

## Perception is profile: a review of research funding priorities in the Australian agricultural sector

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### Abstract

Despite primary producers playing a high-profile role in the nation's image of Australian life, that interest in where and how food is produced has not translated into increased funding and support for Australian producers and researchers supporting those efforts. A careful examination of the perceptions of the nation's agricultural activity is included. Increased research funding for agriculture and production technology will engage the public with agricultural development through higher-visibility research programs. The result will be increased interest in and support for Australian products, which will be reflected in revenue. I advocate for the creation of a panel of motivated and enthusiastic primary producers and scientific researchers featured in a media blitz and shaped into a committee, from which the future leaders of the national agriculture sector could be cultivated.

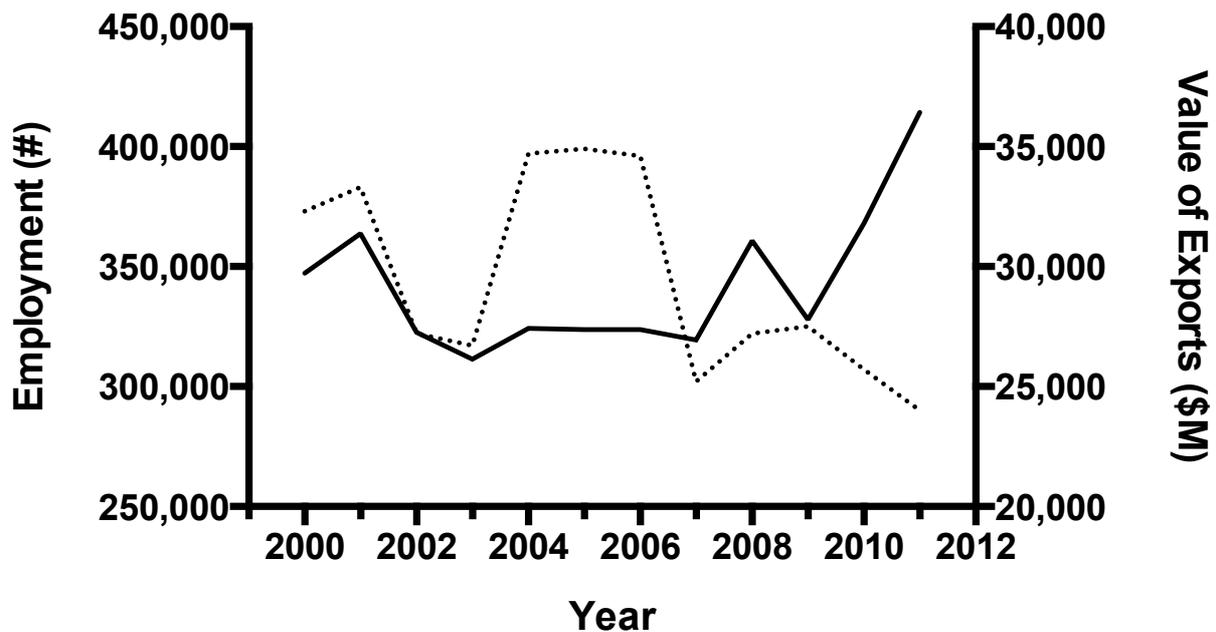
### Community Perceptions

In 2013, Australians regularly drink single-roast coffee, single-malt scotch, and vineyard designated wines. National TV programs report on the conditions of Australian livestock in overseas abattoirs. Many support farmers markets and locally grown products from city to sand – but, for some reason, are still hesitant to consider backyard hobbyists or small-scale producers “farmers.” Despite the desire to be a part of agricultural life and support farmers, many Aussies feel separate from producers – in geography, but not in spirit.

