

Extension Research: Random thoughts from a Well Wisher



Are we serious in undertaking research in Extension? Do we have a research agenda? As a discipline, are we using new concepts and approaches to better design our research? How policy relevant is our research? Do we only extend knowledge or do we also create knowledge? As extension professionals, we need to introspect on the status of our research and address many such disturbing questions, argues Dr R M Prasad.

Our research paradigm

Our current research paradigm followed in most academic institutions tends to be linear in design, as given below (Smith and Helfenbein, 2009)



In most cases, extension research looks at farmers or extension personnel as subjects and crop/farming system as settings of the study. The dissemination of research findings into the public sphere is very often limited to sharing of results with other scientists or students. Though farmer participatory research had become popular at least among some of the researchers, it is observed that in farmer participatory research, research or extension are too dominant, while farmers comply with the wish/request of extensionists/researchers to arrive at joint decisions on research topics, designs, analysis and dissemination of results (Katz *et al*, 2007)

What we should do?

- The concept of 'research' in extension needs to be broadened, recognising that beyond the public research and extension organisations, a range of actors have important and vital roles in the generation and dissemination of agricultural innovation. The Agricultural Innovation System (AIS) landscape has a wide range of actors going well beyond formal research and extension institutions, but the research in extension is still stuck with the typical actors and has not moved beyond R-E-F linkages. Of late, marketing is also added. Without a functional interface between the various actors, neither research will be able to make innovations that benefit farmers, nor can extension offer services that resolve all the problems of farmers.
- The understanding of innovation needs to change as it is increasingly recognised that non-technological innovations such as ways to access to more profitable markets, value chain development or organisation of producers are equally, if not more important than technological innovations.

- The practice of Extension has been described as ‘knowledge applied’ or ‘knowledge extended’. What about ‘knowledge created’? Of late, at least some of the extension researchers have begun to recognise Extension’s role in ‘creating knowledge’ which is a welcome step. But this is yet to yield significant results.
- Research institutions need to provide researchers with the right incentives to engage effectively, enable them to contribute to policy and political processes and develop realistic expectations as to what they can collectively achieve.
- Researchers need to alter their own mindsets, paving way for team research. This may mean working in inter-multi-and/or trans-disciplinary research teams, admitting to being part of a value based system. The research agenda is usually decided by the researcher, which also needs a paradigm change. Defining the research agenda is about defining the problem with research users, who they are- not just farmers, but scientists, entrepreneurs, environmentalists, policy makers, journalists, etc whoever is part of the ‘innovation system’ that affects research uptake and use.
- Knowledge brokering is absent in the current research system. This is a central component of knowledge transfer that involves bringing people together, helping to build links, identify gaps and needs, and sharing ideas. It encourages the use of research in planning and implementation and uses evaluation activities to identify successes or improvements. Thus it helps to bridge the gap between research and policy development.
- It is high time that our extension scientists give importance to translational research, which has gained popularity in medical research. Translational research is a process rather than a stage and it focuses on multi disciplinary collaboration. Translation is the process of cascading global best practice and innovation and combining it with local knowledge, so crucial with the variation in soil type, water availability, climatic variations, etc. Translation aims at developing people to manage and lead land based and agri-food businesses in a more productive and sustainable way, which can only be achieved by exchanging knowledge and diffusing innovation that can be readily applied to the agro-food supply chain.

Box 1: Basic Research, Applied Research and Translational Research

Basic Research: The objective of basic research is to gain more comprehensive knowledge or understanding of the subject under study without specific application in mind. Understanding how a social process (eg: conflict) affects group behaviour is an example for basic research.

Applied Research: It aims at gaining knowledge or understanding from basic research to meet a specific recognised need or to solve a specific problem. Finding a conflict resolution process for better functioning of groups is an example for applied research.

