

AUSTRALIA'S RURAL INNOVATION FUTURE

PERFORMANCE REVIEW OF AUSTRALIA'S RURAL INNOVATION SYSTEM

Summary



August 2018

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THE REVIEW CONTEXT



Australia is a nation blessed with extensive natural capital – both in terms of scale and variety. Our rural industries use and add value to this natural capital, in so doing making important economic contributions, but also social, cultural and environmental contributions.

Our rural industries can also deplete and degrade this natural capital – generating flows of adding value in the present by reducing the value of the stocks of natural capital available in the future.

Innovation (new knowledge usefully applied) is central to how this natural capital can be used – and can be conserved.

Consequently, it is useful to periodically take stock of how well we are doing in our rural innovation system and what we should do to improve our approaches to innovation.

This major Review of the rural innovation system is one such stock-taking opportunity. The review process has been extensive and detailed. This depth and breadth is reflected in a range of substantial documents.

This Summary Report focuses on the main conclusions and messages to emerge from this investigation.

PROJECT GOAL



This Review of the Rural Innovation System responds to Terms of Reference issued by the National Research and Innovation Committee¹ to describe the performance and impact of Australia's rural innovation system:

The project collates and analyses evidence across a range of metrics to present a comprehensive view of the overall performance of the system, highlighting areas of strength, opportunities for improvement and gaps in our knowledge base.

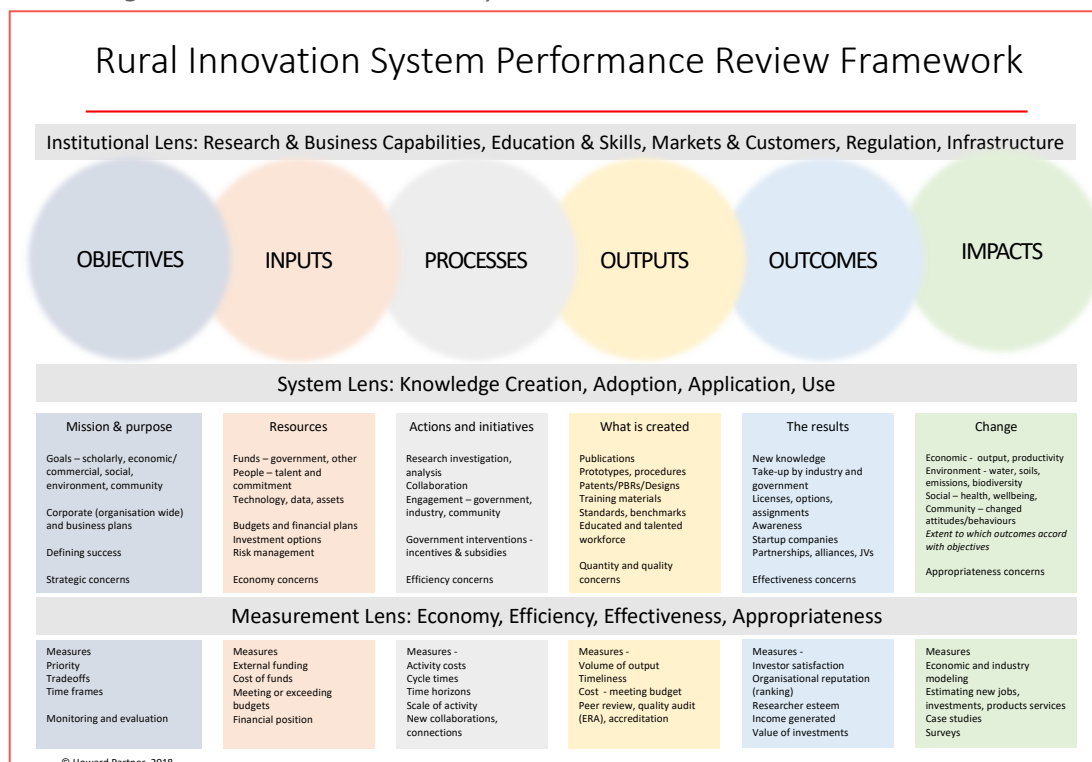
Specifically, the project -

¹ The R&I Committee is an Advisory Committee to the Agriculture Senior Officials Committee (AGSOC) and is responsible for the oversight of the development and implementation of the National Primary Industries Research Development and Extension Framework (the Framework) and also provides advice on the overall performance of the primary industries research innovation system.

