

Farmer First Revisited: Innovation for Agricultural Research and Development

Workshop Summary: April 2008

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Looking back to look forward

In July 1987, some 50 social and natural scientists of roughly equal numbers met at the Institute of Development Studies (IDS) at the University of Sussex, UK, for a workshop on *'Farmers and Agricultural Research: Complementary Methods'*, later more generally known as the *'Farmer First'* workshop ([Chambers et al, 1989](#)). That event marked a key moment in the development of approaches to farmer participation in agricultural research and extension, drawing together experiences from a diverse range of individuals and organisations from both North and South. Since then, methodological, institutional and policy experiments have unfolded around the world, aimed at 'putting farmers first'.

Twenty years later, in December 2007, some 80 agricultural practitioners, researchers, farmer leaders and donor representatives gathered at IDS to reflect on the achievements, failures and missed opportunities of the past two decades, assess the current state of farmer-centred research and development (R&D) and consider prospects for the future. The gathering aimed to critically examine how these participatory experiments have panned out, particularly at a time of renewed interest in 'agriculture for development' and the widespread recognition of the need for effective R&D systems. What has worked, what hasn't and why? Moreover, given the radically changed contexts facing poor farmers in the developing world today – including increasingly globalised and vertically integrated agri-food systems, changed configurations of public and private R&D, and new governance arrangements affecting innovation systems – how should the challenges and priorities of farmer participation in agricultural research and extension be seen in the 21st century?

A lot has changed in the years between the two Farmer First workshops. New shocks and stresses are evident – from climate change to HIV/AIDS – with major implications for farming livelihoods. New economic relations and connections are apparent, particularly around the market, with increasingly globalised linkages. New patterns of urbanisation and industrialisation are affecting the roles of agriculture in wider economic and political processes. And new agricultural technologies, including GM crops, offer both opportunities and risks. Access to technologies is an increasing concern, as patterns of ownership shift towards the private sector and public provision continues to decline.

Yet much remains the same – particularly in the poorer, marginalised parts of the world: the complex, diverse and risky contexts where Farmer First approaches were first advocated. Poverty remains concentrated in rural areas and most of the rural poor depend, directly or indirectly, on agriculture for their livelihoods. Agriculture remains the main source of livelihoods for an estimated 86 percent of rural people (2.5 billion people), and for many countries, the main opportunity for sustained, employment-based growth. Furthermore, technology development, adaptation and spread continues to be a key policy concern, with a focus on the potentials for an African 'Green Revolution' back on the international agenda, particularly in Africa.

Tracing twenty years of innovative practice

The Farmer First Revisited workshop highlighted a vast range of innovative practice and experimentation over the past 20 years in farmer participatory approaches and methods. 'The Farmer First movement' – a loose and diverse coalition of people, networks and organisations committed to developing, promoting and sharing bottom-up, farmer-centred approaches to technology development for agriculture – has made great progress on many fronts.

Examples presented at the workshop were numerous and included, among others:

- Participatory plant breeding involving farmers in trait selection and breeding programmes across a range of crops, discussed by [Jacqueline Ashby](#), [Jean Claude Rubyogo and Louise Sperling](#), [John Witcombe and colleagues](#), and others at the workshop;
- Participatory development of technical innovations and 'research into use', reviewed by [Oscar Ortiz, et al](#), [Dindo Campilan, et al](#), [Kerry Albright](#), [Boru Douthwaite and Martin Gummert](#), and others;
- Participatory extension and learning approaches, examined by [Hlamini Ngwenya, Jürgen Hagmann and colleagues](#), [Amanuel Assefa](#), and [Rob Tripp](#), including Farmer Field Schools for farmer-based learning about integrated pest management, soil fertility and so on, such as the case reviewed by [Yunita Winarto](#);
- Farmer-scientist research partnerships to promote innovation in diverse, risk-prone agricultural systems, reviewed by [Niels Röling and Janice Jiggins](#), [Scott Killough](#), [Bernard Triomphe and colleagues](#), [Richard Ewbank](#), [Danni Romney and others](#);
- Experiences with the development, testing and spread of the System of Rice Intensification (SRI), presented by [Shambu Prasad](#) and [Norman Uphoff](#);
- Networks for sharing farmer experimentation and rural innovation, such as the Honey Bee Network ([Anil Gupta](#)), PROLINNOVA ([Ann Waters-Bayer and colleagues](#)), LEISA ([Edith van Walsum](#)), the DURAS experience ([Oliver Oliveros](#)), and AGRIDAPE and PROFEIS ([Awa Faly Ba](#) and [Assetou Kanouté](#));
- The changing role of farmer organisations and federations for creating demand and increasing accountability in a range of contexts, described by [Monty Jones and Sidi Sanyang](#), [Beatriz del Rosario](#), [Nduati Kariuki](#), [Elizabeth Vargas and William Burgoa](#), and [Khamarunga Banda](#)
- Efforts to build coalitions and activist social movements to drive policy change at different levels, reviewed by [Patrick Mulvany and Maria Arce](#), [Cecilia Turin](#) and [Anil Gupta](#);
- Co-management approaches to improve the bargaining power of natural resource users and common property managers, discussed by [Ruth Meinzen-Dick](#), [Ravi Prahbu, et al](#) and [Zhao-Li Yan](#), and the use of interactive methods for addressing the political ecology of resource use in complex environments, presented by [Virginia Nazarea](#) and [Todd Crane](#);
- Novel strategies for empowering communities through agro-enterprise promotion and market-led development, discussed by [Susan Kaaria, et al.](#), [Jemimah Njuki and colleagues](#), [Michael Kibue](#), [Clive Lightfoot and Ueli Scheuermeier](#), and [Julieta Roa](#);

- The use of a range of innovative media (video, mobile phones, internet) for farmer-to-farmer sharing of ideas and information, described by [Paul van Mele](#), [Ahmad Salahuddin](#), [Vincon Nyimbo](#) and others;
- Participatory approaches to improve monitoring and evaluation, impact assessment and learning, reviewed by [Adrienne Martin](#), [Boru Douthwaite and Martin Gummert](#), [Irene Guijt](#), [Pascal Sanginga and others](#), including approaches for analysing participatory impact pathways ([Boru Douthwaite](#)) and for informing policy from below ([Dawit Abebe and others](#));
- Innovative approaches to promoting effective public-private partnerships in agricultural R&D, examined by [Gospel Omany and colleagues](#), [Steve Sloan and Andy Peters](#), [Bino Témé, et al](#), and [David Spielman and others](#);
- Strategies for enhancing institutional learning and organisational change, particularly in large agricultural R&D bureaucracies, discussed by [Ruth Meinzen-Dick](#), [Jamie Watts and Douglas Horton](#), and [Rasheed Sulaimann](#);
- Pioneering approaches for institutionalising participation in agricultural education systems, presented by [Andy Catley](#), [Jürgen Hagmann and colleagues](#), [Jethro Pettit](#), [Xiaoyun Li, et al](#) and [Maria Fernandez and Oscar Ortiz](#).

These approaches, and many others, have been documented, tested, adapted and extended across a range of sites and engaging a wide range of organisations – from international research centres, part of the Consultative Group on International Agricultural Research (CGIAR), to national research and extension organisations to NGOs to farmers' own organisations, federations and associations. There has been a veritable explosion of activity, some successful, some less so.

