



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

# CELEBRATING AGRICULTURE FOR DEVELOPMENT

Outcomes, impacts and the way ahead

## The Crawford Fund 2022 ANNUAL CONFERENCE

Parliament House  
Canberra ACT Australia  
and online

15-16 August 2022



Editor Ann Milligan

## Innovations for extension: a case study from Pakistan

Dr David McGill

Faculty of Veterinary and Agricultural Science, The University of Melbourne



I am very happy to be here and proud to be speaking to you on behalf of our wonderful team of researchers in Pakistan and Australia. It was about 15 years ago today, plus or minus a few days, when Peter Wynn, my boss at Wagga Wagga, came with me to Pakistan for the first time. We were scoping out a project there. Not long after that I went to work in Pakistan for two years, living in Lahore, and it was an amazing experience. It was the hardest thing I have ever done, being a risk-averse person, but it was awesome, and though I did not realise this at the time, it had a massive and profound impact on me and where I was at in my life, and on my understanding of research for development. Living there also was a critical step for our project, with important impacts on our understanding about the people that you work with in Pakistan, and the country itself. There is great complexity in the politics and the provinces and the different organisations that have roles in extension in Pakistan.

I hope to give you a few insights about what we did, and share a few lessons from some of our social researches that taught me and our Pakistani team a lot about extension and about innovations for extension.



Figure 1. Typical smallholder farming in Pakistan; our projects; and defining ‘extension’. Photo: Conor Ashleigh.

We were lucky to have three projects follow one after the other (Figure 1). There has been real continuity and momentum in them because of that, and also because I and Peter Wynn and Hassan Warriach have all been working on those projects for the whole 15 years. It meant we did not need to spend the first year or two of each project trying to get all the knowledge out of one head into the next head. That made a big difference in what we did.

Our team was able to build on understanding the context of the smallholder farming system in Pakistan, where they had only a few animals. Although milk production was small, those animals and that milk supported quite large households, and were extremely important to 9 million smallholder farming families and to the livelihoods there (Figure 1). We knew that basic information when we began work.

When we started in our first project, we focused on on-farm challenges and on understanding the gaps in information in the local context, and on understanding what information was flowing and where it was flowing to. Then in our second project, we looked more at the extension system and what information was getting to the smallholders. The challenge that came out of that work, which was really highlighted by our Pakistani team there, was that although information was flowing – maybe not to everywhere – there were gaps, and in particular it was very difficult to engage with the smallholder farmers and build relationships, especially with women. There was an extra layer of social norms about whether women could come to meetings and have access to that information.

In our third project we were joined by the social research team from the University of Melbourne, and they added massive value – enabling us to expand on the knowledge we had already gained. The team had social research experience from Australia and elsewhere, and they helped us to understand extension and the extension system, really value-adding to what we were doing there.

For anyone who has not worked in extension, Figure 1 has a short definition. Extension is about understanding what the agricultural problems or issues are, and working with farmers to try to innovate or find a technology to try to address those issues.

Figure 2 gives a snapshot of the shifts in theoretical perspectives on extension that have happened over time. This is all from the theory. If you worked in extension in the 1980s or 1990s, maybe you are familiar with the technology-transfer approach. It is a very linear style of communication, with the scientists being the innovators and the farmers being the adopters. Since the year 2000, the approach is much more about an agriculture innovation system. It is much more participatory; it is about facilitated process; and there are more organisations involved. Instead of the government being in charge of it, the extension system is now much more pluralistic, with not only the scientists being innovators but also the farmers being involved in that innovation process as well.

In Pakistan, extension still uses a linear style of tech transfer. It is pluralistic – that is, there are lots of organisations involved, including non-government organisations (NGOs) as well as government, but the government has a more major role. Private NGOs are starting to do more, but it is still very much government-led.



## Shifts in theoretical perspectives

Regarding supporting agricultural innovation. Source; Klerkx *et al.* (2012)

Characteristics	Transfer of technology / Diffusion of innovations	Agricultural innovation systems (AIS)
Era	1960s	From 2000s
General approach	Linear style of learning	Participatory approaches with facilitated learning
Organisations	Government lead	Multiple organisations; pluralistic
Mental model & activities	Supply technologies through pipeline	Co-develop innovation involving multi-actor processes and partnerships
Role of farmers	Adopters	Partners, innovators exerting demands
Role of scientists	Innovators	Partners, innovators responding to demands

Figure 2. Shifts in theoretical perspectives regarding supporting agricultural innovation. *Source: Klerkx et al.* 2012.