- *Assesses the performance framework used to assess the national innovation system² for application to the rural innovation system, and proposes adjustments as necessary³*
- *Identifies and collates evidence against agreed metrics under the performance framework*
- *Identifies gaps in the available evidence*
- *Develops a comprehensive report assessing the performance of Australia's rural innovation system in national and international contexts*
- *Recommends opportunities for improvement.*

The Review Report responds to these requirements. It contains a very extensive body of evidence in relation to agreed metrics. These are presented in terms of a *logic framework* that addresses objectives, resources (inputs), processes (methods, collaboration), outputs (papers, patents, standards), outcomes (new knowledge adopted and applied), and impacts (change) in an institutional framework. This is represented in Figure 1 below.

Figure 1: Rural Innovation System Performance Review Framework



² Innovation and Science Australia. (2016). *Performance Review of the Australian Innovation Science and Research System*. <https://industry.gov.au/Innovation-and-Science-Australia/Documents/ISA-system-review/Performance-Review-of-the-Australian-Innovation-Science-and-Research-System-ISA.pdf>

³ This Review does not adopt the "knowledge discovery-knowledge translation-knowledge application" approach in the National Review. Rather, it adopts a "logic framework" that connects objectives with outcomes, as illustrated in Figure 1.

The framework representation is not sequential. Public policy, interventions and initiatives often commence with announcement of “inputs”, such as capped “funding programs” designed to *assist and support* submission-based initiatives and proposals. Across the Commonwealth and States there are several hundred of these “funding programs” that relate to rural industries.

The focus on funding makes assessing performance against system objectives and expected outcomes particularly challenging – relying in many cases on *ex post* rationalisations of what public policy *might* have been intending to achieve. Although there are some objectives that relate to system outcomes, they are multi-faceted and differ across institutions and organisations, and time.

The Report emphasises that innovation system performance is impacted by the functioning of, and interaction with, a number of other national socio-economic systems and upwards of 100 separate research and development institutions and organisations that underpin the system and make their own distinctive contributions. With limited funding for research and development, these organisations both collaborate and compete.

Research institutions, some of which have been in operation for over 100 years, represent an incredibly valuable national asset for undertaking and delivering rural research outputs and innovation outcomes.

OVERALL PERFORMANCE AND IMPACT

Key findings in relation to performance and impact include:

GOALS, STRATEGIES, OBJECTIVES

- *There has been no shortage of government backed rural industry research, development and innovation strategies over the last six years. There have also been numerous useful reports and papers*

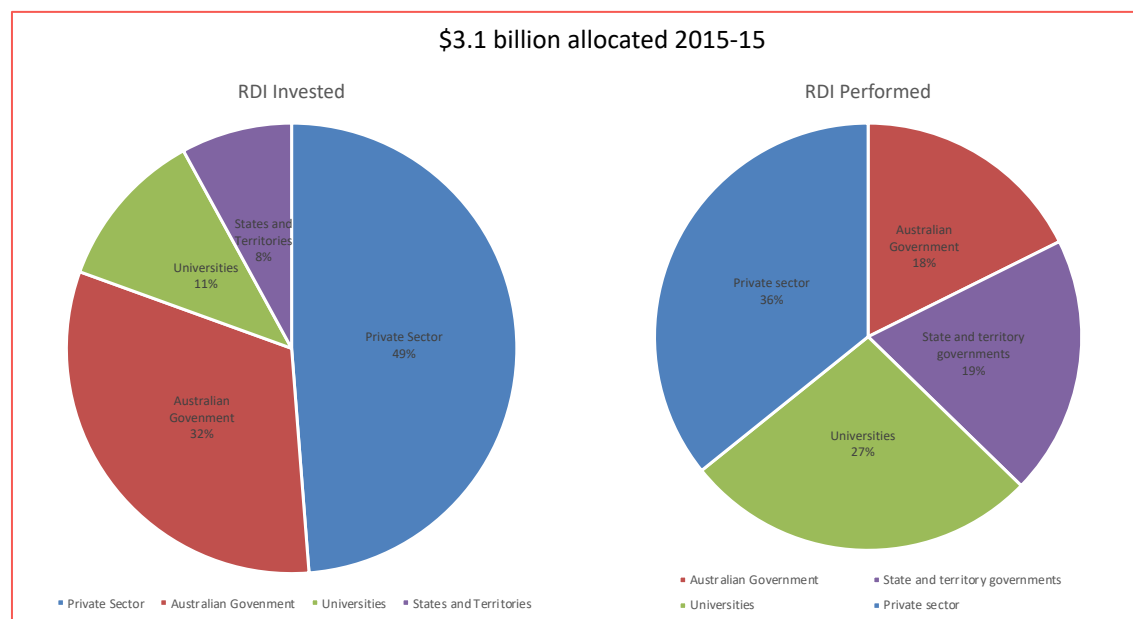
released by the Learned Academies, financial institutions, think tanks, and consultants.