Across this activity, what shifts in approaches to agricultural research and development have occurred? What changes in paradigmatic assumptions have occurred? And what are the new directions emerging? These questions were posed throughout the workshop, and particularly during a collective exercise looking at the changes in approaches and assumptions. This built on a diagram produced in 2005 as part of the International Assessment for Agricultural Science and Technology for Development by a number of participants, including Robert Chambers, Maria Fernandez and Andy Hall. This highlighted three approaches – transfer of technology, farming systems research and Farmer First/FPR, and contrasted them with 'interactive learning for change'. For the workshop exercise we left the fourth column, as well as a number of rows, blank and asked participants to suggest ideas against the various criteria. Table 1 offers a summary of these deliberations, with the right hand column and all rows marked with an asterisk being a (very condensed) summary of participants' contributions.

Table 1: Changing approaches to agricultural research and development

	Transfer of Technology	Farming Systems Research	Farmer first / Farmer participatory research	People-centred innovation and learning
Era	Long history, central since 1960s	Starting in the 1970s and 1980s	From 1990s	2000s
Mental model of activities	Supply through pipeline	Learn through survey	Collaborate in research	Innovation network centred on co-development; involving multi-stakeholder processes and messy partnerships
Farmers seen by scientists as	Progressive adopters, laggards	Objects of study and sources of info	Colleagues	Partners, collaborators, entrepreneurs, innovators: organised group setting the agenda, exerting demand: 'the boss'
Scientists as seen by farmers*	Not seen – only saw extension workers	Used our land; asked us questions	Friendly consumers of our time	One of many sources of ideas
Knowledge and disciplines*	Single discipline driven (breeding)	Inter-disciplinary (plus economics)	Inter-disciplinary (more, plus farmer experts)	Extra/trans-disciplinary – holistic, multiple culturally-rooted knowledges
Farmers' roles	Learn, adopt, conform	Provide information for scientists	Diagnose, experiment, test adapt	Empowered co-generators of knowledge and innovation; negotiators
Scope	Productivity.	Input output relationships	Farm based	Beyond the farm gate – multi-functional agriculture, livelihood/food systems and value chains across multiple scales, from local to global; long time frames
Core elements	Technology packages	Modified packages to overcome constraints	Joint production of knowledge	Social networks of innovators; shared learning and change; politics of demand
Drivers	Supply push from research	Scientists' need to learn about farmers' conditions and needs	Demand pull from farmers	Responsiveness to changing contexts – markets, globalisation, climate change. Organised farmers, power and politics.
Key changes Sought	Farmer behaviour	Scientists knowledge	Scientist-farmer relationships	Institutional, professional and personal change: opening space for innovation
Intended outcome	Technology transfer and uptake	Technology produced with better fit to farming systems	Co-evolved technology with better fit to livelihood systems	Capacities to innovate, learn and change
Institutions and Politics*	Technology transfer as independent: assumed away	Ignored, black boxed	Acknowledged, but sometimes naïve populism	Central dimensions of change
Sustainability*	Undefined	Important	Explicit	Championed – and multi-dimensional, normative and political
Innovators	Scientists	Scientists adapt packages	Farmers and scientists together	Multiple actors – learning alliances

Such a table of course gives a too simplistic a version of a very complex reality. It should not be read to imply that ‘transfer of technology’ is all bad and ‘people-centred innovation and learning’ is all good. There are elements of each that are important in different circumstances. The aim, though, is to highlight how more recent experiences and thinking challenges certain assumptions and shifts the frame of reference.

But what does it all add up to? Has the Farmer First movement made a difference? And what are the new challenges, given the new contexts and trends? Offering nearly [70 papers](#) across a wide range of themes, the [three-day workshop](#) was appropriately diverse in its coverage and critical and reflective in its analysis. Furthermore, with participants from over 40 countries, across six continents, and involving natural and social scientists, active farmers and office workers from research organisations, NGOs, farmers’ organisations, donors and the private sector, we had plenty of collective experience to draw from.

From farmers and technologies to systems of innovation

A key thread of the three-day conversation focused on the need to move beyond a concentration on the interaction between ‘farmers’ and ‘technologies’ to a wider systems perspective. The concept of the innovation system was introduced in a number of contributions, and most notably in an opening paper by [Andy Hall](#). Long used in business studies and assessment of industrial countries, an innovation systems approach was seen to be helpful in extending our understanding of relationships between farmers (in their rich and complex diversity) and other actors through market interactions.

This focus on ‘beyond the farm’ was an important strand of discussion at the workshop, and one that differed significantly from twenty years ago. There was a general recognition that complex value chains, sometimes stretching to global markets, were a key feature. These offered both opportunities – for example, for gaining access to markets for higher value agricultural commodities – and challenges – for example, around meeting food safety standards or confronting asymmetries in market power. A number of papers highlighted how participatory methods and approaches had been applied to both the diagnosis of market chain challenges and opportunities, as well as the facilitation of change in market systems. Thus for example, [Julieta Roa](#) and [Dindo Campilan and others](#) offered overviews of UPWARD’s south-east Asian experience with the ‘market chain approach’. [Jemimah Njuki](#) similarly offered examples of how participatory analysis of community agro-enterprises in Uganda and Malawi had identified important entry points for support. [Susan Kaaria](#) showed how the ‘enabling rural innovation’ approach had empowered different groups, particularly women, engage with new market opportunities. [Vincent Nyimbo](#), as well as [Clive Lightfoot and Ueli Scheuermeier](#), showed how practical, participatory interventions could enhance market access and improve livelihoods through the ‘First Mile’ and ‘Linking Farmers’ approaches.

Together with an explosion of methodological innovation, alongside a seemingly bewildering range of branded approaches, methods and processes, there have been a variety of efforts to create new platforms for interaction between farmers, farmer groups and businesses along the value chain. Applying participatory methods to small, and even large-scale, businesses has been highly productive, as has the wider value chain participatory diagnosis. This blossoming of interest in market linkages and beyond the farm-gate actors in the last decade or so has come in response to the particular challenges of structural adjustment and neo-liberal economic reform in many countries, combined with the rapidly evolving dynamics of economic globalisation. These processes have had profound effects on farmers. No longer is the small-scale farming world the preserve of benevolent state support and relatively constrained marketing linkages, but, with the collapse or retreat of public support to

the farming sector and the growth in private sector activity, farmers are much more exposed to the dynamic challenges of an increasingly globalised market. This brings winners and losers. Many of the experiences discussed at the workshop were focused on making sure that potential benefits were more widely shared, particularly among women and poorer, more marginalised farming communities.

But how far can participatory interventions go, in the context of a highly unequal economic system? Even at the micro-scale, a number of the cases highlighted how, when market access was opened up for women, these opportunities were often short-lived as better-off men wanted to capture the benefits. Thus, the wider challenges of the political economy of markets was emphasised by some participants, including [Maria Arce and Patrick Mulvany](#) who argued for a more radical set of interventions based on 'food sovereignty', rather than tampering at the margins with the existing system.

Debates between the market pragmatists and the radical idealists continued through the workshop, but all agreed that branded approaches and methods were not enough. While participatory diagnosis – some of it highly sophisticated and nuanced – was important, the wider challenges lay in changing the rules of the game – in political, institutional and organisational change. If a Farmer First approach is to make a difference in the context of the growing challenges and opportunities of globalisation, it will emerge through a focus on these dimensions, participants argued.