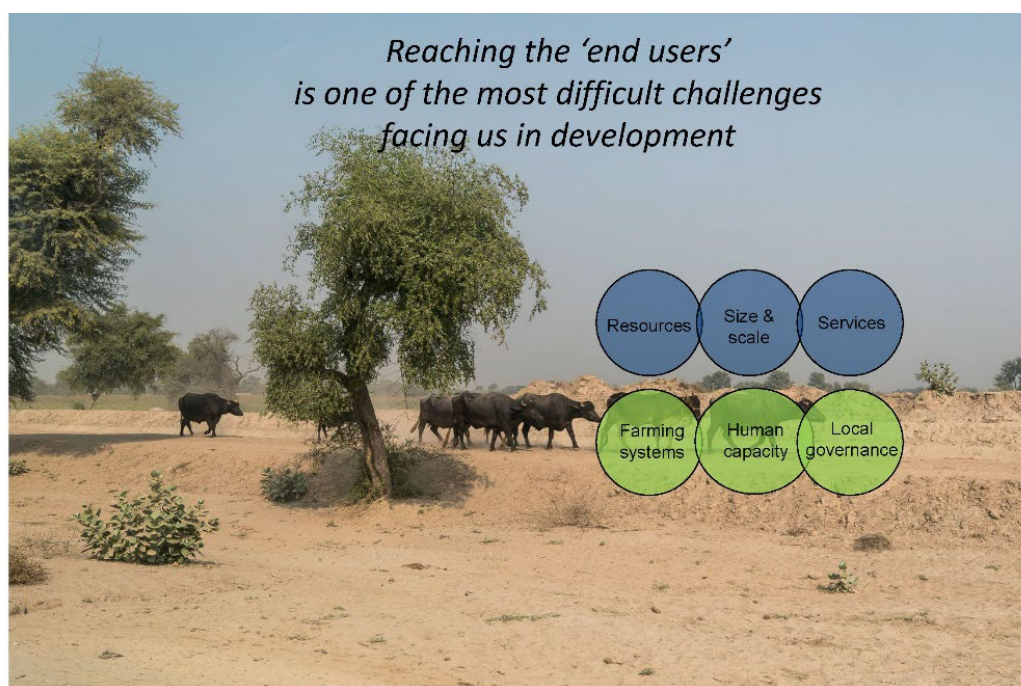


Figure 3. Some of the challenges and issues of working in the smallholder farming system in Pakistan. *Photo: David McGill.*

Figure 3 suggests the size and scale of some of the challenges you have to deal with and the issues that occur in the smallholder farming system in Pakistan. The climate is very hot – the photo shows animals dealing with that hot climate – and there are resources that differ across the country, across Pakistan. There are various sizes of farms and different scales of things happening, and there is also a range of services in all those different locations. On top of that, if you are trying to work within that system, you need an understanding of the variety of those farming systems, and the variety and the differences in human capacity across those different areas, and also of the local governance of the services that you can work with so as to be able to work with the smallholder farmers.

In the second phase of our project, our team used an approach called ‘the Whole Family Extension Approach’ (WFEA) (Figure 4). Our innovation was in getting the team to co-design and build the idea of working with farmers, and building and establishing relationships with farmers including women and if possible the whole family. The approach was mainly based on good extension principles and on having a combination of technical information, and ideas about social mobilisation, and training farm advisers to go out and build relationships with farmers. A critical component of this was that the WFEA explicitly stated that it was important to engage with both men and women farmers, and we made sure we were supporting both male and female farm advisers to be active where they could be.

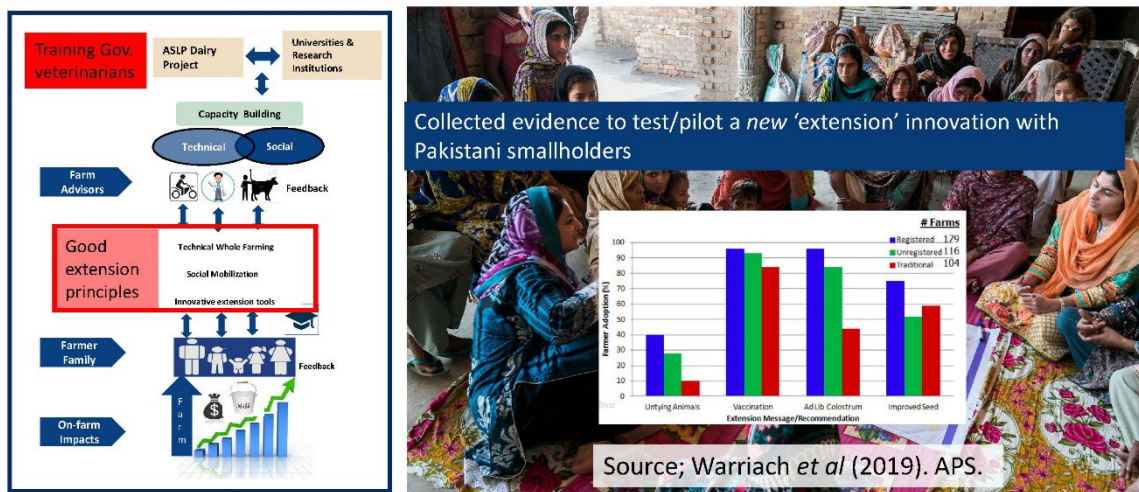


Figure 4. Our innovation: the Whole Family Extension Approach (WFEA).