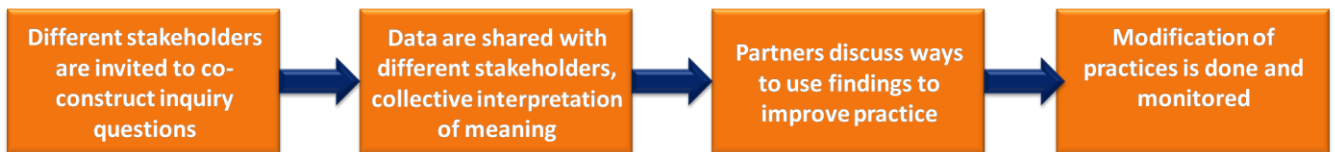
Translational Research: This can be considered as Applied research plus. This refers to the new scientific methods and technologies, inter disciplinary approaches and collaborative institutional arrangements being developed to narrow the gap between basic science and its application to product and process innovation. Translational research encompasses scientific, technical, market and policy signals that arise from basic research to final consumers. Developing conflict resolution strategy for group behaviour in an organisation could be an example for translational research.

Translational Research in Extension

Two variants of translational research that can be used in extension research are:

- A. **Translating Research Into Practice (TRIP)** – This is a research framework gaining importance in research projects associated with Medicine, Nursing, Communication, etc. This can be employed in Extension research also.

TRIP creates a space for collaboration, co-constructed inquiry that values and utilises the expectations of all stakeholders. This approach follows from what Lagemann (2008) refers to as ‘problem finding research’ that produces, or at least provides insights into ‘usable knowledge’. Smith and Helfenbein (2009) present the recursive nature of translational research in Education (below), which can be used by the extension scientists.



- B. **Research into Use (RIU)** Approach: RIU programme (<http://www.researchintouse.com/>) was designed to put the results of agricultural and natural resources research into use to reduce poverty, promote economic growth and mitigate environmental problems. RIU had two objectives: a. Do everything to put new knowledge (generated in the previous research into use) and b. Use this as an action research case to learn from ‘How to put new knowledge into use? Though the fact that RIU originated in a different context and is now closed, the interesting part for the researchers was the second objective, about learning from putting research into use (what works and what doesn’t and what needs to be done to put new knowledge into use.

The Centre for Science and Policy, University of Cambridge presents a review of different approaches for translation of research into practice innovation to support sustainable management of natural resources and the alleviation of poverty (Box 2).

Box 2: Translating Knowledge to Policy on Food Security in India

Outcome: In September 2013, the Government of India enacted the Indian National Food Security Bill, enshrining the legal right to food in the Indian Constitution.

Process: A long running campaign on the right to food used specific opportunities to pressurise the GoI to enact new legislation. The ability of key actors to influence the official policy process was facilitated by the use of Public Interest Litigation (PIL) and judicial interventions.

The identity and previous experience of the key actors were important factors. Specific pieces of research were commissioned to generate evidences in support of the proposed legislation. The most influential research outputs were those that were easy to access, in terms of availability and cost. Researchers, activists and policy actors worked together to build coalition of support for the new law.

Source: Centre for Science and Policy, University of Cambridge, 2014

Some of the applications of translational research in extension include:

Value Chain Analysis

Translational research has been successfully used for value chain analysis of important crops. Value chain analysis describes the activities that take place in a business and relates them to an analysis of the competitive strength of the business. The primary activities, support activities, enabling activities,

etc by the different actors involved in value chain can be analysed and properly utilised through translational research.

Box 3: Translational Research in Wheat value chain

A technical report of RAND Corporation (non profit institution in Europe that helps improve policy and decision making through research and analysis) considers how translational research and knowledge exchange can be enhanced throughout the food and agricultural value chain so that best use is made of public and private investment on research and knowledge generation. The wheat value chain was chosen as the test case for development of the methodology. The project distinguished four actor roles within the value chain- funders of knowledge generation; knowledge producers; knowledge intermediaries and knowledge users. Different broad fields of research related to upstream and downstream activities were analysed.

Upstream fields of knowledge, encompassing basic and applied research include: crop science, food science and food safety, organic agriculture, alternative crop use, resource efficiency and climate change and machinery and equipment engineering.

