



Agricultural Innovation Inquiry

A submission from FarmLink



FarmLink Research Limited
PO Box 521 | 361 Trungley Hall Road
TEMORA NSW 2666
Ph: 02 69801333 Fax: 02 69781290
www.farmlink.com.au

Introduction

Thank you for the opportunity to prepare a submission to the Inquiry into Agricultural Innovation, an exciting phase for Australian agriculture as our industry strives to lead the way in sustainability, productivity and adoption of innovation – an ethos at the core of FarmLink Research.

For your additional information, I have attached a brief profile on FarmLink, giving you the opportunity to learn a little more about our organisation and the region we span in Southern New South Wales.

Summary of Recommendations

- Establish a culture of innovation rather than research – an innovation system works with stakeholders to define the issue, creates new information if required, iteratively refines it to fit into the agricultural system and supports adoption within a single interdependent process
- Establish a clear investment strategy for extension activities with public good elements (partial or complete)
- Invest in development of formal, tertiary training in agricultural extension
- Utilise existing farming systems groups to deliver extension for the industry and national benefit

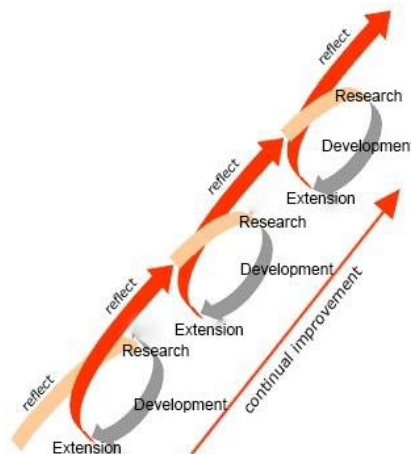
Terms of Reference

1) Improvements in the efficiency of agricultural practices due to new technology, and the scope for further improvements

Unquestionably technological advances in genetics, chemistry, machinery and farm practice have been the basis of vast efficiency gains in agriculture. However, the advances in farm productivity, profitability and sustainability have only been realised when these technological advances have been adopted by farmers. Creation of new ideas and technology through R&D and their adoption through effective extension activities has required clear policy settings and investment strategies that recognise innovation as a system where RD&E are interdependent and equally important.

Creation of new technology on its own does not generate improved efficiency nor advance agricultural productivity and profitability. Technology needs to be considered in the context of the agricultural system, the capacity/willingness/ability of participants to adopt new technology and the relative advantage (cost/income/time/applicability) that the technology represents.

A change in agricultural systems or **agricultural innovation** requires new ideas/technology (research), application of the ideas in the context of the existing system to create what is to be the new system (development) and enabling and empowering of participants to adopt the new system as the norm (extension). The RD&E process – the innovation process – could be viewed as an iterative upward spiral of continual improvement. Each stage informs the stage that follows it along with the stage preceding, all the while progressing the whole. It is a mistake to view RD&E as discrete linear steps.



In order to be successful in addressing complex issues or systems the innovation system requires the involvement of stakeholders in the definition of the issue, design of the solution and implementation of the solution into common practice. We should recognise that not all issues are resolved with research. In fact, many issues remain despite the fact that knowledge and technology exist to resolve them. Technology and knowledge often exist well in advance of widespread adoption.

Numerous other submissions to this inquiry have identified factors that impact the rate and absolute levels of farmer adoption of different technologies and ideas. They recognise that adoption is as much to do with the people and their business as it is to do with the technology or the idea. The key point that we would make is that investment in technology and ideas needs to be balanced with investment

in adapting those technologies and ideas to Australian farm systems AND investment in enabling and empowering farmers to implement change on farm and in their farm businesses.

2) Emerging technology relevant to the agricultural sector, in areas including but not limited to telecommunications, remote monitoring and drones, plant genomics, and agricultural chemicals

It

- Technology and knowledge to provide stewardship of agricultural chemicals and genetic resources for pest and disease resistance have been developed in integrated pest and weed management strategies (IPM & IWM). However, there has been limited adoption of the IPM & IWM strategies developed – investigation of the barriers to adoption and investment in appropriate extension strategies would be recommended.
- Collection, compilation and analysis of ‘big data’ represents the new frontier for potential improvement in efficiencies within existing farm practice. Capitalising on this potential is contingent on –
 - Reliable telecommunications capacity
 - Analytical capacity and technological ability to implement variable practices
 - Data ownership and management safe guards plus incentives for farmers to collect, curate and share data
 - On farm practice and equipment improvements keeping pace with advances in data analytics – capacity to utilise the outcomes of analysis

3) Barriers to the adoption of technology

There are numerous barriers to adoption related to complexity and cost/ benefit of the change, personal attributes and social norms – our focus here is on the process of enabling farmers to adopt new technologies and ideas (agricultural extension). Implemented appropriately the extension process (conducted interdependently with R&D) identifies and addresses other barriers to change.