Innovation systems, innovation directions

In the last decade therefore much effort has been invested in going beyond the farm and the farmer, and beyond a focus on technology to the wider innovation system. This has been an important analytical step which has highlighted the importance of addressing markets, value chains, supply systems and all the links between producers and consumers. But, workshop participants argued, such a systemic, analytical description of innovation systems is not enough. Describing multiple stakeholders and complex connections is important, but there are judgements to be made, and political and normative processes are involved. For example: who defines the boundary of the system? Who is in and who is out? Which elements are important and which are less so? And, critically, where is the system heading – towards what goals and outcomes? Not surprisingly it was these more normative-political questions that were of major concern to the Farmer First Revisited participants. Putting farmers first is not just a technical-analytical exercise, but also highly political one. A commitment to social justice, equity, gender equality and poverty reduction is thus central to this agenda.

This means that an examination of innovation systems cannot stop at an analytical, mechanical assessment of the system and its functioning, but must address the thorny, normative questions about directions and trajectories, trade-offs and competing interests. This requires a focus on processes and the properties that emerge from complex, non-linear systems. This in turn means asking about system resilience to shocks and stresses; for example the increasingly evident consequences of climate change. Thus, while there was much fruitful discussion around the application of value chain approaches linking a Farmer First approach to concerns with market access and input/output supply chains, at domestic, regional and global levels, these were seen as components of a bigger challenge for Farmer First approaches.

Yet, in moving away from a farmer/technology focus to an innovation systems perspective, a number of tensions and polarities in approaches were evident. Should a Farmer First approach stick to a practical, instrumental, intervention-oriented stance which ensures that farmers get a better deal from technology development or markets or should a more political

stance be taken which emphasised engagement in complex processes, with a strong normative positioning? Both approaches were seen by participants at the Farmer First Revisited workshop as important, but the latter was seen as probably the least well developed over the past 20 or so years – and certainly less compatible with the institutionalisation of ‘participation’ in donor-funded project activities and in large, often highly conventional, R&D organisations and science bureaucracies.

Some of these tensions highlighted by the workshop debate can be illustrated in a simple diagram (Figure 1). Here two axes are identified, both central to workshop discussions. First, horizontally, different ways of understanding the world, and describing causation – along a continuum from mechanical to process based reasoning. Second, vertically, there are different ways of acting in the world, along a continuum from an analytical to a normative approach.

Figure 1: Alternative ways of thinking about innovation systems

	Mechanical	Process-oriented
Analytical	Top down, linear, transfer	Complexity systems, emergence, learning organisations
Normative	Instrumental ‘pro-poor’ approaches	Power, politics, learning, reflexivity

While such contrasts and comparisons miss out on the detail and nuance, they do highlight some important issues. For, across these two axes, there were a range of tensions, dilemmas, contrasts and polarities highlighted in the workshop discussion, and indicated by the following words and phrases.

Mechanical	Process
Hard systems	Soft systems
Interventionist	Emergent process
Planned	Experimental, learning
Managed	Reflexive
Supervised network	Unsupervised network
Top down	Bottom up

Analytical	Normative
Apolitical	Political
Interaction	Power relations
Organisations (structures)	Institutions (rules/processes)
Formal markets	Real (social/political) markets

Different people, different processes and different organisations will find themselves positioned along these axes and across these continua at different times and for different reasons. There is of course no right or wrong way of doing things. And all involve action, intervention and a commitment to farmer-led change in different ways. But the way such action is defined, its directions and consequences are deeply implicated by the way problems and solutions are framed, and by whom. Thus, depending on where you start, the things you do – whether research, extension, impact assessment or networking – will look very different. Indeed, as discussed in more depth below, as we move towards a more normative and process-oriented stance on innovation systems (following the arrow in Figure 1), then these standard elements of agricultural research and development will look very different indeed.

Agricultural science and the politics of knowledge

An important running theme of the workshop, and the main focus of a key working group session introduced by [Melissa Leach](#), was the politics of knowledge. Picking up on the themes of the 1992 Beyond Farmer First workshop and subsequent book ([Scoones and Thompson 1994](#)), this discussion highlighted the need to go beyond the conventional distinctions between indigenous and scientific, traditional and modern, local and global, practical and theoretical knowledge to a more integrative, hybrid version of contested, located knowledges which are continuously in the making. Such knowledges may be made up of technical elements, but also, critically, cognitive processes. Knowledges too are both discursive ('in the head') and practical ('in the body'), based on experiential, emotional and sensory sources. Equally, such knowledges are both individually held (and therefore gendered), but also socially distributed, across networks, institutions and social movements.

This recognition of multiple knowledges, and particularly those associated with farmers and rural people, has of course been central to the Farmer First approach. But how does this recognition articulate with a perspective on innovation systems? Is the challenge to try and incorporate diverse knowledges in an innovation system or to recognise that different knowledges (and combinations of these) create different innovation systems, with different values, politics and directions?

It was this latter perspective which was highlighted by the discussion. Here a political perspective on knowledge and innovation is suggested which goes beyond the instrumental project of combining 'stocks' or 'bodies' of knowledge to a focus on negotiating between competing visions and pathways. This inevitably results in, as Shambu Prasad put it, 'fraught encounters', and often challenging negotiations over knowledge, the means of validation and the processes of framing. Sometimes behind 'front-stage' consensus, there is much 'back-stage' conflict, and it is this dissent, debate and dissonance which must be acknowledged and embraced in any effective Farmer First approach, it was argued.

Contributions at the workshop highlighted a wide range of models of spread of knowledge, ideas, practices and techniques. Some were formal and institutionalised; others highly informal. But all showed the limits of the standard diffusion models that have so dominated thinking about research, extension and development linkages over time. Different case studies presented highlighted the importance of knowledge entrepreneurship and marketing, of key moments and events, of champions of change, and of networks and alliances. Thus, [Shambu Prasad](#) talked of "the messy playful encounters of everyday practice where farmers, scientists and civil society are engaging in an uneven dynamic knowledge market place". Or as [Robert Rhoades](#) put it: "The key to reconciling the needs of scientists and of local needs is seeking new forms of equitable collaboration which reach beyond the...now somewhat tired discourse of 'participation.'" The social and political dimensions of knowledge

generation and spread – whether through formal or informal, visible or hidden processes – were emphasised time and time again.

In sum, processes of research and development were seen to be centred on contestations over multiple framings – of goals and visions, as well as technologies and plans – and processes of co-construction of meanings, interpretations and solutions. As this is an intensely social and political process, it involves creating, extending and sustaining complex, hybrid networks (of people, artefacts, ideas and institutions), a far cry from simple diffusion of improved technologies and practices. For some, such as [Paul Richards](#), this is best done through unsupervised, self-organising networks. For others, more structured approaches are seen to help facilitate the same ends. For example, [Hlamalani Ngwenya and Jürgen Hagmann](#) highlighted their ‘facilitation for change (F4C)’ approach to triggering emancipation and innovation in rural communities, while [Edith van Walsum](#) talked of ‘global knowledge networking’ for low-external input sustainable agriculture, [Bernard Triomphe](#) of ‘multi-stakeholder research partnerships’ and [Jamie Watts and Doug Horton](#) of a ‘learning laboratory’. These efforts, and many others featured at the Farmer First Revisited workshop, are centrally engaged in creating the space for knowledge dialogues which build bridges between different actors, extend networks and create new, shared languages for action and change.

Beyond the pipeline model: towards learning approaches to agricultural R&D

Over the past two decades, Farmer First approaches have challenged the standard ‘transfer of technology’ pipeline model in fundamental ways, arguing that the separation of basic ‘upstream’, centralised research from applied ‘downstream’ adaptive, decentralised research was inappropriate and that farmers, as users of technology and research, needed to be involved throughout the research system, as part of a collaborative network, in processes of ‘participatory technology development’ (PTD). This, it has long been argued and increasingly demonstrated, will produce better products, foster greater uptake and improve impact.

