

To: Parliamentary Committee on Agriculture and Industry

Date: 9 April 2016

Key Points from Professor Robert Banks

Public investment into agricultural research, development and extension (RDE) has been shown to generate very strong returns to the community over sustained periods (eg. Mullen et al, 2010). Reflecting the nature of RDE and the structure of Australian agricultural industries, in particular the almost complete absence of vertical integration via ownership, these returns are typically captured across long periods of time, and across many enterprises. These facts reinforce the public goods nature of agricultural RDE.

Notwithstanding the strong returns generated for our community, public investment into agricultural RDE has over the last 20 years been declining for a range of reasons, one of which seems to be lack of understanding of the timelines between investment and return coupled with failure to appreciate the public goods nature of the outcomes. The decline in public investment is in simple terms generating a massive opportunity cost which is borne by the entire community, in both poorer profitability and resilience of agricultural industries, along with declining capability to generate innovations. Increasing commercialisation and privatisation of RDE investment has exacerbated these trends.

Continuous innovation via a strong program of investment into coordinated RDE is essential for maintenance of economic viability in agricultural production, coupled with maintaining and growing ability to balance profit with environmental sustainability. As much as possible, this will need national scale programs, with appropriate regionally focussed elements coordinated across the country, and a long-term perspective on the investment – 10 to 15 years at least, with rolling 5-yearly updates.

Critical elements of such programs will include:

- good infrastructure, which increasingly will mean the ability to capture, move, store and analyse or process large volumes of data.
- having a strong critical mass of people who can analyse data – trained researchers and analysts – and turn it into useful information tools and knowledge for farmer. This includes ensuring that the information tools and knowledge are robust and have been properly evaluated through rigorous scientific methods. It also includes ensuring that researchers and advisors have sensible career paths, rather the current 3-yearly internship model which makes work in other sectors or countries relatively more attractive. Well managed centres of excellence are an important means of maintaining critical mass, and with appropriate oversight, maintaining high standards of expertise and innovation, and acting as innovation hubs strongly networked out into the community.
- good infrastructure in the form of support and training, both public and private, to ensure that farmers and others in agricultural value chains and communities have the skills and confidence to make use of the information tools and knowledge.
- and finally, that there is a very clear role for government in both helping ensure that these forms of infrastructure are in place and continually adapting – not necessarily being solely responsible for funding, but recognising that market failure in knowledge and information development and delivery are frequently present, and failing to overcome them generates massive opportunity costs for the community.

Australia has in some respects been a world-leader in a number of areas of RDE investment: the RDCs, state Departments, CRCs and CSIRO have all been highly valuable innovations in long-term RDE. All are under threat or declining in terms of their level of investment and their long-term perspective. None can now sustain the long-term view that is essential.

If these trends are not reversed, and the critical elements listed above not ensured, Australia will become more and more a “colony” of overseas thinking, and lose the ability to adapt imported ideas to our often unique production conditions. And rural and urban communities will suffer economically and socially in terms of capacity for resilience and innovation.

The opportunities are huge, and can significantly improve the viability of rural Australia, so focussing on how innovation can be stimulated is very worthwhile. So too are the opportunity costs of not acting with a longer perspective expressed through strongly coordinated national programs.

Key Points:

1. Agricultural RDE generates very favourable returns for the community and direct stakeholders, and there is no reason for those returns to decline, excepting decline in investment.
2. Despite this, Australia has been reducing public investment into agricultural RDE (and there is no replacement of that decline with private investment, reflecting the public goods nature of much of agricultural RDE).
3. This trend has coincided with increasing fragmentation of effort and increasingly short time-frames, leading to increased management costs per unit of effort.
4. While a number of elements of the agricultural innovation system, such as RDCs, state Departments, CRCs, CSIRO and university R&D all have valuable features and contributions, the overall effort is often poorly coordinated and/or too short term.
5. Opportunity costs associated with declining investment, short-termism and fragmentation will be exacerbated in the “big data” era – a key aspect of big data is to bring together data from disparate sources and analyse it to uncover opportunity.
6. These trends must be reversed if Australia is to maintain innovation capability and capacity: focus, scale and coordination must be improved. This will require governments at both the Federal and state level to a) commit to sustained investment, and b) to strong coordination.

Bio:

Professor Robert Banks is Director of the Animal Genetics and Breeding Unit (AGBU), a joint venture of the University of New England (UNE) and NSW Department of Primary Industries (NSW DPI). The JV was established in 1976 and focusses on research and development into the application of genetics for Australia’s livestock industries (which extends to include genetic improvement of trees, fish and honeybees, among others). Prior to taking up the role at AGBU, Professor Banks was with Meat and Livestock Australia for 25 years, and lead the development of the national genetic improvement program for sheep, as well as managing genetics RDE investment and RDE strategy.

Reference:

Mullen, John (2010) *Trends in Investment in Agricultural R&D in Australia and its Potential Contribution to Productivity* **Australian Agribusiness Review vol. 18**