Policy Framework - private versus public good

At both national and state levels there has been clear public policy to reduce government agency involvement in delivery of agricultural extension services. In some instances, this has created opportunity for private enterprise and in other instances it has created a void in some regions and/or some agricultural industries. There is no argument to return to government provided agricultural extension services. It is possible to be more flexible and responsive, and potentially more cost effective, using private entities to deliver extension.

A different question is however, who pays for extension.

The policy of non-government extension delivery has been accompanied by a less clear strategy of investment, by government and RDCs, in extension services and activities delivered by third parties. It is possible to identify extension activities that are wholly private good and should remain the remit of

private business (eg delivery of new chemicals to market for weed and pest control). However, it is also possible to identify extension activities that are a combination of private and public good (eg delivery of integrated pest and disease management systems that preserve the usable life of chemical solutions, reduce farmer cost and deliver environmental benefits) and activities that are arguably pure public good (eg delivery of non-chemical pest and disease control mechanisms with large environmental benefits). There is a strong argument that public funds should be used to support adoption of technologies that have a significant industry and national benefit.

Current thinking appears to be that extension is private good in nature – advisors benefit through the sale of knowledge to clients, by appearing more knowledgeable and attracting more clients; farmers benefit through the obvious production/efficiency/profitability improvements. The industry and national benefits achieved through quicker uptake or broader uptake of new technologies and ideas are either less clearly understood or overlooked. There is also the question of immediacy and the likelihood and rate of adoption of technologies that don't generate immediate benefits for advisors and farmers (although they may down the track) or those that never generate individual benefit but still create industry and national benefits.

Recognition that not all agricultural extension can or should be delivered in a user-pay profit based model by private business is a critical step in development of cohesive and effective investment strategies for extension activities. This could be further supported by articulation of the industry and national benefits sought and the features of public good agricultural extension to provide guidance to government and statutory bodies for their investments.

Extension activity with public good outcomes does not have to be delivered by government agencies. Farming systems groups are private entities with public good mandates. A network of farming systems or grower groups exist nationally. These groups are typically incorporated associations or companies limited by guarantee with not for profit status. Farming systems groups have been established by local farmers, researchers and advisors to deliver benefit to regional agriculture. These groups deliver activities that complement the services offered by commercial advisors. In the context of adoption of innovation farming systems groups are a value tool representing large numbers of engaged farmers at a local level.

Recognition of the public good function that farming systems groups provide that is complementary to the commercial services delivered by private advisors. The national network of local farming systems groups can and should be engaged to deliver public good extension.

Fragmented Strategy and Variable Implementation

The strong temptation is to consider RD&E as discrete steps in a linear process. An outcome of this thinking is the tendency to separate the activities, where the desirable outcomes of Research are transferred to Development who in turn transfer suitable ideas and technology to Extension. This thinking results in fragmentation of the innovation system – disconnect between the creation of new ideas and those who would ultimately use them. The likelihood of unnecessary and/or inappropriate research and development occurring increases along with less than desirable levels of adoption.

Considering issues, especially complex ones, in a whole of systems context, where stakeholders are engaged in definition of the issue, identification of solutions and enabling of adoption will lead

to greater levels of sustained change. Issues should be addressed as innovation projects not research projects.

Capacity – extension expertise, training and capability

Agricultural Extension is broadly defined as action that enables and empowers implementation of change (innovation) on farm and in farm businesses. Extension moves people through the process of change by creating awareness, providing knowledge & skill, generating motivation and supporting action. It is most often confused with, and reduced to, communication – the dissemination of knowledge. Extension is about the needs of the recipient rather than the desires of the deliverer. Specific skills and expertise are required to successfully facilitate adoption of new technologies and practices. These skills are different to those required for research and development. Currently there are few options available for formal extension training at a tertiary level.

Investment should be made in the development of formal tertiary extension training.

About FarmLink

Productivity, profitability and sustainability - securing the future of farming

FarmLink is about the future of farming – productive, profitable and sustainable farms and farmers. We are committed to delivery of innovation for farmers in southern NSW and supporting them in the implementation of change on their farms and in their farm businesses. We believe that strong farm businesses create vibrant local communities.

Governance

FarmLink is a not for profit company limited by guarantee established in 2004. The constitutional objectives of the company are focussed on RD&E activities designed to achieve profitable and sustainable farming businesses in southern NSW.

FarmLink has a board of seven directors with expertise and experience in legal practice, financial and business management, not for profit organisation management, farming, extension and communication. All directors are selected on the basis of their skills and expertise - five of the Directors are drawn from the member base and the remaining two are independent. The FarmLink Board has 3 committees – Audit & Risk Committee, RD&E Committee and Nominations & Remuneration Committee. There is monthly financial and project reporting along with annual independent audit of business financials.