- The proposed strategies exhibit very little cross referencing and a calibrated accumulation of perspectives about how to capture opportunities and address constraints. Very little mention is made of resources required to implement strategies, and the challenges in implementation. Few of the reports look at both short term (horizon 1) and long term (horizon 3) perspectives.
- The Review argues strongly that rural innovation involves a much broader set of imperatives than "farm based" innovation per se.

RESOURCE INPUTS AND ALLOCATION

- It is estimated that there was \$3.1 billion invested in relevant RDI in 2014-15. The sources of investment funds and the allocation among research providers, is outlined in Figure 2.

Figure 2: Research Development and Innovation Investment and Investment Performance 2014-15



Source: Millist, N., Chancellor, W., & Jackson, T. (2017). Rural research, development and extension investment in Australia. Research Report 17. 11

- The proportion of private sector research funded by the Research and Development Tax Incentive is not provided. The RDTI is only available to incorporated businesses; it is not available to unincorporated businesses. Many farm businesses are run through unincorporated family trusts (and perform relevant

research and innovation on an informal 'self-improvement' basis via learning-by-doing).

- *Business investment in RDI has been increasing over the last five years in both plant and animal production and related products, but there is a view that the private sector commitment should be greater. On the basis of international comparisons, businesses maintain a high level of investment in food products and beverages, but there is no significant investment in textiles or wood and wood products.*
- *Australia maintains a very strong investment in research facilities and equipment across the public and private sectors.*
- *Experts considered that public RDI investment should target high performing institutions with a view to creating stronger capability, and also have a focus on 'national challenges'. Experts were also concerned about low levels of collaboration and would like to see a greater commitment to interdisciplinary research projects and programs.*

RESEARCH AND INNOVATION PROCESSES

- *Research investment processes are multifaceted and vary across agencies and research fields, but there is scope for improvement. There is concern about what appears to be an excessive concern with compliance and control. There should be scope for achieving consistency across research organisations in legal and contracting documents and approaches.*



RESEARCH, DEVELOPMENT AND INNOVATION OUTPUTS

- *ARC/ERA information indicates that rural related research outputs from universities have grown strongly over the five years 2008-2015, and particularly since 2015.*
- *Patenting and commercialisation income has been quite modest, with the exception of biochemistry and cell biology.*
- *According to Clarivate Analytics InCites data, there has been strong trend growth in publications across all research fields since 1993, particularly by universities in the biological and environmental sciences.*

RESEARCH AND DEVELOPMENT OUTCOMES AND RESULTS

- *Australian universities and public research organisations (Commonwealth and State/Territory) have world class research capability in most research fields relating to agricultural sciences and in many fields relating to biological sciences, particularly genetics, plant biology, zoology and ecology.*
- *Researchers have recorded high levels of professional esteem in biochemistry and cell biology, plant biology, genetic and environmental science and management.*



- *According to Clarivate Analytics and InCites data there are some indications of a shift in research emphasis and impact from the agricultural sciences and towards the biological sciences*
- *Although commercialisation income is small, there have been several successful start-ups in the AgTech and GeneTech areas (including CropLogic and Nexgen Plants).*
- *The "extension" space has become highly contested: intermediaries that survive will produce unique value, adding value to a transaction or relationship that is not easily replicable.*

RESEARCH, DEVELOPMENT AND INNOVATION IMPACTS

- *Approaches to assessing research impact are not well developed. There is a concern with using "big numbers" to demonstrate impact; assumptions, data sources, and methodologies are not always transparent - or credible.*
- *There is limited information on commercialisation impacts, in terms of jobs created, new sales, new investments called forward, and exports.*
- *Case study approaches are important, and there is an argument for adopting consistent approaches across all components of the rural innovation system.*
- *There are very few "forensic stories" that provide in-depth insights into how innovation has actually happened - and the pivotal decisions that were made.*

CRITICAL INTERACTIONS WITH OTHER SOCIO-ECONOMIC SYSTEMS

- *The rural science research and innovation system interacts with a number of other national systems. The performance of these systems can have a major impact on rural innovation.*

performance. In particular, there is concern, reflected in the Expert Opinion Survey, that the Education and Training System has not kept pace with the evolution of the rural innovation system.

