a commercial pocket for off-season vegetable production. The model was later replicated in other parts of Nepal. Using funds from DANIDA, the government agency Centre for Environmental and Agricultural Policy Research Extension and Development (CEAPRED) set up several producer groups in the Dhankuta region with a view to ultimately reducing transaction costs for input delivery, technology dissemination and output marketing. Thirteen farmer groups were ultimately merged to form the Sindhuwa Multipurpose Cooperative Ltd (SMCL). In the beginning the cooperative organised the farmers into producer groups, supplied (mainly imported) seeds, fertilisers and pesticides, arranged for training visits and tours and collected and marketed the vegetables. The cooperative is an integral part of the value chain on vegetables, particularly cabbage, by collecting the produce from farmers and supplying the wholesalers. SMCL is now much more than just a producer cooperative; it actively lobbies for government subsidies, invests in infrastructure development, collects market information and supplies export markets in India and Bangladesh. The cooperative has been most successful with producing cabbage for the export market, there being large demand for the vegetable in the off-season in India and relatively few restrictions to its export. Commercial success has been more elusive in the case of other vegetables, however. Despite some interest from vegetable importers in Bangladesh, an early proposal to export tomatoes to that country fell

through because of quibbles over pricing. Exporting to India was never an option because Nepal's tomato crop currently fails to meet government of India quality and safety standards. In order to meet these requirements, farmers would require technical support from government agencies, but that is not currently being offered.

**Actors:** Producer cooperative (comprising farmer groups), wholesale retailers, exporters and collection agents from the private sector, government

**Innovation:** Production and product innovations around new (to the farmers) vegetables, and marketing innovations in the value chain around the vegetables of that were grown during a normal season of production but sold elsewhere as off-season vegetables

**Conditions:** Greater linkages between the different actors in the innovation process that were strengthened through coordinating on problem-solving exercises

**Constraints:** Lack of coordinated research to develop hybrid seeds to replace the expensive imported varieties remains a constraint in this case. In the absence of sustained public support, farmers also find it difficult to bear the high irrigation, transportation and infrastructure costs, as well as that of labour. High costs translate into high prices of Nepalese off-season vegetables, making them commercially unviable options in Bangladesh, for example, where local varieties are generally cheaper.

- iii) *Private-public partnership to integrate production, post-harvest and marketing knowledge around Junar fruit:* The third example from Nepal details the efforts to popularise Junar fruit, a lesser-known variety of orange native to the mid-hills around Kathmandu (in Sindhuli). Although the promotion of junar cultivation has been in the Nepal government's radar since 1980, farmers weren't convinced of the merits of growing the fruit because of high post-harvest losses, limited connectivity to markets because of poor roads and high transportation costs. Under an innovative private-public partnership launched in 2006, called the One Village One Product (OVOP) programme, the cultivation of junar picked up steam, resulting in widely-reported income benefits for farmers in the district. Right at the outset, the various actors involved had their roles clearly defined according to their experiences and skills. Technical support and coordination came under the purview of the government partners involved – the Fruit Development Directorate (FDD), Post-Harvest Management Directorate (PMD), the Food Technology and Quality Control Department (DFTQC). The role of the private sector partners – Agriculture Enterprise Centre (AEC) and the District Chamber of Commerce and Industry – was that of market promotion and value chain establishment. What helped contribute to the success of the project was that all the actors involved understood not only their individual roles but also that of the others involved, and could see the merits of linking up. Problems that constrained earlier efforts at cultivating the fruit on a larger scale were tackled through coordinated efforts at every step of the way. The actors coordinated problem-solving campaigns on a regular basis. In one instance, the private sector actors realised that there was a dip in the market popularity of junar fruit that was harvested before December as consumers found perceptible qualitative differences in flavour. Once they

brought this to the attention of the government agencies, the latter organised training exercises, where right harvesting techniques and other post-harvest handling practices were demonstrated to farmers. Following the coordinated interventions, farmers immediately noticed a perceptible difference in the quality as well as quantity of fruit they cultivated. Another hurdle came in the form of huge post-harvest losses as a result of the traditional packaging (bamboo baskets) used for transporting junar fruit to the markets. A combined effort by both the private and the public sector agencies culminated in the development and uptake of double-walled corrugated fiberboard cartons, which resulted in a better quality of fruit arriving in the markets. The OVOP programme is now in the process of introducing new marketing channels for junar by helping form farmer marketing cooperatives. The primary focus of the OVOP programme has been to intensify linkages among the different actors and develop a vertical value chain around junar. It is also experimenting with expanding the value chain horizontally, by incorporating small processing units to produce fruit juice and jam.