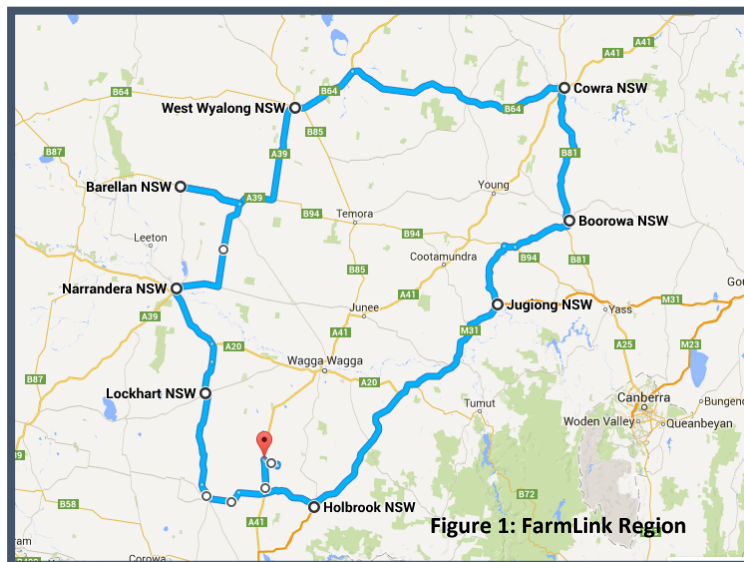
The Objectives of the Company are to:

- (a) To improve the viability of farm businesses in southern New South Wales through research and development of systems that will further the environmental and economic sustainability of the region;
- (b) To act as an independent regional grower and industry driven organisation that recognizes and addresses the research and development needs of local communities in southern New South Wales;
- (c) To develop, test and extend innovative science based management systems to improve profitability and protect the natural resource base of mixed farms in southern New South Wales; and
- (d) Co-ordinate and communicate more widely and effectively the results of private, public and grower group funded research and development activities relevant to farming systems in southern New South Wales

Reach

The FarmLink region covers 1.2mil ha of arable land across SNSW (see figure 1). The region encompasses high, medium and low rainfall production zones and a range farming enterprises from continuous cropping, livestock and mixed farming enterprises. Acidic red duplex soils are dominant in the cereal and canola production zones across the region.

FarmLink reaches over 3000 people annually through our media and social media presence, events, activities and communications.



The FarmLink's activities and region involves 15 different local government areas. These include Temora Shire Council, Junee Shire Council, Coolamon Shire Council, Cootamundra Shire Council, Young Shire Council, Wagga Wagga City Council, Cowra Shire Council, Boorowa Shire Council, Harden Shire Council, Gundagai Shire Council, Greater Hume Shire Council, Lockhart Shire Council, Narrandera Shire Council, Bland Shire Council and Weddin Shire Council.

Members

We have approx 320 members involved in agriculture in SNSW representing 300+ farming, advisory, research and other agribusinesses. Our member database includes demographic, enterprise, farm and business management and motivational information about our members. Our farming members range from continuous croppers, mixed farmers through to graziers and operate in low, medium and high rainfall zones. Our membership package targets all of the people involved in the success of the farm business (men/women, young/old, owner/employee) along with the advisors, financiers and researchers who bring specific expertise to key business decisions.

Our core offerings to members are –

- Locally designed and conducted RD&E – our current portfolio represents \$1.9mill of industry funds contributed as cash along with considerable in kind contributions. We deliver RD&E outcomes through specific events, publication and activities as well as through our key event and communication program.
- Packaging and delivery of information – we deliver information tailored to our members and their needs
- Annual Events Calendar – we conduct a range of social & informative activities designed to capitalise on the fact that farmers learn best from one another.

Business

FarmLink has an average annual turnover of approximately \$1.1mil and 5 staff with skills in business management, project management, field research, agronomy, communications, farming and office administration. Our office is located at Temora Agricultural Innovation Centre (TAIC) on the outskirts of Temora which is roughly in the middle of our region. FarmLink's business involves local agricultural RD&E along with management of the TAIC.

FarmLink currently partners with GRDC, CSIRO, NSW DPI, Riverina LLS, UA, Bayer, DAFF, AgGrow Agronomy, St Anne's Central School, AGT, PacSeeds, CSU, and the Graham Centre to conduct RD&E activities at 9 demonstration and/or field trial sites across our region including the TAIC. We have projects focussed on weed and herbicide tolerance management, soil micronutrient deficiency, carbon sequestration, stubble management, strategic tillage, crop sequences and early sowing.

FarmLink has 17 corporate partners across the agribusiness sector. Our partnership packages have been designed to appeal to businesses and organisations with values and aspirations aligned with FarmLink's.

Recently FarmLink has established a Farming Systems Partnership with Charles Sturt University and 3 other farming systems groups to create a supply chain for agricultural training, research, development and extension in SNSW. Through this partnership FarmLink contributes to RD&E priority setting, provides access to farmers, field trial capacity and industry work experience opportunities and receives academic and scientific oversight of projects and gains access to 4th year and PhD students working and located within the FarmLink business.