The Australian nation is one of the most scientifically literate [1]. In practice, this is evidenced by the willingness of the Australian public to stand behind water conservation initiatives, the widespread planting of genetically engineered crops, and the science behind climate change (independent of personal opinions about the Carbon Tax). The community perception of primary producers as rural Luddites is simply not accurate, and much has been done recently to change that attitude. Vineyard tours, blogging about farming life, and increased media attention (see: *The Farmer Wants a Wife (or, Husband)* for more on this phenomenon), have brought producers and consumers closer than ever.

The 4-H clubs in the United States have been shown to be an excellent way to garner interest in agriculture from students and young people [2], and similar Australian groups spread the same message more widely in metropolitan areas. However, there is still a critical disconnect between the food on people's tables and their perception of agriculture.

Many Australians aren't aware of the cost of farming, and the degree to which it has become an industry reliant on the same types of technology that other fields use. Sophisticated weather monitoring equipment and GPS-based tracking, planting and picking machines allow farmers to work more precisely. Despite the increasing use of technology that can assist producers, employment in the sector is decreasing while the value of exported farm products increases (Figure 1).



**Figure 1.** Australian employment in the agriculture sector over four quarters in each year (left y-axis, dashed line), and the annual value of Australian farm exports (including wine) in millions of Australian dollars (right y-axis, solid line). Data from ABARES [3].

With an increased appreciation of the value of the agricultural export, the public perception of Australian agriculture as a critical component of the nation’s bottom line would more closely align with the current environment.

### From Perception to Practice

The image of life on remote cattle stations and rural homesteads are as much a part of Australian lore as the outback, but are sometimes difficult to imagine. The perception of agriculture is critical to its continued success, not just for producers but for those working on agricultural issues in other fields.

As an example, take the Australian Research Council (ARC). The ARC is the national statutory agency tasked with providing advice to the Government on research matters, as well as managing the National Competitive Grants Program (NCGP) and administering Excellence in Research for Australia (ERA). The mission statement of the ARC is “to deliver policy and programs that advance Australian research and innovation globally and benefit the community.” From the ARC website ([www.arc.gov.au](http://www.arc.gov.au), accessed 23 September 2013):

Through the [NCGP](#) - a significant component of Australia's investment in research and development - the ARC supports the highest-quality fundamental and applied research and research training through national competition across all disciplines, with the exception of clinical medicine and dentistry.

[ERA](#) assesses research quality within Australia's higher education institutions and gives government, industry, business and the wider community assurance of the excellence of research conducted. It also provides a national stocktake, by research discipline areas, of research strength against international benchmarks.