**Actors:** Government agencies, Private Sector, Farmers

**Innovation:** Production and product innovations around junar fruit, value addition and packaging, institutional innovations around new patterns of public-private

**Constraints:** The OVOP is still primarily a pilot project, and its expansion is constrained by several factors, not the least among which is the issue of accessibility to markets due to poor road infrastructure and the resulting high transportation costs. The absence of a grading system for the fruit has resulted in varying qualities of the fruit available in the market and has, perhaps, contributed to its still diminished appeal to consumers who have the choice of a better quality of fruit in the other orange varieties available in the market. The programme is also constrained by the very limited nature of the market for junar, as the wider domestic and international markets are not familiar with the fruit, and there are no efforts to promote it, as yet.

## **2. Country: Sri Lanka**

### **Case: Horticultural (Fruit) Sector**

With a population of 19 million people — nearly 70% of which still lives in rural areas — Sri Lanka, like its other South Asian counterparts, still relies heavily on the agriculture sector in terms of rural employment. Despite a history spanning several decades of public investment in agriculture, sustained rural development is still an elusive goal. Conventionally, horticulture development followed a top-down, linear path of technology transfer from the government-run Horticultural Research and Development Institute (HORDI) to the farmer at the other end through government-trained extension officers. And with that, government responsibility ends. Farmers are left to their own devices to find private sector input suppliers as well as seek out public subsidies for specific inputs, such as fertilisers and pesticides. The examples discussed below are stories of below-the radar innovations that are a wide departure from the convention.

- i. *Promotion of new technology through farmer/youth training and outreach programmes in the cultivation of bananas in Hambantota district:* Banana is the most widely cultivated and consumed fruit in Sri Lanka — and its attraction to farmers by virtue of being a perennial fruit crop with high economic dividends cannot be denied. The case discussed here is one of a unique collaboration between a public sector research organisation (the University of Colombo’s Department of Plant Sciences), a local government authority (the Mahaweli Authority of Sri Lanka) and banana farmers in Embilipitiya — a region that produces the most bananas in the country but is resource-constrained. In 1993, the government authority invited researchers from the university to introduce tissue-cultured banana to the area in an effort to increase yields and, thus, income levels. The research team started off by interviewing dozens of farmers to get a better understanding of the constraints they faced and the inputs they required to overcome these. Initially, interest in the new tissue culture technique around bananas was limited to just two farmers. The following harvest resulted in an astounding number of farmers interested and demanding the technology — the increases in the quantity as well as quality of fruit produced was a convincing enough argument. What started off as unique pilot experiment between a government agency and a university department expanded into a larger innovation story in 1998, when new actors were introduced into the innovation system — including the Irrigation Department and the Export Development Board of Sri Lanka, and later the Ministry of Rural Development. It also spawned a unique experiment in the form of the University of Colombo’s newly created Magampura Agrotechnology and Community Service Centre — a venture that was aimed at taking the researcher out of the lab as a ‘creator’ of technology and into the field as a rural community development practitioner. Continuous collaboration and networking among the existing actors in the innovation system and the newer actors introduced resulted in the widespread uptake of tissue culture techniques in banana cultivation. The project also trained 15 young men and women from the farming community on in vitro plant production — a hitherto unheard technology. That experiment paid off in dividend; not only are the 15 now fully capable of conducting farmer field trainings on their own, they have also renewed interest among the region’s youth in farming and thus significantly reduced rural-urban migration in search of better jobs. What is entirely unique about this example is that it was entirely demand-driven, and a complete departure from previous top-down approaches to promote banana cultivation. The public sector actors also displayed a willingness to stray outside the narrow confines of the existing policy structure to experiment with new institutional arrangements, providing a unique narrative of two-way interactions between researchers and the end-users of their research.
  
- ii. *Value addition to banana and replication of the banana innovation model in nearby villages:* The economic successes experienced by the banana farmers in the previous case has resulted in another in innovation story — that of value addition to banana. Increases in the quantity (as well as quality) of banana cultivated spawned subsidiary industries (banana chips, banana flour and banana jam, for instance) around the fruit.