- Innovation ecosystems, precincts and clusters, and co-working spaces have become a major focus of policy attention and investment by State and Territory Governments, Universities and lead businesses.*
- The regional development system could be better aligned with the rural innovation system. However, regional universities have taken on a key role in supporting and enabling rural innovation.*
- The rural enterprise (entrepreneurial development) system is supporting the growth of a new entrepreneurial approach in rural businesses.*
- Experts indicated that more could be done to strengthen the natural environment and biodiversity management system.*
- Experts indicated that the performance of the Internal Trade and Foreign Investment System was generally favourable, as was the Financial System and the Regulation, Certification and Inspection System.*
- Experts indicated concern in relation to the Infrastructure system, particularly in relation to energy - but were supportive of the potential for farm businesses to diversify into locally generated energy systems.*
- Experts also had concerns about the performance of the agri-political/public policy system.*

SYSTEM STRENGTHS AND GAPS

The findings of the Review point to many strengths that provide a basis for addressing strategic policy and initiatives directed towards rural innovation performance. There are also some gaps. Both aspects are addressed below.

Australia's rural research and development capability is generally good and is recognised as such

PEOPLE

Australia has good people and capacity and do highly effective research and development work. This is mostly so in the areas of discovery and applied research but is weaker when it comes to interdisciplinary research and commercialisation.

This weakness reflects the international practice of defining research, and recognising/rewarding research performance, in disciplinary silos (fields of research), the lack of incentives for knowledge integration between university research facilities, an intense competition for funding and gaps in research translation capability.

RESEARCH AND INNOVATION INFRASTRUCTURE

There is a strong portfolio of globally recognised research organisations capable of delivering world class research outputs and innovation outcomes.

This capability ranges from the CSIRO (originally established with a rural remit), State Government research stations, and specialised rural institutes and centres in universities. Increasingly, research organisations are building engagement between the agricultural sciences and the humanities, arts, arts and social science research fields (HASS).

Statutory, quasi-independent and autonomous research centres and institutes provide an excellent vehicle for building research-industry-government engagement and innovation outcomes.

This transformational capability is not matched in other sectors of the economy.

This system is gaining strength through investments in innovation incubators, accelerators and co-working spaces. Whilst there is seed funding for early stage startup companies, there is a gap in availability of follow-on funding for prototyping and scale up – along the lines of the former Innovation Investment Funds.

CAPACITY TO DELIVER

The System has a strength in its capacity to deliver research, development, and innovation outcomes to the broader rural industry development system - but the two processes are different and should not be conflated when considering ways of making improvements.

The products of rural industries, and the capacity to produce them sustainably, are strategic national assets with social, cultural, economic and environmental importance and implications.

LINK TO THE ECONOMIC SYSTEM

The innovation system is different from the economic system, but innovation is a key driver of improvement and growth within the economic system. The goals of improvement in the economic system are currently focused on growth in productivity and international competitiveness.

The economic system provides the context for understanding the performance of the innovation system - the purpose of rural innovation, and what are we (as a nation) wanting to achieve.

The innovation system itself cannot be relied upon to do all of the heavy lifting to deliver improvement in the economic system.

Nonetheless, it is important to appreciate that the rural industries perform a more central function than delivering farmer productivity and profitability. These functions have strong links to socio cultural systems, particularly in regional and rural communities.

OPPORTUNITIES FOR PERFORMANCE IMPROVEMENT



On the basis of the findings and analysis of the Review, the opportunities to improve the performance of the Rural Innovation System are based upon the following key principles:

- *Rural innovation should be approached from a "Whole of Value Chain" perspective*
- *Broadening the understanding of activity from delivery of RD&E, to engaging with the intersecting and overlapping components of the economic, environmental and social systems, of which innovation is just one part and process.*
- *Broadening the discussion from an assessment of farm-production focussed efforts to coverage of the entire bioeconomy*
- *Developing a national industrial strategy for the bioeconomy, with a view to increasing local value creation and capture through innovation that supports upgrading of our participation in global value chains and global innovation networks.*
- *Building and maintaining a strong focus on achieving necessary scale in operations and efforts*