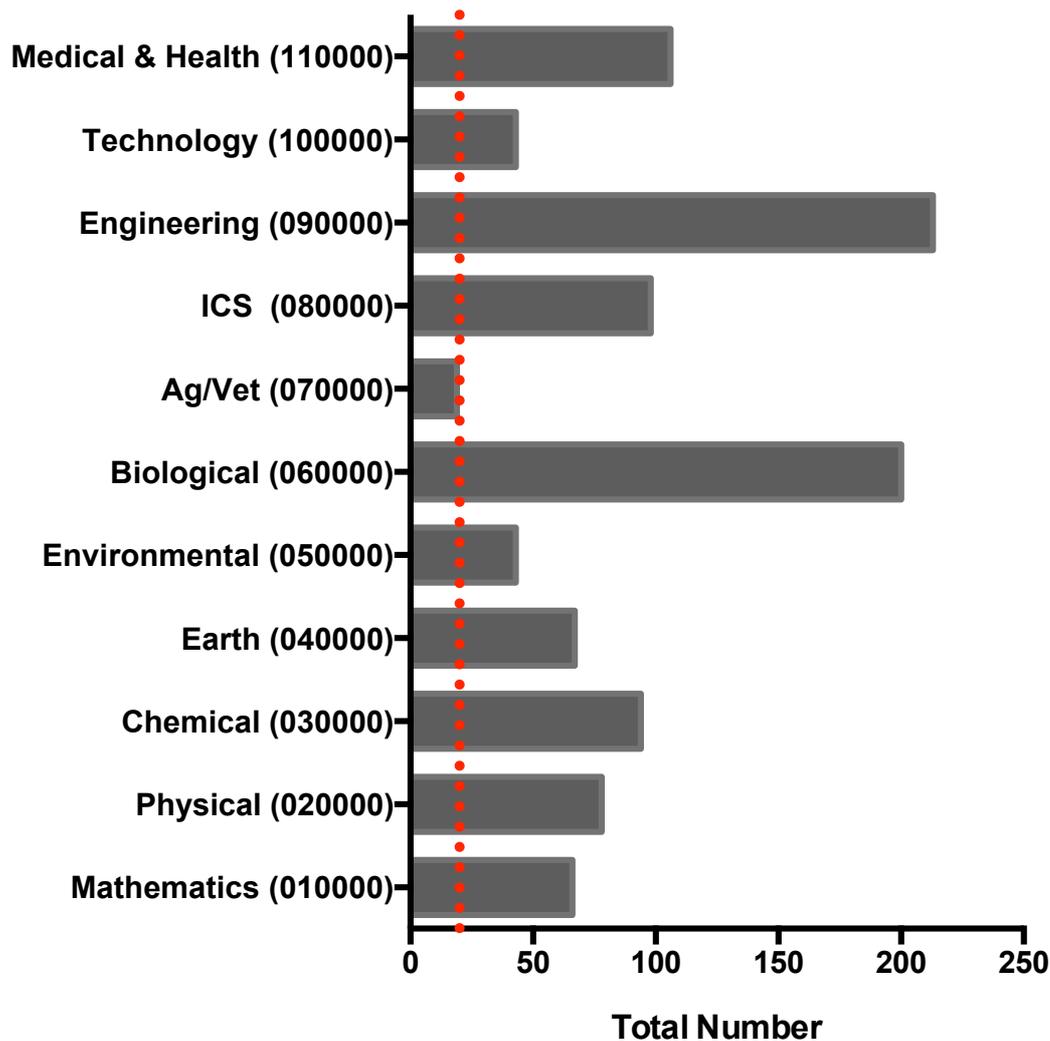
Thus, it would seem funding research that improves the lives and outputs of primary producers would be a priority for the ARC, particularly given that agriculture is one of the areas where unrestricted funding (e.g., with no constraints around the intellectual property created) is less common than many scientists would like. This is in contrast to medical research, where philanthropic organisations can be approached for funding free of constraints around the intellectual property that is created during the course of a research program. Additionally, the National Health and Medical Research Council (NHMRC) is “Australia's peak body for supporting health and medical research; for developing health advice for the Australian community, health professionals and governments; and for providing advice on ethical behaviour in health care and in the conduct of health and medical research” ([www.nhmrc.gov.au](http://www.nhmrc.gov.au), accessed 4 October 2013). Those researchers working in the fields of human health and medicine could conceivably fund their work through both the ARC and NHMRC, whereas those of us in the agricultural sector have only the ARC.

However, as has been covered extensively in a six-part series on “[The future of agricultural R&D](#)” by Mick Keogh on the Ag Forum this year ([http://www.farminstitute.org.au/blog/Ag\\_Forum/](http://www.farminstitute.org.au/blog/Ag_Forum/), accessed 4 October 2013) funding for research relating to primary producers and other positions involved in the agricultural sector has fallen.

Researchers exploring different aspects of agricultural sustainability, environmental impacts, or improvement techniques have limited funding sources. The Rural Industries Research and Development Corporation (RIRDC) has a budget of roughly \$25M per annum ([RIRDC Corporate Plan, 2012–2017](#)). The RIRDC highlights their intellectual property (IP) and commercialisation principles on their website, which is attractive in terms of protecting and exploiting research outcomes, but may pose problems for work that has already been patented or for researchers at institutions with strict IP conditions. The rural research and development corporations (RDCs) are the “Australian government’s primary vehicle for funding rural innovation,” and had a budget of \$470M in 2008-9 for research and innovation expenditure ([Australian Government Department of Agriculture](#))

On the other hand, the ARC has an estimated operating budget of over \$880M per annum (in 2013-4), and the NHMRC (National Health and Medical Research Council, the health and clinical research competitive granting body for Australia) has an estimated operating budget of over \$940M (2013-4) (data excerpted from the [2014 Australian Government Department of Industry Australian Key Innovation Indicators Data Card](#)). Agricultural researchers are not eligible to apply for NHMRC funds, but it would be logical to assume since agricultural research is a priority for the government that the ARC would be funding a variety of projects focused on agriculture and livestock production.