There is much evidence for this, and the engagement of farmers in Participatory Plant Breeding (PPB) has been an impressive example with wide impacts in a range of settings, as illustrated by contributions from [John Witcombe](#), [Jean Claude Rubyogo and Louise Sperling](#) and colleagues. As [Jacqueline Ashby](#) observed, this work has highlighted the key importance of interaction with farmers in the early stages of the plant breeding process, when breeding objectives are set, and the advantages of decentralising breeding programmes to conduct varietal selection with farmers in diverse, local environments.

Farmer engagement through Farmer Field Schools (FFS) has also enhanced the uptake and adoption of new knowledge, skills and techniques in a variety of areas, most notably Integrated Pest Management (IPM) as shown in the contribution from Indonesia by [Yunita Winarto](#). Farmer field schools are also used in root crop agriculture programmes (e.g., sweet potato integrated crop management), as described by [Dindo Campilan](#) and colleagues from the Users’ Perspectives with Agricultural Research and Development (UPWARD) programme, an Asia-wide network supporting participatory research and development in agriculture and natural resource management. Some innovative programmes have combined the best of PPB, FFS and IPM, such as the case related by [Oscar Ortiz](#) and colleagues on understanding the potato innovation systems in Bolivia, Ethiopia, Peru and Uganda and identifying the factors that influence scaling-up and out of participatory methods from the point of view of farmers, field practitioners and institutions.

Similarly, participatory extension approaches to promote agricultural innovation have been developed through a variety of pioneering efforts, many of these involving partnerships

between international and national agricultural R&D institutes, NGOs, private agencies and farmer-led organisations (e.g., [Assefa](#); [van Mele](#); [Sulahuddin, et al](#); [Ngwenya and Hagmann](#)).

As many of the contributors acknowledged, however, despite these successful cases some of these experiences have been relatively limited add-ons, and farmer participation has been bolted on to essentially old-style technology transfer approaches. These have been improved as a consequence – with both better science and better uptake resulting, and should not be knocked. But the more transformative hopes of the Farmer First approach have often not been fully realised, where true reversals of learning, hierarchy and power are central.

In these perspectives of course the old categories and boundaries of research and extension break down. These become less meaningful when the metaphors of technology transfer and pipeline are replaced with concepts of co-learning and co-construction. Indeed, some asked why were we asking such questions as ‘what is the future of extension?’ at all, when such terms themselves are based on outmoded and inappropriate concepts and categories.

Assessing impact

Such a challenge is perhaps most acute when we come to approaches of assessing impact. Here conventional approaches that assume singular, identifiable and measurable inputs which relate to particular outputs are increasingly irrelevant. There has been a massive explosion of activity around participatory monitoring and evaluation and impact assessment in recent years, as shown in the paper by [Irene Guijt](#). This work has highlighted:

- A recognition of the political process of framing and defining what is being assessed (what is an *impact*), and the need to negotiate this among different participants;
- The need for cycles of action, learning and reflection in any research-development process, with monitoring and evaluation about continuous learning and change;
- The requirement to adapt and combine methodologies – quantitative and qualitative, participatory and extractive – in impact assessment and evaluation processes;
- The need to involve all stakeholders in the process in a collective negotiation of objectives/visions, systems framings, methods and results to enhance joint learning and action;
- The need for investment of resources, skills and effort in such processes, and not assume that this can be done after the event;

There is still a significant degree of controversy on how the impact of participatory research and development approaches should be assessed. This is becoming more relevant as agricultural R&D is increasingly located within multi-stakeholder innovation platforms and integrated research-for-development processes. Demonstrating ‘impact’ has become a core requirement of our audit-driven approach to development. But too often this results in a narrow, mechanical approach where arbitrary measures and indicators and inappropriate counter-factuals are imposed on what ought to have been an embedded, engaged learning approach.

Moreover, in most cases, the emphasis is on ‘upward accountability’, focusing attention on gathering data and tracking performance to meet the reporting requirements of donor

agencies, and, and in the case of public services, the state. This may meet criteria such as transparency, efficiency and cost-effectiveness, but with little emphasis on 'downward accountability', where the performance of public or private service providers is monitored and evaluated by or for local populations and end users of agricultural services, through, for example, establishing contractual or collaborative linkages between farmers' organisations and service providers.

Accountability to service users implies accountability for results, where their voice is influential in defining and measuring success. Why is this organisation choosing this course of action rather than another one? How (with whom) has it defined its 'theory of change' and its strategy? Why select these indicators of success rather than others? Understanding accountability as an ex-post 'accounting' of what an organisation has already done presupposes that organizations possess a unique and fixed understanding of what needs to be done in the first place. This is different from an 'ex-ante engagement', understanding what needs to be done, and what is the best way to do it and assess it. This, participants concurred, requires a means for continuous learning about what worked well, what went wrong, and why.

But convincing others that a more process and systems-oriented approach centred on participation and continuous learning is needed is often difficult. And confusions, misunderstandings and parallel initiatives are too often the result. As [Adrienne Martin](#) observed, "There has been important progress in demonstrating the different outcomes made by participatory approaches, but there remain differences in how the contribution of participatory research [and development] is judged, what evidence is considered valid and by whom."

The workshop discussion focused on a range of recent experiences, including the challenges of convincing the CGIAR Science Council of the merits of a process-oriented approach for the Sub-Saharan Africa Challenge Programme led by the Forum for Agricultural Research for Africa (FARA), which was outlined in a scene-setting speech by [Adewale Adekunle](#), speaking on behalf of Monty Jones. Participants concluded that there is a need to work on and extend rigorous evaluation and impact assessment approaches, such as those shared by [Boru Douthwaite](#) and [Dawit Abebe](#), among others, and make these central to any farmer participatory research and development initiative. Other contributors, including [Irene Guijt](#) and [Jamie Watts and Douglas Horton](#) also emphasised the importance of using impact assessments to link action research and action learning to facilitate effective communication and knowledge sharing among practitioners and leaders of pro-poor agricultural innovation processes.

Generating demand and ensuring accountability

So what of the future? What elements does the Farmer First movement need to recapture, reinvent and reinvest in? Many argued it is the process-oriented, normative stance which needs more emphasis, given the experience of farmer participatory research over the last 20 years. For a variety of reasons, largely as a result of the 'success' of Farmer First arguments in the mainstream of development, there has been a strong tendency towards the more mechanical and analytical end of the spectrum (see Figure 1).

In a powerful opening presentation, [Jacqueline Ashby](#) argued this case, observing that "efforts to drive forward the farmer-first paradigm in science bureaucracies were fundamentally flawed by an overinvestment in reforming the supply-side of innovation in organizations that lacked then – and still lack – accountability for satisfying demand for innovation from the poor. As a result, the individual actors and champions of change in this

process were broadly divorced from other socio-political actors who drive organizational change and lacked a real power base from which to lever changes that were more than cosmetic. The essential challenge for the future is to address the political dimensions of demand for farmer-first innovation in the agricultural sector.”

This was an important and sobering lesson, particularly from someone who has pioneered farmer participatory research approaches in the international research system over many years. But this emphasis on recapturing the political and normative dimensions was echoed by many other papers, and was central to much of the discussion. For example, [Monty Jones and Sidi Sanyang](#) from the Forum for Agricultural Research in Africa (FARA) called for renewed attention to the “politics of demand”, and argued for the critical role of farmers’ organisations in setting priorities for R&D activities in Africa, if a Farmer First approach is to be realised. This was a view widely shared among contributors to the workshop.