**Actors:** Public sector researchers, government actors (local government, the state irrigation department and export council), Farmers

**Innovation:** Technical innovations using agrobiotechnology cultivation with tissue culture technology, Institutional innovations to develop new patterns of linkages and deepen networks, Marketing and Product innovations

**Conditions:** Although the existing policy structure in Sri Lanka hardly allows for multi-agency implementations, certain public sector agencies displayed a commendable willingness to think outside the box and form new institutional arrangements

**Constraints:** Despite willingness of certain government agencies to deviate from their normal responsibilities, the venture still faced huge roadblocks from the Ministry of Agriculture's Department of Agriculture, which did not encourage its extension officers to promote the technology. Effective marketing mechanisms also arose from within the project itself when there was scope for government agencies to intervene instead

### **3. Country: Bangladesh**

**Case:** Agro Processing Sector

Well-developed networks among various rural development actors in Bangladesh allow for the country to be an ideal breeding ground for a wide variety of innovation experiences. The cases discussed below are just two examples of below-the radar experiences.

- i. *Entrepreneurship in smallscale milk processing:* Despite a long history, livestock rearing in Bangladesh underwent a period of decline in the Eighties during a period characterised by wholesale imports from India to supply domestic meat markets, rising diseases among livestock (owned primarily by extremely poor households with no available resources to tackle problems) and the absence of any private sector efforts in raising cattle to produce milk. A generous state subsidy to import milk powder from Europe, North America and Australia did not help matters much, either. Interestingly enough, despite large (unmet) demand for milk and milk products, expansion of the dairy sector wasn't a foregone conclusion because the cost of production was still too high. Things are starting to change with the emergence of largely urban smallscale milk processing units, which started setting up collection and chilling centres in rural areas. The creation of value addition units (to produce milk products such as milk-based sweets, butter, cheese and yoghurt) and effective marketing campaigns among a burgeoning middleclass resulted in increased demand for milk-based products, a trend that is rising by the day. What has also helped are private sector-led entrepreneurial efforts to seek out and adopt new technology, which has been applied at every stage of the milk-processing value chain — from veterinary science-led research on rearing cows and increasingly milk produced, to the organisation of the production process at the household and community level, to cooling, storing and transport technologies that ensured the delivery of fresh milk from far-flung rural areas to their ultimate destination in the urban milk processing units.

**Actors:** Private sector entrepreneurs, with some involvement of small NGOs working with the rural poor in setting up collection stations in rural areas

**Innovation:** Technical innovations to introduce new cattle breeding techniques, product innovation to expand the range of milk products available in the market

**Constraint:** Milk processing as a sector still suffers from a lack of public policy efforts to support it. Public policy largely ignored the concerns of the domestic dairy sector. There were no efforts to develop cattle breeding techniques to increase quantity of milk produced.

- ii. *Accessing knowledge on seed production and management to set up rural seed enterprises:* Despite advanced scientific research on seed variety development in laboratories, there haven't been widespread efforts to transfer it to the farmer in Bangladesh due to the lack of policy support. A unique effort by a small group of NGOs is working to change things, however. Realising the absence of an 'innovation broker' to take the technology from the labs to the rural poor, a few NGOs in Bangladesh decided to set up an alternative, decentralised (rice) seed dissemination programme using high yield seed varieties collected from government research laboratories, (primarily the Bangladesh Rice Research Institute BRRI and the Bangladesh Institute of Nuclear Agriculture BINA). The NGOs, bolstered by some backing from a few smallscale private sector entrepreneurs, have set up a business model of small seed dissemination that has proved to be highly profitable. These 'seedpreneurs' act as seed multipliers, technology promoters, group facilitators and have expanded their role to build partnerships with farmers. What is highly unique about this model is that it is a locally-based solution to the farmer's seed problems.

**Actors:** Largely local NGOs, some smallscale private sector entrepreneurs, farmers

**Innovation:** Technical innovation on seed production and management; taken up by farmers because of the emergence of NGOs and private entrepreneurs acting as innovation brokers

**Conditions:** In this case, the absence of a supporting policy regime to disseminate new seed varieties to farmers actually allowed for the emergence of private sector and NGO-led efforts to set up rural seed enterprises

**Constraints:** There is no coordination among different government agencies and the research laboratories, which means the timely release and delivery of seeds is nearly impossible.

