

Beyond results: Planning science for meaningful change

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Abstract. There is an increasing need for research organisations conducting applied research to change from a traditional linear approach to extension to a more collaborative model. This paper outlines how AgResearch (the Crown Research Institute for New Zealand's pastoral industry) is focusing on partnering with next-users to deliver research outcomes to the end-user, planning science programmes with a clear understanding of who the collaborative partners will be and their roles in achieving impact, recognising the function of innovation brokering, and monitoring and evaluating progress within science programmes. Key findings have included the need to involve an implementation group to pilot tools and processes, using facilitators to guide project teams, defining language and concepts using electronic media, videos and case studies, and on-going monitoring and evaluation. This approach has enabled AgResearch to begin the process of cultural change with the aim of increasing the impact of science.

Keywords: adoption, practice change, agricultural innovation system.

Introduction

The need for an innovation systems approach to bring about practice change and innovation is well understood (e.g. Hermans et al. 2013; Klerkx, Hall & Leeuwis 2009). The agricultural innovation system consists of a range of organisations from different sectors to bring new products, processes and new forms of organisation into economic use, along with the institutions and policies that affect the exchange and access of new knowledge (Yang, Klerkx & Leeuwis 2014). In other words the focus is *not only* on the knowledge or technology, dominant in previous linear approaches, *but also* on the people and institutions around that knowledge and technology. This includes the emergence of intermediaries such as the innovation broker who can facilitate linkages within different parts of the innovation system (Klerkx, Hall & Leeuwis 2009).

This paper focuses on some of the initiatives that are currently being implemented to strengthen and enhance the role of an applied research organisation, AgResearch, within the wider agricultural innovation system. In strengthening its role in the agricultural innovation system, AgResearch (the Crown Research Institute for the New Zealand pastoral sector) is responding to changes in the external environment. External drivers include the Crown Research Institute (CRI) Task Force Report (2010), in particular recommendation 12 which identified technology transfer as a core responsibility for all CRIs. As outlined in its Statement of Corporate Intent (2014), AgResearch science has specific responsibility to deliver impact for the New Zealand pastoral sector. To achieve this, the organisation needs to work in a more collaborative manner with other science providers and stakeholders, including Māori, to deliver science. In addition, the scale and complexity of current primary sector issues have challenged traditional research-development-extension models and new approaches have been required.

In response to the changes outlined above, in 2013 the AgResearch Board signed off the Adoption and Practice Change Roadmap (AgResearch 2013). The Roadmap identified that AgResearch, as a researcher provider, does not have extension agents so has to partner with next-users to deliver research impact to the end-users. AgResearch is currently in the process of implementing the six recommendations of the roadmap. These recommendations include developing a focus on impact of research through the use of case studies and the development of planning tools, building capacity in monitoring and evaluation at the project or programme level, recognising and embedding the function of innovation brokering, and understanding and communicating what brings about better adoption and practice change from research. In order to get buy-in and cultural change at the organisational level, the Roadmap implementation has been supported by a multidisciplinary project team. There is also an implementation group with members from the AgResearch science groups which has assisted in the co-design and piloting of the tools and processes. External stakeholders have been involved through workshops, involvement in the case studies and in the piloting of the tools and processes. The rest of the paper describes the key approaches used to embed organisational change, and the lessons learnt two years into the implementation programme.

Approaches to planning science for meaningful change

This section discusses four examples of *how* AgResearch has been implementing tools and processes to deliver a culture that has a greater focus on research impact 'beyond results'.

Planning for impact

A starting point for impact planning was the use of the Synergy Matrix (Coutts 2006). This maps the internal and external relationships and roles of each stakeholder during the life of a research project. The Synergy Matrix was adapted into the 'Impact Planning Tool' and trialled with science teams during 2014. Key to the use of the tool is the identification of stakeholders and collaborators at the start of project planning and their roles in contributing to identification of needs and opportunities; participation in the research programme, either actively or passively; and delivery or extension of that research, as well as their anticipated roles in achieving the desired impacts.

Despite a tendency for project leaders to want to 'tick the box' by completing the Impact Planning Tool template themselves, the best results have been achieved by using a facilitated process with science teams for filling in the template. This often involved someone from outside of the team who coached the group through the steps, interpreted some of the gaps and asked 'so what' questions that arose from the discussions.

Due to the geographical spread of many AgResearch science teams video conferencing (VC) was often used when piloting this approach. Working together in a participatory manner via VC proved challenging but was effective in terms of cost and time. The facilitator would complete the template during the VC that was circulated as an electronic draft for comment following the meeting. Face-to-face meetings with small groups of up to 8 people was more effective than a VC. A 'sticky wall' or post-it notes were used to provide a shared picture on the wall, and then written up following the workshop. However, the process also worked well with the facilitator coaching the project leader through the steps.

Participants in the trial processes provided positive feedback when asked if using the tool made it easier to identify the role of different stakeholders at different stages of the project, and whether they would use the planning tool again.

An in-house evaluation of the use of the impact planning tool (Botha 2014), suggested that the tool was most beneficial when it was used early on in the planning process rather than when all the 'thinking had been done already'. It also showed that the tool was useful for different types of science (fundamental versus applied) and could be used for a range of programme sizes.

The impact planning tool is now being used throughout AgResearch as part of the development of major funding proposals. Group development is encouraged, and facilitators from different parts of the organisation are being trained in the use of the tool to work alongside science teams.

Principles for success – understanding what works

A case study approach was taken to establish the factors that contribute to successful adoption and practice change from research and AgResearch's role in contributing to these factors.