The ARC classifies its proposals based on the Fields of Research (FOR) indicated on each proposal. The FOR codes are created and maintained by the Australian Bureau of Statistics (<http://www.abs.gov.au/>, catalog number 1297.0, accessed 4 October 2013), Grant applicants self-indicate which FOR codes are appropriate, and rank them to a total of 100% on each proposal. For example, all projects in Division 07 are primarily focused on the agricultural and veterinary sciences; within the division, each group has a different focus. For example, the group 0702 is for Animal Production. The ARC makes the number of successfully funded applications in each scheme available to the public. However, the total number of applications from each FOR division (including those that were not funded) is not made publicly available. An overview of the recent results from the Australian Laureate Fellowships (2012), Future Fellowships (2012), Linkage Projects (Rounds 1 and 2, 2012), Discovery Projects (2013), and Discovery Early Career Researcher Awards (DECRA, 2013) is provided (Figure 2).



**Figure 2.** An overview of ARC project grants funded in 2012–2013, by FOR code division. Of the 1494 total proposals included in this figure, 1027 (69%) were from the sciences. The dashed red line at the number 20 marks the number of proposals funded during this period over the number from the agriculture and veterinary sciences. Data from the [ARC](#).

As noted previously, these results only reflect the number of applications that are funded for projects classified within the agricultural sector by the self-selected first FOR code listed by the project’s named investigators, not the total number that were received. Even so, the number of projects funded in the medical and health division (106 proposals) is over a four-fold increase from the number of funded projects in the agricultural and veterinary sciences (19 proposals).

Increased monitoring of the impartial, competitive funding scheme successes of agricultural research projects should be another focus to help inform how agricultural research is perceived by the scientific community. The research community, it should not be forgotten, is made up of communities of people – most of who are based in cities – and who have their own opinions about the importance and role of agriculture. Despite these differences agricultural research should be seen as a local and national priority, and supported accordingly.

## Conclusions

Wendell Barry, the American author and farmer, has said, “Eating is an agricultural act” (*What Are People For*, 1990). We should frame eating, drinking, and all applications of sustainable production, from cosmetics to emu oil, as critical pieces in the agricultural pipeline. More research on Australian products means increased production of Australian products. When shoppers chose Australian products – not just those assembled in Australia, or made in Australia from imported ingredients – they send a clear directive to shopfronts and producers.

The creation of a national panel of primary producers, government and industry stakeholders, and academic researchers, could help to highlight the issue of funding for agriculture research and establish priority areas. In addition to a focus on policy, the panel will be tasked with ensuring the public is informed about advances in agricultural science, Australian products that are new to the market, and how the public can engage with primary production. This combination of policy work and citizen science will raise the profile of Australian agriculture on a national level. As a researcher working in this space, I would be happy to contribute to such a working group and liaise with other stakeholders.

Community perceptions of agriculture do matter. They influence funding priorities, and affect how production goals are met and evaluated. These relatively abstract perceptions have a concrete impact on the primary producers who rely on agriculture and related fields for their livelihood and their family’s financial security, as well as researchers exploring ways to make agriculture more sustainable and productive for our nation’s producers.

## References

1. OCED *PISA 2006 Science Competencies for Tomorrow’s World*; Paris, 2007; pp. 383.
2. Lexington *Farming as rocket science*. *Econ*. 2013.
3. ABARES *Agricultural Commodity Statistics 2012*; Canberra, ACT, 2012.