#### 4. Country: Pakistan

##### Case: Organic Agriculture Sector

Despite a national policy regime that favours chemical-intensive, largescale and export-oriented farming practices, the examples discussed below from Pakistan highlight emerging farmer-led attempts

to revert to traditional (cultivation) practices in organic agriculture. It involves production and marketing innovations that link traditional knowledge to emerging market demands. Interestingly, both cases illustrate the importance of individuals as ‘champions’ of innovation.

- i) *Daali Earthfoods*: A high-end retail outlet that sells only organic farming products, Daali Earthfoods was set up in 1996 by a social activist called Samiya Mumtaz, who took her own interests in organic foods one step further. She bought 14 of land in a semi-rural area outside Lahore, detoxified it by planting alfafa and clover and left it fallow for years to eliminate the effects of chemicals that had been used under previous cultivations. She started out her new farming career by planting wheat, rice and pulses, which she then sold through an organic produce shop she set up in Lahore. From its humble beginnings, Daali Earthfoods has now expanded its customer base, as well as its product range to include brown rice, whole wheat flour, porridge, bread, mustard oil, rock salt, prices, whole fruit jams, wild bee honey, vegetables, eggs and beauty products. What makes this a unique innovation story is that Daali Earthfoods is involved in every step of the supply chain, from production, to processing, packaging and marketing. Daali’s success has spawned a growth industry around organic products, with several similar retailers emerging in other urban areas.

**Actors:** A private sector venture (Daali Earthfoods) championed by an individual farmer/social activist

**Innovation:** Production and technical innovations (crop rotation, companion planting, integrated pest management and the use of crop residues and animal manure to maintain soil productivity) and innovations to diversify the range of products produced and sold

**Conditions:** The rise of an affluent and largely urban consumer base that was aware of the health concerns around pesticide use in commercial agriculture and convinced of the social and environmental benefits of organic farming

**Constraints:** Policy is noticeable largely due to its absence; due to its size, Daali’s innovation trajectory has largely been ignored by policy. Expansion is a problem in the absence of policy support in areas of certification, accessing international markets, and access to credit.

- ii) *Lok Sanjh Foundation*: Founded by farmers and rural activists in 1996, the Lok Sanjh Foundation is an NGO that grew out of a rural health worker’s experiences in a health camp outside Islamabad in the early 1990s. Noticing the widespread prevalence of gastroenteric diseases among the farmers visiting the camp, Dr. Farzana Shahid realised that the cause could be traced to high levels of pesticide and fertiliser use by farmers in the region. Her findings were taken up by an agriculturalist, Dr. Shahid Zia who set up Lok Sanjh with the help of other equally concerned farmer-activists. The NGO works on a diverse range of issues, from promoting organic agriculture among farmers to advocating for an enabling environment for it in policy circles. Initial activities were limited to efforts to encourage farmers to switch from chemical-intensive to organic agriculture. This helped them identify skill gaps and they quickly moved into areas of training and capacity building, and later into policy advocacy. The NGO now implements several programmes, including the Village

Food Security Programme, under which it has set up and maintained seed banks. Lok Sanjh is also currently developing a rural business development centre.

**Actors:** Individuals, NGOs, Farmers and rural social activists

**Innovation:** Product and marketing innovations

**Constraints:** Its relatively small size has resulted in Lok Sanjh's innovation story being invisible to policy.

## 5. Country: Bhutan

### Case: Integrated Community Development Model

Bhutan is a unique case in South Asia because unlike its counterparts, NGO activity in Bhutan is virtually non-existent, save for a few that have only recently been set up. Despite high levels of primary school enrolment (84%) in 1994, secondary and tertiary education is not an option for many Bhutanese in remote rural areas. The absence of any irrigation, electricity or road infrastructure, extremely small holdings of land and virtually no other industry has meant that several rural Bhutanese are hard-pressed to come up with ways to generate income.