Three case studies of previous AgResearch projects, which were considered to bring about successful impact, were undertaken during 2014. From these three case studies, seven common themes or success principles were derived to describe what led to practice change. These success principles are described as:

- Take a problem focus – begin by identifying the issue or opportunity; take a broad view of the system (farm or industry).
- Understand the next- and end-users – take time to build relationships; understand their needs and the way they work.
- Align needs – draw together complementary skills; meet individual needs and overall initiative aims.
- Assemble the right team – in addition to technical and project management project teams also need collaborative leadership; people who can take a broad view of the system, people who can act as translators among stakeholders.
- Involve stakeholders in implementing solutions – solving complex problems requires on- and off- farm solutions; multiple stakeholders are key to implementing the many components of solutions.
- Plan-do-observe-reflect – action learning cycle and on-going monitoring and evaluation to adapt to changing circumstances.
- Front up – share results early and often.

These principles of success are being verified through two additional case studies in 2015, a stakeholder workshop, and a quantitative and qualitative survey of AgResearch project managers. The information from these activities to date suggests that, while not all seven principles can equally be applied to all types of research programmes, they should all be considered at the planning stages of research projects as key predictors of bringing about successful change.

The principles of success are being communicated more widely using electronic media – including video and web stories based around the case studies.

Embedding innovation brokering

The concept of the innovation broker to facilitate adoption as part of the agricultural innovation systems is not a new one (Klerx et al. 2009; Michaels 2009), however, the practical application to a science organisation has proved to be a challenge. Despite there being individuals within AgResearch operating in a brokering role, the processes were not in place to recognise or reward these individuals. There was resistance amongst AgResearch staff to creating another type of role, so innovation *brokering* is being described as a *function* which is desirable to have as part of the team. This doesn't mean that everyone has to be a great connector or translator – but to bring about change there should be someone within the team that can perform such roles. Within AgResearch, job descriptions of some of the roles within the company, especially of those staff who have an external stakeholder focus, are being updated to include innovation brokering descriptors. Innovation brokering is being introduced as part of the competency descriptors for science staff so it will be possible to measure performance outside of the more traditional measures such as publications. Further work is required to embed innovation brokering more widely so that it becomes an accepted part of team planning. There are also opportunities to introduce training in some of the softer skills of brokering, such as facilitation and translation of science. Developing closer relationships with external individuals and organisations, including agribusiness professionals and industry sector organisations, which perform brokering functions is also necessary.

Monitoring and evaluation

Introducing monitoring and evaluation tools and processes into AgResearch has given staff a better understanding of how their science needs to operate as a part of a wider system to bring about change on the ground.

For example, simple programme logics (showing the links between project inputs and activities to impact) have been developed in conjunction with project teams, as well as measures and methods for assessing progress towards the desired impact. The programme logic provides a framework for thinking beyond the output to what impact will be created and how that impact will contribute to change in the long term. However, there were challenges involved in demonstrating the value and long-term impact of building a monitoring and evaluation framework into the front end of project planning. To mitigate this, simple and straightforward methods were piloted with selected project teams. Having people with skills in monitoring and evaluation, as well as facilitation, who can assist the project team at no additional cost to the team has been critical. These facilitators have also been pro-active in arranging meetings and follow-up, rather than putting this burden on the project team. As with the impact planning tool, facilitated participatory processes using resources such as sticky walls and/or large wall charts with post-it notes, had the secondary effect of encouraging positive team dynamics as well as completing the planning task. Having a small group of people trained in monitoring and evaluation who could ask the right questions and keep the discussion at a high level rather than delving into the specifics of the science kept the process moving.

As part of the changing external environment, funders are increasingly requiring that a monitoring and evaluation component be built into research programmes as part of their own accountability. This is providing an important driver for AgResearch to incorporate more monitoring and evaluation into project planning.

Discussion and conclusion

AgResearch is not alone in responding to changes within the wider agricultural innovation system aimed at increasing the impact of science. The approaches outlined here, are in response to the increasing complexity and scale of the issues that are being researched – where it takes more than a simple piece of knowledge or technology to bring about change, whether on-farm or for another end-user. Such approaches are also in response to a more collaborative landscape whereby the research organisation is expected to work closely with stakeholders and end-users to deliver solutions to complex problems. While most parties agree that a

collaborative approach to research is desirable, some of the practical 'how to' tools and processes are not always available. This paper has described just some of the tools and approaches to enable a research organisation to plan and implement science for meaningful change.

In introducing these tools and ideas it is recognised that changing a culture from focussing on outputs to impact to bring about change does not happen quickly. It also requires some new types of thinking and soft skills, hence the articulation of the innovation brokering function, and the development of capability in monitoring and evaluation.

Some of the mechanisms employed to help communicate and embed change include:

- An 'implementation group' representing the science groups across the organisation, with representatives at different levels of science.
- Taking time to define the language and terms used, for example developing the brand "Beyond Results" when feedback suggested that the phrase 'Adoption and Practice Change' did not resonate with some people.
- Having a multidisciplinary project team, involving for example a senior communications adviser, human resource advisers, learning and development, and scientists or project managers from outside of the immediate team of social scientists.
- Making use of electronic media to deliver tools and messages to a wider group. Initially this has been through an internal internet site, with an internal blog; however, we have also developed the external website www.beyondresults.co.nz which will have interactive content including videos and links to a discussion forum.
- Piloting tools and processes with willing (as well as unwilling) participants and continually evaluating their responses has helped to make these more user-friendly.
- Incorporating the views of external stakeholders through face-to-face discussions, as well as a larger stakeholder workshop.

We are by no means 'there' yet, but at the start of a journey that will ultimately result in better uptake and use of agricultural research to bring about meaningful change.

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