In sum, much debate centred on how to create an accountable, democratic R&D system which is responsive to the diverse needs of diverse farmers? This is of course no easy task. Discussions in the workshop’s working groups focused on a number of ways forward. These had to work on both sides of the equation: building demand and exerting voice from users and ensuring responsiveness and accountability from the suppliers.

Strengthening the capacity of farmers’ organisations

There is always much talk about the importance of farmers’ organisations at workshops concerned with farmer participatory research, but not a lot of action that follows. Participants at the Farmer First Revisited event were emphatic that this should not be repeated here. Galvanised by a series of contributions from farmers’ organisations, from Asia (e.g., [del Rosario](#)), Africa (e.g., [Banda](#); [Kariuki](#); [Faly Ba](#); [Kanouté](#); [Sasu](#)); and Latin America (e.g., [Vargas and Burgoa](#); [Turin](#)) the discussions centred on how, in widely differing political contexts, organisations involving and representing farmers can create demand and improving the bargaining their members through cooperation and collective action (cf., [Meinzen-Dick](#)).

The political clout of farmers’ organisations – both in broader national politics or more specifically within R&D systems – is hugely variable. The responsiveness of some states where there is an increasing commitment to farmers’ demands, such as Bolivia (cf., [Mulvaney and Arce](#)) contrasts sharply, it was argued, with others, such as India and China (cf., [Sulaiman](#); [Zhaoli](#)), where farmers are increasingly marginalised from political and bureaucratic processes, with the rise of other economic growth agendas associated with the growing influence of an urban middle class. A vital challenge is the need to go beyond the co-option of farmers and their organisations in technology development processes to a more fundamental engagement with institutional and policy issues. Access to research results and information was seen as key, and the role of information translators/brokers was seen as critical, although often no substitute for farmers themselves being engaged in both the conduct and interpretation of research results.

But, according to participants, the experience of full involvement of farmers’ organisations in R&D processes was, despite the rhetoric, patchy to say the least. Beyond some nominal representation, farmers are often not involved in the overall governance of research organisations, and rarely engaged in budget allocation and priority setting outside often rather orchestrated ‘consultations’. The lack of lobbying and advocacy capacity of many farmers’ organisations, particularly in Africa, was noted, although this contrasts with (some) more positive experiences from Latin America (cf., [Turin](#) – Peru). Potentials for sharing of experiences, capacities and strategies were identified as an opportunity, potentially through

some of the umbrella alliances and networks such as IFAP ([del Rosario](#)), Honey Bee Network ([Gupta](#)), PROLINNOVA ([Waters-Bayer, et al](#)), AGRIDAPE and PROFEIS ([Faly Ba and Kanouté](#)), and Via Campesina and the growing food sovereignty movement ([Mulvany and Arce](#)).

But some basic issues of capacity remain, and this, critically, has raises significant fundamental questions of accountability and governance that need to be addressed. Areas that were identified in discussions included issues of representation (who do farmers' organisations actually represent, and which farmers are excluded?), organisation (how do (global or regional) umbrella organisations relate to farmer research groups or other grassroots networks?) and governance (who are farmer 'leaders', how are they chosen and what contact do they have with realities on the ground?).

However, examples of ways forward were discussed, including the testing and development of innovative funding mechanisms for Farmer First approaches (e.g., PROLINNOVA, DURAS, etc.), suggestions for more direct engagement with policy advocacy (including with donors) to demand a stake in decision-making in public research governance, including the CGIAR and national agricultural research systems (NARS) , and capacity development, platform development and south-south networking for farmers' organisations, particularly around areas of policy and advocacy for appropriate agricultural research and development approaches.

Facilitating a responsive and effective extension and delivery system

The field of extension has evolved rapidly in the last 20 years. Gone are the days of large public extension system with well resourced extension agents travelling the countryside, training farmers and providing information and demonstrating new techniques. With structural adjustment and public sector 'reform' shrinking public services and the once dominant Training and Visit (T&V) system promoted by the World Bank in dozens of countries coming into disrepute, the standard pipeline public technology transfer and delivery model has all but disappeared. But what has replaced this model, so vilified by Farmer First proponents two decades ago?

The papers showed that a huge and often confusing variety of alternatives have emerged. Farmers must now contend with multiple sources of information, advice and service support – with, as [Rob Tripp](#) argues, some serious concerns about that demands on that scarcest of resources, busy people's time and attention. There are of course the remnants of public extension systems, together with private extension systems run by input supply companies and others, alongside NGO extension efforts which come in all shapes and sizes – from reinventions of the top-down transfer model (as with Sasakawa Global 2000) to model demonstration villages (as with the Millennium Villages project) to demonstration and learning efforts (as with Farmer Field Schools, described by [Winarto](#)) and innovations 'supply push'/'demand pull' approaches (as with 'Research Into Use' programme, described by [Albright](#)), to more bottom-up and community efforts, as discussed for projects by Farm-Africa ([Ewbank](#)), PICOTEAM ([Ngwenya, et al](#)) and others at the workshop. Farmers also provide their own advice networks, either through their own organisations or through farmer-to-farmer informal learning linkages ([Killough](#)). Add to this the increasing access to Internet based information, and other sources and networks supporting farmer information services, the choice and potential for confusion is bewildering.

Another aspect of innovation in the field of extension over the last 20 years has been in the mode and method of delivery. No longer are extension workers restricted to farmer training sessions and demonstration plots (although these are still important), but joint-learning

sessions to understand core principles (as in Farmer Field Schools) or field experimentation in farmer-led trial processes have opened up significant opportunities for more open-ended, non-directed learning. And this is enhanced significantly by the application of new media and information technologies – near ubiquitous cell phones and text messages can become important routes for transferring information for real-time market information (cf., [Nyimbo](#)), GIS systems and satellite information can provide site-location support, mobile testing systems can enhance diagnostics of soils, pests and diseases, and video technology and rural radio/TV (cf., [van Mele](#)) can encourage exchange of ideas and views in ways not possible, or even thought about, 20 years ago.

Choices, opportunities and diversity have thus opened up dramatically. From a Farmer First viewpoint, this *should* be a good thing – there has always been a strong argument for responding to the diversity and complexity of diverse, risk prone settings and wide differences in farming circumstance, for approaches that emphasise a ‘basket of choices’ or a ‘set of principles’, rather than fixed recommendations (or even domains of recommendation). Farmers of course are good at making choices, and are able to experiment with different options, not taking things at face value. For example, farmers linked to ‘organic, sustainable agriculture’ networks may well plant GM crops, while those working with trans-national companies planting new hybrids or transgenics may use organic, low input techniques for fertilisation or pest management. As ever, the real world is never as simple as the extension messages or the advocacy positions. And with multiple, competing messages and sources of ‘*extension*’ (if this is still an appropriate term), this means more circumspection, choice and testing.

However, as noted already, all this does come at a cost and the organisation of the recipients of extension advice becomes critical. In this context, the role of farmers’ organisations, grassroots research and development groups and other forms of collective organisation become critical to help with sifting information, experimentation and testing of products and assuring quality control. If extension (from whatever source) is like a conversation, then there needs to be a continuous process of interchange – a dialogue – between the different players. But in order to reduce excessive transactions costs and assure quality of information and advice, the workshop session on the future of extension explored clearinghouse mechanisms, alliances and networks which are sufficiently broad and non-partisan – going beyond the current models which tend to be allied to a particular vision of what agriculture, farming and farmers should be.