*Tarayana Foundation:* As recently as 2003 the Tarayana Foundation was set up by a member of the Bhutanese royal family with the primary goal of rural development. Tarayana works on creating income generating activities in rural areas where unemployment is a huge concern. It has set up training centres to promote artisan skills and facilitates the sale of products created in the villages as a result. Tarayana's Integrated Community Development Model is a creative effort at rural development in the remote village of Rukha, which has a population of only 147 people belonging to the Olep community. The village has limited access to roads and electricity and even agriculture has not been a viable income generating activity, given the extremely small holdings of land and the lack of good agricultural practices prevalent. Given the extremely small size of the community, community building was also hindered by squabbles among the 18 households that formed the entire community. Since its arrival in the region, Tarayana has interacted with community members to get a feeling for local needs – a process hindered by the Olep mistrust of outsiders, but overcome by the NGO maintaining a sustained and continued presence in Rukha for six years. In 2006 Tarayana launched a community development project aimed at poverty alleviation in the village. This was a project that involved local community members at every step of the decision-making process and was unique in that goals were made up and prioritised according to immediate community concerns. Therefore, even though the larger concern was to provide primary education to the women and children and artisanal skill training to adults, the first and immediate task was to build better shacks for the villagers because that was what was demanded by the community. Tarayana set up a committee to transfer construction skills, including stone masonry and carpentry skills, to villagers – thereby giving them the responsibility of solving their own problems, but providing them with the necessary skills to do so. The houses that were

built by the newly-trained villagers weren't the traditional shacks they had initially demanded, but double-storeyed buildings. A by-product of the entire process was the fostering of greater interpersonal relationships among the villagers, smoothing over cracks that had built up over years. The NGO then proceeded to revitalise traditional handicraft skills through another committee, which apart from imparting training, also undertook the marketing of final products. With the involvement of extension personnel from the Department of Agriculture, another committee took on the task of training women to farm organically, using pollinated seeds. The task also contributed to improved nutritional levels because of a variety of new vegetables being introduced into the local diet. Training in better agricultural practices and provision of improved seed qualities have resulted in increased farming yields, and the surplus is now being sold in neighbouring areas, thus contributing to improved incomes. Subsidiary activities by the NGO involve improving literacy levels through primary and adult education centres for the community, regular health awareness camps and providing access to microcredit. With the help of solar engineers it recruited, the NGO has also managed to electrify the entire village.

**Actors:** NGO, government, villagers belonging to a single community in a remote village

**Innovation:** Production, Marketing, social mobilisation, improved access to education, vocational training and better housing

**Constraints:** While the NGO was convinced that the way forward was to address immediate needs of villagers before implementing the larger goals in mind, it found it had to fight to get the message across to its donors, who didn't quite agree that that the first step to improving literacy, imparting income-generating skills and improving livelihoods was to build proper housing for the villagers. The remoteness of the community is another hurdle, as it can become virtually cut off from the outside world whenever there is a landslide or during the periodic flooding in the region during the rainy season.

## **6. Country: India**

### **Case: Handloom Sector**

The handloom sector in India plays an important role in India's economy and is one of the largest economic activities after agriculture. According to the government, India is the only country that still produces handloom products on a commercial scale. Out of the 4.6 million looms in operation around the world, India accounts for 85%. Handlooms in India have an emotional value, given the history of textiles in the very fabric of the nationalism story. This explains, to a large extent, the constant and continued involvement of the public sector with handlooms where other countries have largely stepped back. This, plus the fact that the industry involves one of the poorest communities in India and is a large employment generator means that the role of the government in the sector is likely to continue for some time. However, public policy has never fully understood or recognised the potential for the industry's growth. It has tended to view handlooms as a sector to be propped up rather than one that could be promoted. Policy support has tended to emphasise subsidies and support in the mode of rural

development rather than innovation and business development support. The examples discussed below present trajectories of innovation with high social relevance for one of the poorest communities in India, handloom weavers. The cases exhibit productive and innovative capacity that is either private sector-led and/or responding to demands of non-poor consumers — all of took place in the absence of policy support for it. The case studies specifically explore marketing and product design innovation in the handloom sector as well as production innovation in dyes and loom design.