*Photo: Conor Ashleigh.*

We applied this approach and tested it with the government organisations there – who were primarily veterinarians – but our team members were heavily involved in collecting impact and evaluation data to assess if the approach worked in Pakistan. And it worked! That was the outcome of the second phase of the project.

When we moved into the third phase with the social researchers, we worked with that WFEA that we had tested in the second phase, and we took it out to the whole Pakistan extension system, including all the organisations that wanted to be involved (Figure 5).

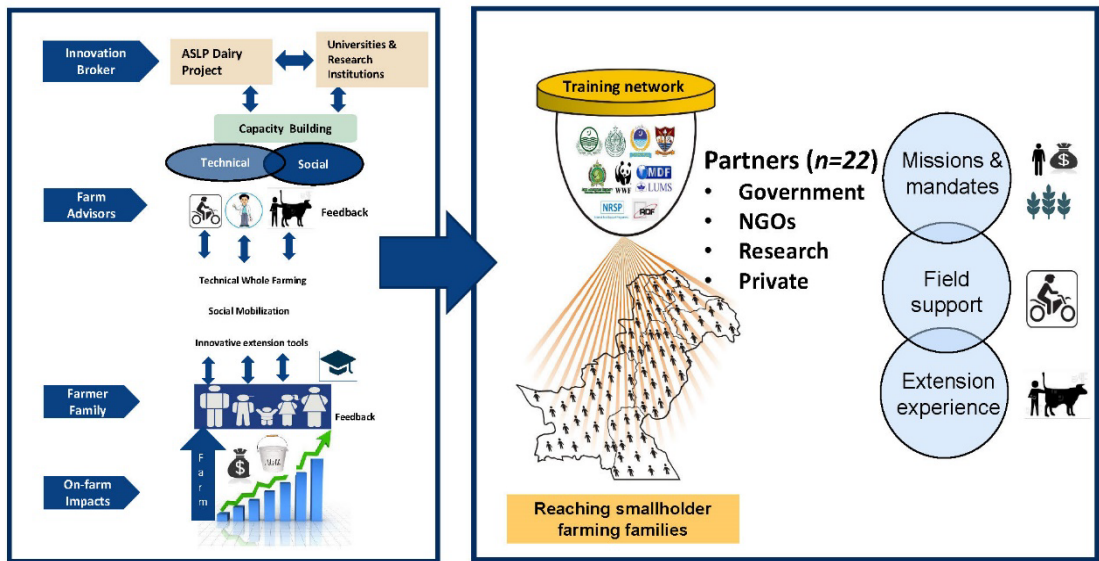


Figure 5. WFEA (left box) flowing to the Pakistan extension system (right box).

There were 22 different organisations, including some in the government, some NGOs, some private sector organisations and some research organisations, and we encouraged them to be part of the program. To work with all those different groups we needed to understand that, naturally, they had different missions, different mandates, different field support, and different extension experience. For example, an NGO might have great community-development experience. By contrast, the government groups, particularly in Pakistan, were mainly vets doing veterinary work, which is still a good part of the extension system. We wanted to get those people to learn from each other. I would like to highlight the social research team doing this work, led by the Rural Innovation Research Group at the University of Melbourne: Dr Margaret Ayre leading, with Professor Ruth Nettle advising, and Dr Kaitlyn Height doing a lot of the legwork.

Our major interventions were at the farm adviser level. The project team in Pakistan all put a lot of effort into training farm advisers, with Hassan as the local leader. We trained 50 farm advisers across those 22 organisations. The social research team emphasised the importance of working with the organisation managers as well, and of having a Community of Practice at the extension manager level. Rather than just training the farm advisers our group was also training the farm extension managers, so that they could be getting feedback about what was working in the field. Our team was doing field mentoring visits as well, and that feedback loop connected the organisation managers so that they knew what was happening and what was or wasn't working (Figure 6).