Building alliances and networks of innovation

As [Susan Kaaria](#) pointed out in her introduction to the session on building networks and partnerships for change, alliances to foster farmer-led innovation in agricultural R&D come together for a variety of reasons, including complementing each stakeholder’s own skills and capabilities with those of others, creating synergies to undertake activities and accomplish outcomes beyond what could be expected from individual efforts, strengthening capacities that can be sustained, and leveraging a range of services and resources, including funds and new technologies. This network-approach to innovation sees knowledge or understanding as a form of ‘distributed cognition’, constructed not of the individual ‘experimenter’ or ‘innovator’, but by the collective which produced it through debate, dialogue and group interaction. Here the emphasis is on co-construction and co-learning, where real partnerships between scientists, extensionists and farmers are created as part of new networks of innovation.

The workshop heard some experiments and experiences of this more fundamental shift. For example, [Ann Waters-Bayer](#) highlighted PROLINNOVA’s efforts to build partnerships among

major stakeholders in agricultural R&D to enhance processes of Participatory Innovation Development (PID) in a diverse array of contexts. [Beatriz del Rosario](#) emphasised the work of the International Federation of Agricultural Producers (IFAP) to foster farmer-scientist research collaboration on improving crop productivity and profitability across Southeast Asia. [Anil Gupta](#) described how the Honey Bee Network combines the virtues of a network and a social movement, so that every member who volunteers to contribute his or her energy to scout grassroots innovators or traditional knowledge holders, document their knowledge, add value, or convert innovations into enterprises and/or protect their intellectual property rights, expects other members to value their contribution.

In all these cases, the focus is on constructing partnerships and networks of innovation, where evolving communities – of farmers, scientists and others – work together towards a common goal. These cases are of course supported and facilitated from outside, usually by NGOs (e.g., [Campilan, et al](#); [Ewbank](#); [Killough](#)) or research organisations such as CGIAR centres and forums (e.g., [Oliveros](#); [Ortiz, et al](#); [Romney, et al](#)) to partnerships for ‘action research’ to realize participatory agricultural research and extension. But [Paul Richards](#) argued that in fact the most exciting opportunity for a revitalised Farmer First approach can only be achieved in the context of “unsupervised networks” of learning and experimentation “through which the skills and knowledge of farmers and researchers can be treated on level terms, thus settling a troubling argument that has held back the development of the ‘farmer first’ paradigm”.

Reforming large R&D organisations and science bureaucracies

The focus of this working group session was the challenges faced by the CGIAR system and two (very) large national agricultural research systems - China and India. Some interesting reflections emerged – and some major hurdles to ensuring a Farmer First approach was embraced in such organisational contexts.

Jacqueline Ashby’s opening paper had set the scene for this discussion highlighting how farmer participation was captured by a large group of protagonists within the CGIAR whose chief need was to demonstrate adoption of technologies seen to be —on-the-shelf and who hoped Farmer Participatory Research would persuade farmers of their desirability. As a result, the notion of conducting research with farmers became steadily diluted over the years. This argument was further explored with diverse experiences. While there were plenty of examples where innovative, participatory approaches had taken root and become central to major programme areas, these were often only on a temporary basis, reliant on the whims of project funding and not seen necessarily as part of core business. And this despite some very positive reviews of such experiences – such as Participatory Plant Breeding – by senior managers, advisory committees and boards.

So what has both promoted and prevented change in different organisational settings? What methodological and institutional innovations have opened up spaces for change? And what has caused closure? Who have been the champions of change, and what has allowed them to be successful? And, overall, what are the core organisational and institutional challenges ahead?

There were, of course, no simple answers to these questions. A range of stories were shared – from within the international research system, from CIMMYT and FAO (Dixon), ILRI ([Romney, et al](#)), the CAPRI network ([Meinzen-Dick](#)) and from the CGIAR Institutional Learning and Change (ILAC) network ([Watts and Horton](#)), as well as from the national systems of India ([Sulaiman](#)) and China ([Li](#)). In many respects, all stories were different: highly particular personal and institutional histories conditioned outcomes.

There was one common thread that tied these disparate stories together: the overall assessment was not positive. Many of these large R&D bureaucracies had run aground, and were punching well below their weight. Attempts at revitalising them had foundered on a narrow vision which saw the imperative to move upstream, to engage with the private sector and to work on new advanced (bio)technologies, without a strategy for thinking about how such efforts would be used, and by whom. As [Rasheed Sulaiman](#) persuasively argues for the case of the Indian national system, the focus on technology delivery – in the old Green Revolution mode - persists to the exclusion of efforts to deal with institutional and policy issues which are perhaps the key, given the dynamic new challenges faced by farmers. Across the organisations examined at the workshop, justifications in terms of ‘pro-poor’ development’ or (global) public goods were often seen to be weak or meaningless, with impact pathways to poverty reduction poorly thought through. Overall, the governance structures of these organisations were seen to be hierarchical and unaccountable, at least to the people they are purporting to serve. The involvement of farmers and other key local stakeholders in decisions about funding allocations and priority setting were often tokenistic or non-existent.

This rather damning assessment provided for a sobering discussion. Everyone was committed to the future of both international and national public R&D systems. These were seen to be essential to the Farmer First vision, and particularly critical at this juncture given the inability of the private sector or NGOs to fill the gap. With long term declines in public sector funding such organisations were often in bad shape, and in need of revitalisation, but recent efforts were often seen to be heading in the wrong directions and the new goodwill of governments, donors and philanthropists towards the agricultural sector may end up short-lived if things are not moved in a more positive direction soon.

The China case study did provide a counterpoint to this general diagnosis. While problems certainly existed, there were some more positive signs. As [Xiaoyun Li](#) and colleagues described, this is a huge system, with almost more than 1100 agricultural research agencies from national to regional level across the country in 2001, of which 636 agencies were conducting applied research on planting, 125 on stockbreeding, 125 on fisheries, 171 on agricultural mechanisation and 43 on other topics. These are complemented by over hundreds of thousands of extension agents at county, township and farm levels. The state’s commitment to agriculture, innovation and technology and service delivery is substantial, and those who commit to this national project are given substantial incentives and awards. The system’s incentive system is geared to delivering the results, with wide impacts across vast areas. Questions remain around the focus for the poorer smallholder sector, but policy shifts nationally, generated by engaged dialogue with senior policymakers, are, it seems in the offing. Could China perhaps be the largest Farmer First effort ever, participants wondered?

A central concern across the contributions was how to shift large organisations from ones that are characterised by stasis, conservatism and lack of innovation to learning organisations capable of a nimble, responsive, innovative mode of working, and able to meet the demands of a Farmer First approach? A tall order, some argued. Others were more positive and suggested some ways forward:

- Creating institutionalised, open learning spaces within large organisations are needed which encourage sharing of ideas and reflection on research efforts. These need to be seen as a core part of people’s activity;

- Initiating joint working across institutes can be encouraged by providing moments (field visits), events (workshops) and outputs (joint papers). This needs funding and management support;
- Changing our language and approaches so as to be accommodating and not intimidating (as some social science and policy language can be);
- Focusing integrative activities around themes that are already regarded as high priorities (e.g. a research focus not a cross-cutting theme such as 'learning' or 'gender' – these need to be emergent);
- Maintaining an anger and outrage at what is not being done, and a positive vision of what could be done, to motivate and inspire the change-makers.