- i) *Fabindia. Weaving social service into a profit margin:* Set up as an exporter of handloom upholstery fabric by American John Bissell in 1960 (with no plans for domestic expansion), Fabindia has grown to become a \$183-million ethnicwear company with branches across India and abroad. Fabindia reiterates that its bottomline is and always has been to make a profit. However, as a company built around handloom products and working largely with members of some of India's poorest communities, the company feels it has a social obligation to fulfill along the way. This commitment to fulfilling larger social goals while pursuing a higher profit margin resulted in the company attracting a new investor in 1997 — when former World Bank president James Wolfensohn expressed an interest to invest in private sector concerns around the world that placed an emphasis on social concerns, he discovered Fabindia, and now owns a 6% stake in the company. Fabindia tries to help weavers build the capacity to innovate along product design by providing end-user feedback — something that producers in the handloom sector rarely have access to, given the distance between largely rural producers from their largely urban markets. The company is in the process of establishing several community-owned enterprises in which the weavers it works with will be given shareholdings. In times of need, weavers could trade their shares to obtain immediate funds for running their businesses in the times of need. Fabindia has tied up with ICICI Bank's Sandhi Craft Foundation, which will provide Rs.100 crores over five years to Artisans Micro Finance Private limited (AMFPL), which will help establish these community owned companies. Apart from finance, Fabindia also hopes to improve quality standards and supply technological know-how. It plans to set up a design panel to help artisans create designs in sync with market demand. It would also sponsor heads of the community-owned enterprises to undergo a course on business administration in a leading business school. The company also organises buyer-seller meets twice a year, where Fabindia representatives interact with local weavers to provide inputs on market trends and emerging designs. It also conducts workshops with weavers on various quality control parameters. Recently, it launched a prototype development project, where merchandisers from Fabindia indicated their preferences and a local weavers' cooperative worked with a designer from the National Institute of Design (NID) to develop samples as per Fabindia's specifications. From a product line that largely comprised readymade garments, the company has expanded to home furnishings, footwear, organic products, body care products and is now entering into publishing (even toying with the idea of using handloom cloth for a range of children's books).

**Actor:** Private sector company

**Innovation:** Product design and marketing innovation

**Conditions:** The success of Fabindia in India happened almost serendipitously at a time when it lost its only client and was forced to expand into the domestic market during a period that also witnessed the emergence of a burgeoning middleclass.

- ii) *Dastkar Andhra. NGO lessons on Marketing:* In 2007, a new high-end retail outlet opened doors near the old airport in Hyderabad. *Daram* (thread in Telugu) sells readymade fabric, home furnishings and accessories to a middle-to-high class clientele, and is fast gaining a reputation for its innovative designs and high attention to quality of both fabric and dye. Unlike most profitable ventures, however, almost all of *Daram's* proceeds revert back to the weavers producing the fabric. The goal, however, is more ambitious: that of building innovation capacity among weaver groups and supporting their transition into autonomous and self-sustaining design, production and marketing units. *Daram* is a venture by *Dastkar Andhra*, a not-for-profit NGO set up in 1989 that works with weavers in the southern Indian state of Andhra Pradesh. It is the outcome of *Dastkar Andhra Marketing Association*, (*DAMA*), its marketing arm. According to *Dastkar*, which initially started out taking up welfare causes of the weaving community, they quickly understood the limitations of existing marketing strategies and sought to develop a marketing programme based on the strengths of handloom production. They soon developed a programme to fill the gap between market demand and production capacity. *Dastkar* says it recognised an urgent need to mass base the handloom market so that more and more handloom producers could get work on a continuous basis. *Dama* entered the business of marketing handlooms to establish the fact that it can be done successfully with no subsidies and purely on the strength of the product. Its ultimate aim is that every producer society becomes an independently functioning weaving group, able to access and service customer orders suited to their production schedules. This will free up infrastructure within *DAMA* to work with new producer groups rather than doing the same things over and over again. *DAMA's* relation to the weaving community is to be that of a consultant agency providing services to a self-reliant industry.

**Actor:** NGO

**Innovation:** Product design innovation around range and design of handloom products and technical innovation around looms

**Constraints:** For an industry that has for long been viewed as a largely public sector concern, the only successes in handlooms have been in the private sector or in the NGO-led enterprise sector, which has recognised the importance of building innovation capacity among its producers. The demand for institutional infrastructure is commonly made for the growth of any industry. However, very little thought has gone into proper planning of support institutions and structures for the decentralised sector, of which handlooms is a prime example. One of the reasons for this is that its (potential) contribution to national growth and rural regeneration is rarely recognised within public policy circles. There are specific areas, which need strengthening in the industry, and the cases detailed above have worked on the weaker links in the production-marketing chain in unique ways. The handloom sector is largely missing from the research and policy landscape when it comes to supporting science and technology innovation.