The Community of Practice and the training workshops were run to build learning networks and to support innovation (Figure 6). Our aim was not for our team to do the innovation themselves, but rather to support those other organisations to innovate, using the ideas and

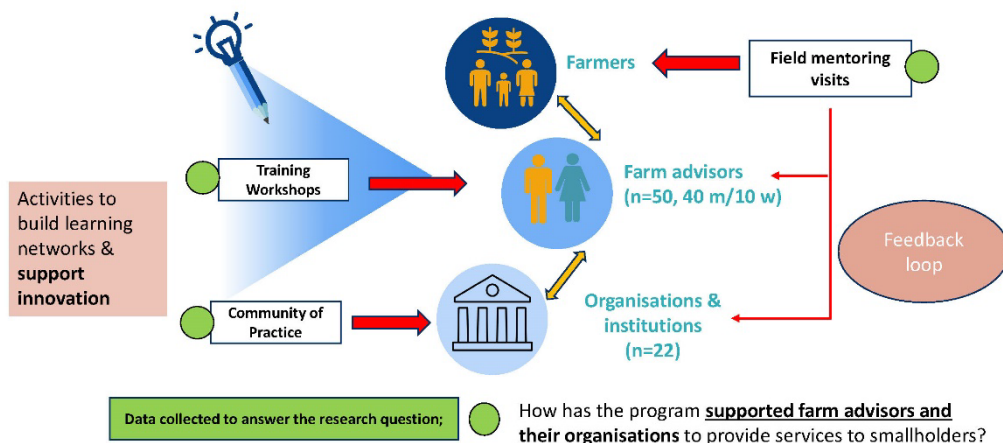


Figure 6. Project interventions, at three layers.

technology our team was sharing or brokering with them. A new publication has the qualitative results from this work (to be published in late 2022).

We collected a lot of data about impacts at all the different levels: farm adviser level, farmer level, and organisation level. Figure 7 summarises the qualitative results.

One of the key learnings for me was that via those networks at the farmer level and the farm adviser level and the organisation level and extension manager level, these people were able to get together and to learn from each other. That kind of collaboration is important and is needed to support our innovation. It takes the lessons that we learned into those other organisations for the future.

<div style="background-color: #0056b3; color: white; padding: 2px; font-weight: bold; font-size: 8px;">Advisor</div>	<ul style="list-style-type: none"> <li>Ability to solve farm issues independently</li> <li>Better links with farming communities</li> </ul>		
<div style="background-color: #0056b3; color: white; padding: 2px; font-weight: bold; font-size: 8px;">Organisation</div>	<ul style="list-style-type: none"> <li>Improved job performance</li> <li>Increased capacity of staff</li> <li>Financial and time savings</li> <li>Growth in services delivered</li> </ul>		
<div style="background-color: #0056b3; color: white; padding: 2px; font-weight: bold; font-size: 8px;">Farming households</div>	<ul style="list-style-type: none"> <li>Milk production and quality increased</li> <li>Advisors know more about the whole farming system</li> <li>Improved animal health and welfare</li> <li>More relevant and accessible extension messages</li> </ul>		

Networks at all levels supported innovation

Figure 7. Qualitative results from case study data. *Photos: Conor Ashleigh.*



Thank you to ACIAR for funding these projects, and to our Pakistani team members, and to the smallholder farming families we work with.

### Further information; References

ACIAR. Improving smallholder dairy and beef profitability by enhancing farm production and value chain management in Pakistan. <https://www.aciar.gov.au/project/lps-2016-011>

ACIAR. Transforming dairy farming in Pakistan. <https://www.aciar.gov.au/media-search/blogs/transforming-dairy-farming-pakistan>

Cook B., Satizabal P., Curnow J. 2021. Humanising agricultural extension: a review. *World Development* **140**.

Klerkx L., Schut M., Leeuwis C., Kilelu C. 2012. Advances in knowledge brokering in the agricultural sector: towards innovation system facilitation. *IDS Bulletin* **43**.

Warriach H., Wynn P., Ishaq M., Arif S., Bhatti A., Latif S., Kumbher A., Batool Z., Majeed S., Bush R., Pasha T., McGill D. 2019. Impacts of improved extension services on awareness, knowledge, adoption rates and perceived benefits of smallholder dairy farmers in Pakistan. *Animal Production Science* **59**.

David McGill is Senior Research Fellow in the Faculty of Veterinary and Agricultural Sciences at the University of Melbourne. He is a founding member of the RAID network, and currently a Crawford Fund (VIC) committee member, and he has been part of the coordinating team for numerous Crawford conference scholars' days. He has been working in the international livestock research for development space for over 15 years. David was initially given an opportunity to work in Pakistan, managing a research project focused on dairy extension. This led to a three-year role based in Lahore coordinating research activities, data collection and capacity building of local employees and field officers. The success of this program led to additional funding, which built on the previous work and incorporated research using a farm systems approach for smallholder households and co-designed a whole-family approach to extension. His more recent project is evaluating how these new extension technologies and approaches can be integrated within the larger innovation system. Some videos which explain the work that David and his wonderful team in Pakistan have worked on can be found [here](#).