Downstream fields of knowledge covering product and process development include: farm inputs and implements, on-farm production, alternative crop use, resource efficiency and climate change, food science/ food safety, food processing and distribution.

Translational research cuts across both categories of research fields, it occurs around activities within upstream and downstream categories. This could add more value by improving existing knowledge exchange activities so that they address the specificities of the wheat value chain more effectively.

Source: Wamae, W *et al* 2011, Translational Research and Knowledge in Agriculture and Food Production, Technical Report, Rand Corporation

Decision making by farmers

Extension workers sometimes try to ‘push’ farmers into accepting recommendations. However, when decisions about what to grow and how to sell are imposed, this rarely leads to success. Farmers do not ‘own’ such decisions, as they feel a low sense of responsibility. However, helping farmers to make their own decisions is more difficult and also a slow process. But in the long run, it will be more successful and sustainable. However, it is disappointing to note that extension researchers have not bestowed much attention to this.

A farmer-centric analysis of decision making process and behavioural change of farmers through unpacking the ‘black box’ of decision making theories in agriculture is what is needed. Some of the issues to be addressed are:

- Understanding values of the decision maker
- Segmentation of farmers in terms of business engagement and adaptability
- Framework of decision making based on capacity, willingness and engagement
- Role of uncertainty and risk in decision making
- Information used by farmers for decision making
- Tactical, Strategic and Structural decisions by farmers
- Bias in decision making process
- Types of participatory research based on Locus of decision making

Here also, translational research can be successfully employed to apply and validate an effective methodology to deliver a robust evidence base for the decision making process by the farmers.

Meta Analysis in Extension

Meta Analysis is about “conducting research about research”. This refers to the methods that focus on contrasting and combining results from different studies, in the hope of identifying patterns among study results and sources of disagreement among those results. A meta analysis gives a thorough summary of several studies that have been done on the same topic/theme and provides the reader with extensive information on whether an effect exists and what ‘size’ that effect has. The main advantages of meta-analysis are that the results can be generalized to a larger population and that the precision and accuracy of estimates can be improved as more data is used.

Some of the applications of meta-analysis in extension could be:

- Sustainable rural livelihoods (based on the results of NAIP research on sustainable livelihoods).
- Climate change adaptation by farmers (based on the results of NICRA).
- Social capital (based on various studies conducted on social capital, including SHGs, farmer organisations, etc).
- Farmer Field Schools (based on different studies conducted on Farmer Field Schools).

Possible Actions?

- Can we look at Extension (as it exists today) and redefine it to the current context and use research findings/development in other social sciences to reinterpret it?
- Can the extension scientists of ICAR join hands and conduct network/ co-ordinated research projects?
- Can the extension scientists conduct Meta analysis on the available research studies on topics of relevance to the farming community?
- Can the extension faculty of SAUs take lead in preparing a Researchable Problems List for M Sc and Ph D students? Can they allot problems to students on selected two or three themes/topics so that in one year, we will have more information about the research topic from various regions?
- Can we form ourselves into Community of Practice (CoP) to encourage shared learning on selected themes?

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Our previous blogs on this theme

1. Dr P Sethuraman Sivakumar. (March, 2013). **Research in Extension: New tools to reinvent its future.** (available at <http://aesagfras.net/Resources/file/Blog%204%20Enhancing%20the%20potential%20of%20quality%20videos%20for%20farmers.pdf>)
2. Dr R. M. Prasad. March, 2013. **Research in Extension: It is time to introspect** (available at <http://aesagfras.net/Resources/file/Blog%205Research%20in%20Extension%20It%20is%20time%20to%20introspect.pdf>)
3. Dr M J Chandra Gowda, Dr Sreenath Dixit, Dr R Roy Burman & Dr P N Ananth. February, 2014. **Extension Research and Technology Development** (available at http://aesa-gfras.net/Resources/file/FINAL-M_J_Chandre%20Gowda-13-FEB.pdf)