**Table 2: Country-wise Summary of Innovations**

<b>Country</b>	<b>Cases</b>	<b>Innovation</b>	<b>Led by</b>
Nepal	Horticulture	<p>Farmers intensifying vegetable production by accessing modern inputs and pest management practices</p> <p>Successful development of a value chain on cabbage and tomato led by a producer co-operative</p> <p>Public-private partnership to integrate production, post-harvest and marketing knowledge</p>	<p>Farmers</p> <p>Producer cooperatives, Government, Private sector</p> <p>Joint initiative of Government and Industry</p>
Srilanka	Tissue culture banana	Promotion of new technology through farmer/youth training and outreach programmes	Research
Bangladesh	Milk processing, Seed production programme	<p>Rural and urban entrepreneurs setting up smallscale milk processing and value addition units</p> <p>Accessing knowledge on seed production and management to set up rural seed enterprises</p>	<p>Private entrepreneurs</p> <p>NGOs</p>
Bhutan	Integrated community development	Social mobilisation, improved access to education, vocational training and better housing to improve living conditions of poor tribal populations in remote villages	NGO and Government
Pakistan	Organic agriculture	Production and marketing innovations that link traditional knowledge to emerging market demands	Individuals/Social entrepreneurs, NGOs
India	Handlooms	Innovations in design and marketing	Private sector and NGOs

## **CASE STUDY REFERENCES**

Shakya, D.B. (2009). Horticultural Innovations in Nepal: Some Successful Models.

Hirimburegama, Kshanika and Wickremasinghe, Seetha (2009). Technological and Institutional innovations in Horticultural Fruit Sector for Rural Development in Sri Lanka.

Muhammed Taher (2009). The Missing Quotient: Rural Innovation in Bangladesh.

Roseleen Gurung (2009). The Integrated Community Development Model in Bhutan.

Hina Lotia (2009). Return to our Roots: Rediscovering Pakistan's Agricultural Heritage.

Kumuda Dorai (2009). Innovation under Wraps: The Handloom Sector in India.

## APPENDIX 2: WORKSHOP AGENDA

**Day 1: August 19, 2009**

<b>9.00-10.20 am</b>	<b>SESSION I: INAUGURATION</b>
9.00-9.05 am	Welcome Dr. Rajeshwari Raina, Centre for Policy Research (CPR), New Delhi
9.05-9.15 am	Introduction to the workshop Dr. Rasheed Sulaiman V. Director, Centre for Research on Innovation and Science Policy (CRISP), Hyderabad
9.15-9.50 am	Inaugural address Dr. T. Ramasami Secretary, Department of Science and Technology Government of India
9.50-10.00 am	Remarks Dr. Anupam Khanna Senior Fellow, Global Development Network (GDN) New Delhi
10.00-10.10 am	Remarks Prof. Stephen McGurk Regional Director IDRC, New Delhi
10.10-10.15 am	Vote of Thanks
10.15-10.45 am	<b>Tea/Coffee</b>
<b>10.45 am-12.30 pm</b>	<b>SESSION II: Innovation Policy and Implications for Benchmarking Innovation Capacity</b>

**Chair:** Dr. D. Raghunandan, Director, Centre for Technology and Development, New Delhi

10.45-11.10 am	Shifting from science and technology policy to innovation policy Dr. Andy Hall UNU-MERIT
11.10 am-12.15 pm	Discussion/ Benchmarking exercise
12.15-1.00 pm	<b>Lunch</b>

**1.00-3.30 pm**                      **SESSION III: Country presentations**

(20 minute presentation by each paper writer + 30 minutes discussion)

**Chair:** Dr. D. Raghunandan, Director, Centre for Technology and Development (CTD), New Delhi

**Nepal:**                      Horticultural Innovation in Nepal: Some Successful Models  
Dr. Deva Bhakta Shakya  
Executive Director, Agro-Enterprise Centre,  
Federation of Nepalese Chambers of Commerce and Industry,  
Kathmandu

**Sri Lanka:**                Technological and Institutional Innovations in Horticultural Fruit  
Sector for Rural Development in Sri Lanka  
Prof. Kshanika Hirimburegama  
Vice Chancellor, University of Colombo

**Bangladesh:**            The Missing Quotient: Rural Innovation in Bangladesh  
Dr. Muhammed Taher  
Technology Policy and Development Consultant, Dhaka

3.30-3.45 pm                **Tea/Coffee**

**3.45-6.30 pm**                      **SESSION III: Country presentations (Contd.)**

**Chair:** Dr. Seetha I. Wickremasinghe, Principal Scientific Officer and Head, S&T Policy Research Division, National Science Foundation, Sri Lanka

**Bhutan:**                    The Integrated Community Development Model in Bhutan  
Roseleen Gurung  
Programme Officer, Tarayana Foundation, Bhutan