All agreed that building a demand capacity in large R&D bureaucracies is a central and particularly formidable challenge. With the move upstream, this is often resisted: this should be the responsibility of national governments, applied and adaptive research and so on, it is argued. But, participants argued, even if the research is high-end genomic molecular biology in the lab, this still needs a Farmer First approach. Farmer First perspectives urgently need to move from the field to the station to the lab, and back again. This requires greater engagement with users throughout the innovation process, and the creation of innovation platforms involving farmers, as well as governance and financing mechanisms that ensure farmers have the right of veto, as well as the voice to influence decisions.

Given the organisational histories and vested interests of many science and R&D bureaucracies, change, as experiences tells us, does not come easily. China may not be the model everywhere, as the central commitment appears to be absent. So what to do? The workshop discussions highlighted the positive potentials of dissenting networks – outside the formal, mainstream of an organisation – which cut across disciplines, sections and departments, and link scientists and extension workers, senior managers and junior staff to farmers and other users. New 'communities of practice' will redefine what we mean by the 'scientific community'. Dissent, insurgency can, it was suggested, be highly productive, and essential for organisations' energy and innovative capacity, as well as assuring a sustained commitment to Farmer First approaches, especially when the default mode is so easily resorted to.

A major challenge is ahead, and [Shambu Prasad](#) posed it succinctly: How do we transform the rich (cacaphony of) organisational diversity into (a symphony of) innovation? How do we network dissent, subvert processes and shame institutions towards change?

Engaging with the private sector

Everyone agrees that engagement with the private sector is critical. This is a new development from 20 years ago. Back then, it was almost exclusively the public sector, and its large, lumbering R&D organisations that were the focus of Farmer First reformers. But today, as already discussed, that is only part of the picture – and a decreasing part in many places. With R&D systems – from seeds, to fertilisers, to chemicals to information and advice – increasingly owned and controlled by private sector players, often in highly vertically-integrated and consolidated large businesses, negotiating relationships with the private sector is key. Whether this is around gaining access to private sector skills and expertise in high-end technology development, or privately held intellectual property rights over products or processes, a Farmer First approach for the 21st century must address these questions head on.

One of the currently favoured approaches is the plea to develop so-called public-private partnerships (PPPs). As noted at the workshop, rhetoric about PPPs has become a catch-all solution for all sorts of new institutional arrangements, with the category often obscuring more than it reveals. As several papers discussed at the workshop showed, PPPs encompass very diverse arrangements, including partnerships for resourcing, contracting, commercialising, frontier research and value chain development (cf., [Spielman](#)). These may address different problems from investing in new innovation pathways to ensuring access to proprietary technologies, to leveraging private sector skills and reach in service delivery and cost reduction to . And they may involve dealing with large transnational companies or whole networks of very small private sector operations.

An important new role has evolved for brokering organisations which manage such partnerships, helping to negotiate between parties, confirming common goals and offsetting risks. [Gospel Omany](#) shared the experience of the African Agricultural Technology Foundation and [Andy Peters](#) presented an overview of GalvMED. Both have brokering functions, but questions were raised at the workshop about who actually benefits from such arrangements.

The big question of course for the Farmer First workshop was how focused are these arrangements on addressing the priorities of poorer, marginalised farmers, and so wider questions of poverty reduction (public goods aims) and social justice? Despite the considerable investment in PPPs, and some substantial public and philanthropic funding being spent on both partnerships and brokering organisations, the answer is not always clear, and the evidence on poverty impact often equivocal, as [Dominic Glover's](#) case study of the Monsanto Smallholder Programme in India reveals.

Based on an extensive review of 75 different PPPs across the CGIAR, [David Spielman and colleagues](#) note that “while PPPs are serving a wide variety of research objectives, the CGIAR’s partnerships with the private sector are still at a very nascent stage. Few partnerships are explicitly designed to facilitate joint innovation, an important justification for the use of PPPs. Still fewer provide for effective management of the risks inherent in PPPs, or provide effective analysis of their poverty-targeting strategies...” As a result, they conclude: “The deployment of pro-poor knowledge and technology requires different – and often creative – approaches to research and partnership. And creativity itself requires that both public- and the private-sector organizations become more innovative in the ways they conduct business and build strategic relationships with each other.”

A deeper scepticism about the abilities of the private sector and more particularly global, corporate agribusiness to meet the challenges of a Farmer First paradigm is held by some. Surely, some workshop participants argue, the profit motives of agribusinesses are often antithetical to Farmer First objectives and poverty reduction. The evidence of global capitalism meeting the needs of the ‘bottom billion’, they argue, are scanty, and instead, as [Patrick Mulvany and Maria Arce](#) suggest, farmers need to maintain and develop their own systems of food sovereignty, based on local economic development, and local market transactions.

Personal and professional change

Over the past 20 years there has been much talk of personal and professional change among Farmer First practitioners. But exactly what this is has often not been clear. A number of sessions at the workshop looked at this issue from different angles. Some core attributes came through clearly. These included in particular the need for a normative and

political stance in favour of social justice, poverty reduction and equity, combined with the need for openness and an ability to be reflexive (of one's own behaviour, attitudes and actions). But the challenges were also clear. Conventional educational systems and professional hierarchies often do not value such qualities and so do not encourage.

Those engaged with the Farmer First movement in the early days talked of how their initiatives often had to be done in secret, and how such approaches were seen as subversive and undermining of mainstream approaches. While farmer participation today is seen as very mainstream, when alternative views and practices confront entrenched hierarchies and long institutionalised practices, similar reactions can be seen.

The case of the System of Rice Intensification was discussed at various points in the workshop, with valuable insights provided by [Shambu Prasad](#) and [Norman Uphoff](#). Here is a non-conventional skill and practice-based management approach to increasing rice production, particularly in marginal areas. It has achieved in some places spectacular results and has spread widely. But despite this is regarded by some as illegitimate and unproven, and so rejected by some mainstream science organisations. This often out-of-hand rejection has demonstrated an unwillingness to reflect and learn, and an often surprising lack of openness to new ideas and experiments, something usually associated with good science.

How, then, can individual, organisational and professional responses be encouraged which are more open, experimental and reflexive in their approach to learning? Why is it that alternative knowledges and innovative practices and approaches are often excluded, obscured or shunned by mainstream organisations? Much of this, it was concluded at the workshop, comes down to educational systems that set the parameters for professional and organisational behaviour.

While there have been some path-breaking efforts in rethinking agricultural education systems with a Farmer First approach over the last 20 years – for example at Hawkesbury College in Australia or the Department of Communication and Innovation Studies at Wageningen Agricultural University in the Netherlands – these have been scattered and isolated. Mainstream agricultural education, north and south, has been premised on old-style conventional notions, and, where taught, Farmer First approaches have often been seen as an instrumental add-on ('add participation and stir...'). Reforming agricultural education for development was thus seen as a major frontier at the workshop. The workshop contributions highlighted a number of key lessons from experiences from a range of recent experiments – including from the Horn of Africa ([Catley](#)), Uganda ([Hagmann, et al](#)), South Africa ([Ngwenya and colleagues](#)), China ([Xiaoyun and others](#)) and West Africa ([Röling and Jiggins](#)), among others. These included:

- The need to build the confidence to think and do things differently, which, as [Jürgen Hagmann](#) argued, means building a sense of collective identity and commitment among learners (whether university lecturers or farmers);
- Shifting mindsets is central. This means encouraging openness and the ability to reflect and learn. This may require substantial shifts in personal and cognitive abilities, and will be conditioned by wider cultural and professional factors which may inhibit such shifts, as [Andy Catley](#) showed in his case study of overcoming the resistance of the veterinary establishment to efforts to institutionalise Participatory Epidemiology;
- Styles of pedagogy are needed that enhance such changes. As [Jethro Pettit](#) contends, this means embracing diverse sources of knowledge (formal, informal, experiential) and ways of thinking and experiencing the world (to include emotional intelligence, spirituality etc.);

- New forms of curricula are also needed. This may require introduction of a participatory curriculum development methodology guided by insights from modern adult teaching and learning theory and practice, as [Xiaoyun Li and colleagues](#) point out in their review of China's efforts to rejuvenate rural development studies.
- Efforts need to be invested in helping faculty to change teaching/learning methods and styles. This requires incentives and sensitive facilitation. New skills, as [Jurgen Hagmann](#) points out, may be marketable; for example, faculty at Makerere University invested heavily in the change process as they realised that not only was their performance improved but consulting opportunities opened up.
- Professional rewards and hierarchies need reform to encourage and validate Farmer First ways of doing things. This is likely to incentives, awards and other forms of recognition, as well as support mechanisms and mentoring to encourage younger professionals.
- Organisational and policy change is required within educational systems as a whole, as there is always an easy tendency to return to the default mode, unless alternative ways of doing things are reinforced, as [Maria Fernandez and Oscar Ortiz](#) show in their study of institutionalising a master's programme on 'Agricultural Innovation for Rural Development' at the National Agrarian University in Lima, Peru.

But in rethinking agricultural education, just as in the wider debate about R&D approaches and innovation systems, there is going to be no one way of doing things. More participatory, learning approaches must go alongside more conventional approaches, and the complementarities, synergies and overlaps must be encouraged and celebrated. However, what has to be avoided is one mode – usually the longer-established, more powerful version – dominating. Thus, a strategic, activist, 'dissenting network' approach may be necessary to get Farmer First perspectives introduced and accepted. This will involve enlisting champions, establishing strong networks of practitioners and encouraging mentoring and support mechanisms, alongside 'Trojan horse' tactics of engaging with the mainstream. Just as a Farmer First innovation system, a new professionalism in agricultural education will not arrive automatically.

A call to action

The end of the workshop focused on what strategies, tactics and actions were needed. In the concluding sessions, participants reflected on concrete ways forward. There was an agreement that there was a need for the 'Farmer First movement', as participants referred to it, to present a more united and coherent front. This should not be through a singular approach or methodology, but through a set of commonly agreed guiding principles that enhance the capacities to innovate, and which involve farmers, and particularly poorer and marginalised people, in the process, and which result in social justice, poverty reduction and environmental sustainability. Such principles need in turn to be clear and widely applicable, and not obscured by jargon, pet methodologies and territorial turf protection.

The strength of the Farmer First 'movement' over the past 20 years has been its diversity and breadth, and any attempt to organise, formalise and institutionalise was seen as a certain death knell. Instead, in the [final plenary commentary](#), Ravi Prahbu used a metaphor of the slime mould, a single-celled organism that normally sits on the forest floor without moving, but when conditions are right, comes together into a colony or multi-cellular organism which can move. Participants in the conference had come together in favourable conditions, so he asked, "Where are we going from here?" Ravi asserted that we need to

reach out to everybody, with the aim of being, very explicitly, catalytic. We need to adopt a constructivist approach – to understand the world by trying to change it; to be critically reflexive. There is an opportunity here for distributed intelligence at work.

Thus in order to see forward some of these, IDS – and particularly the workshop hosts, the Future Agricultures Consortium and the STEPS Centre – have committed to work with others on a number of future initiatives, under the wider umbrella of the proposed 'Innovation Alliance', envisaged as a loose but active 'community of practice' (aka a 'dissident network'), but one that does not just involve the 'usual suspects', moving, as Clive Lightfoot rightly suggested, beyond the 1980s 'NGO caucus' to a wider network, including, critically, private sector players and others.

A number of suggestions were made through the workshop, and particularly in the final panel session. *Inter alia*, activities might involve:

- Exploring the principles and practices of a 'Farmer First' approach to innovation systems, involving on-going action research, documentation and reflection;
- Experimenting with institutional learning and change in different agricultural R&D organisations, supporting 'dissenting networks' for change;
- Actively engaging with the 'powers that be' in R&D bureaucracies – including the CGIAR Science Council – and present Farmer First experiences, ideas and visions in other fora which are perhaps less comfortable and familiar;
- Mentoring and support across a Farmer First 'community of practice', especially giving support to junior people (to publish, to present, to share in different settings) and to those who are in organisational cultures and contexts which are not supportive of them;
- Creating space for scientists to seize the initiative and explore alternative approaches to agricultural research, in collaboration with farmers, and drawing on the lessons of the SRI experience where a science of soil biology was critical, but not seen as central in some quarters;
- Facilitating action research and experimentation in different innovation system contexts for different foci for public support in agriculture. For example, should public funds be invested upstream supporting private sector R&D/offsetting risks/brokering delivery arrangements as part of Public-Private Partnerships or downstream generating demand for new technologies/services or direct subsidies to farmers?
- Working on clear and accessible impact assessment approaches and tools appropriate for a Farmer First context, testing them in different innovation system contexts and mainstreaming approaches to 'downward accountability' in large research and funding organisations;
- Exploring 'win-win' options for professional change and influence – such as the examples shared by [Dawit Abebe and Andy Catley](#) of using participatory approaches to generate quantitative data and sharing these results through academic publications, and so enhancing researchers' publication records as well as positively engaging with pastoralists in development processes.
- Facilitating and supporting South-South exchanges and networking – particularly between Latin America and Africa – for farmers' organisations, exploring how to generate the politics of demand in different settings;

- Supporting tracing and tracking studies of students involved in participatory agricultural education to identify how personal and professional change happens, and with what longer term results;
- Supporting curriculum design and development processes for agricultural education (from schools to skill-based training to professional and tertiary education).
- Engaging with the new Sub-Saharan Africa Challenge Programme, led by FARA involving eight countries, as an action-research opportunity for experimenting with and institutionalising Farmer First approaches.
- Providing support for independent (unbiased?) clearinghouses for information on technology options and alternatives to reduce transactions costs for farmers in searching for options.
- Mapping, cataloguing and documenting Farmer First experiences and contacts geographically through a web-based link to Google-Earth mapping software.
- Linking people and networks (and websites and information sources) using Web 2.0 technologies and virtual social networking approaches.

Norman Uphoff reinforced these points by contributing an impromptu theory of the 'Three Gets': get real, get fundamental and get truly collaborative. We certainly do need a more sophisticated conceptual grasp of the complex and dynamic world we are dealing with, he argued, but at the same time, we also need to forge profound, ongoing partnerships with practitioners and farmers. The future challenges for the Farmer First movement are indeed significant and profound. The workshop allowed for a re-energising of debate and a renewal of connections for the future around a substantial, political-normative agenda of changing innovation systems through participatory, inclusive learning approaches combined with a more energetic and organised politics of demand. This suggests many challenges for all involved – researchers, extension workers, trainers, educators, administrators, funding organisations, the CGIAR, private sector corporations, and of course farmers and their own organisations. Building an 'innovation alliance' that brings together such actors in a productive, forward-looking practical engagement to further the ambitious and exciting agendas that the Farmer First Revisited workshop outlined is a key next step for the future.