**Pakistan:**                Return to our Roots: Rediscovering Pakistan's Agricultural  
Heritage  
Hina Lotia  
General Manager, Programme Development Department  
LEAD Pakistan

**India:**                      Innovation under Wraps: The Handloom Sector in India  
Kumuda Dorai  
Programme Officer, LINK, Hyderabad

7.00-9.00 pm                **Workshop Dinner**

**Day 2: August 20, 2009**

**9.30 am-1.00 pm SESSION IV: Discussion on Developing a Methodology for Innovation Capacity Benchmarking**

**Facilitator:** Dr. Andy Hall, UNU-MERIT

9.30-9.50 am Implications for Benchmarking Rural Innovation Capacity  
Erika Kraemer  
Research Officer, University of Brighton, UK

9.50-11.00 am Discussion

11.00-11.20 am **Tea Break**

11.20 am-1.00 pm Discussion continues

1.00-2.00 pm **Lunch**

**2.00-4.00 pm SESSION V: Country Perspectives and Discussions on Ways Forward**

**Chair:** Dr. Veena Ravichandran, Innovation, Policy and Science Programme, IDRC, Ottawa

2.00-2.10 pm Latin American Perspectives  
Edith Fernandez Baca  
CONDESAN, Peru

2.20-2.30 pm Country Perspectives: Bangladesh  
Md. Zabed Ali Sorker  
Deputy Director (Systems), Bangladesh Computer Council

2.30-2.40 pm Country Perspectives: Pakistan  
Dr. Ali Tauqueer Sheikh  
Executive Director, LEAD Pakistan

2.40-2.50 pm Country Perspectives: Sri Lanka  
Dr. Seetha Wickremasinghe  
Principal Scientific Officer and Head, S&T Policy Research  
Division, National Science Foundation, Sri Lanka

2.50-3.30 pm Discussion on Ways Forward

3.30-3.45 pm **Tea/Coffee**

3.45-4.00 pm **Wrap up**

### APPENDIX 3: LIST OF PARTICIPANTS

<b>Participant</b>	<b>Title and Organisation</b>	<b>Email ID</b>
1. Ali Tauqueer Sheikh	Executive Director, LEAD, Pakistan	atsheikh@lead.org.pk
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7. Dr. Seetha I. Wickremasinghe	Principal Scientific Officer and Head, S&T Policy Research Division, National Science Foundation, Sri Lanka	seethaiw@nsf.ac.lk
8. Prof. Kshanika Hirimburegama	Vice Chancellor, University of Colombo, Sri Lanka	hirimk@pts.cmb.ac.lk
9. Dr. Muhammed Taher	Technology Policy and Development Consultant, Dhaka	Taher.md@gmail.com
10. Md. Zabed Ali Sorker	Deputy Director (Systems), Bangladesh Computer Council	zasorker@bcc.net.bd
11. Roseleen Gurung	Programme Officer Tarayana Foundation, Bhutan	roseleengurung@gmail.com
12. Erika Kraemer-Mbula	Research Officer, University of Brighton, UK	erikakm@gmail.com

<b>Participant</b>	<b>Title and Organisation</b>	<b>Email ID</b>
13. Edith Fernandez Baca	Regional Officer, Mountain Partnership Secretariat (MPS), CONDESAN, Peru	E.Fernandez-Baca@cgiar.org
14. Dr. D. Raghunandan	Director, Centre for Technology and Development, New Delhi	ctd.delhi@gmail.com
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16. Dr. Anupam Khanna	Senior Fellow, Global Development Network (GDN)	anupamk@gdnet.org
17. Dr. Andy Hall	Senior Researcher, UNU-MERIT and Coordinator, LINK	andyhallmails@yahoo.com
18. Dr. Mohammad Rais	Scientist, NISTADS, New Delhi	mohammad_rais@hotmail.com
19. Dr. Sunita Sangar	Fellow, Society STADD, New Delhi	sunitasangar@yahoo.com
20. Dr. T. Ramasami	Secretary, Department of Science and Technology, Government of India	dstsec@nic.in
21. Prof. Stephen McGurk	Regional Director for South Asia and China, IDRC, New Delhi	saro@idrc.org.in
22. Dr. Veena Ravichandran	Senior Program Officer, ITS (innovation, Technology and Society), Program and Partnership Branch, IDRC	vrvichandran@idrc.ca