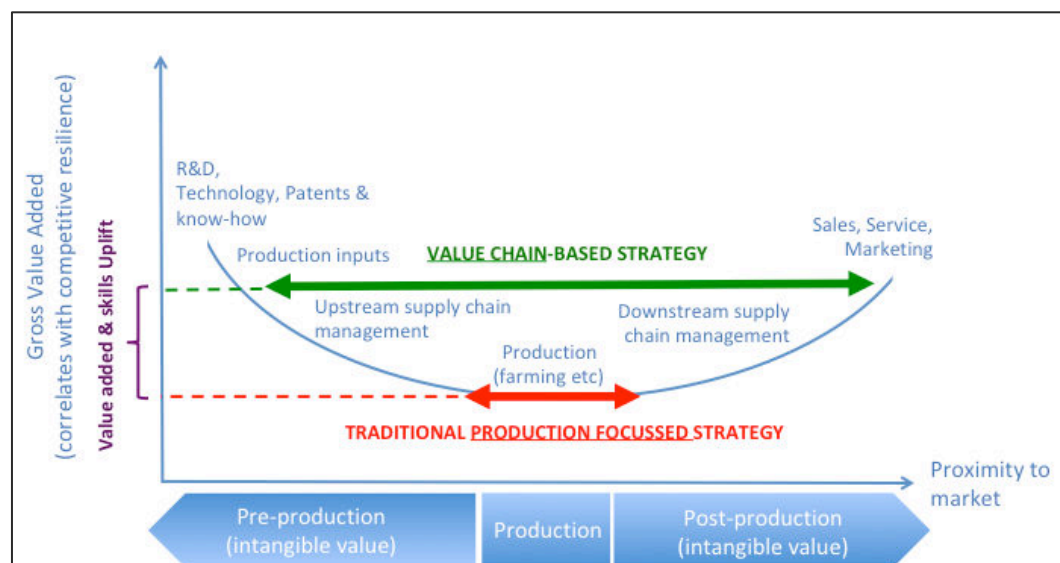
- *Re-establishing the agriculture-food-health-environment link across multiple policy domains.*
- *Build leadership and make a greater commitment towards "systems integration" across research and innovation domains, and the multiple government agencies, research institutions and representative organisations that populate the system.*

A number of these issues are addressed further below.

INTEGRATING WITH GLOBAL VALUE CHAINS (GVCS)

Figure 3 below is a version of the well-known 'smiling curve' relationship between position/span in value chains and the level of value added. It highlights the higher value-added associated with activities removed from production *per se*.

Figure 3: Production versus Value Chain Approaches to Innovation



Source: Based on Shih (1996), and taken from SDG-ED (2018)

Not included in the depiction of the value chain in Figure 3 is the "natural capital" base - land, soils, forests, water, and oceans. Many stakeholders argued during the Consultations that investment in the preservation, restoration, and repair of natural capital in the light of human intervention and climate change can, and will, deliver very substantial returns to the economy over the longer term.

At the other end of the value chain spectrum are investments in platforms around food service and food delivery which are generating substantial returns to investors as consumers change

consumption preferences and adapt to changes in urban and housing design.

Unless attention is given to the whole value chain, and how global value chains are configured and are evolving, innovation strategies risk being too focused on the lower value-added production segments of value chains whilst neglecting the important higher value-added (but sometimes but harder to measure segments).

Opportunities for value capture are much greater at either end of the chain, including through research and technology for improved pre-production inputs (including soils and water and responses to climate change), and sales, service and marketing in post-production components. This is an important strategic insight for Australia's rural innovation system.

Engagement with Global Innovation Networks provides an opportunity to amplify and strengthen locally-based R&D efforts. Capturing and 'owning' a supply chain (including a global supply chain) is an effective strategy being deployed by many food and fibre businesses. The approach of a string of commercial intermediaries "clipping the ticket" from production through to consumption is a losing scenario.



As the global economy enters a turbulent era caused by nationalistic protectionism in trade, the Global Value Chains that constitute much of the world economy will start to re-configure. Australia's rural industries will be spectacularly ill-prepared for this new era if they have failed to reflect these politicised business and trade realities in their analysis of current circumstancesand the associated opportunities and risks.

Given the inter-dependencies between innovation and Global Value Chains highlighted in this Review, combined with significant changes to how Global Value Chains are configured, now is the right time to link our understanding of the innovation system with the global production and trade system.

This will best be achieved by an Industrial Strategy for the rural industries rather than a stand-alone innovation strategy.

RURAL INNOVATION AS A COMPONENT OF A BROADER RURAL INDUSTRY STRATEGY

A headline message from this Review is that the rural industries in Australia stand to benefit from "re-booting" the mind-sets via which we think about innovation, structure and manage innovation and also where we look for evidence of success in innovation. Part of this re-booting process will involve moving away from treating "innovation" as a distinct stand-alone concept and towards treating innovation as an integral part of a broader *Industrial Strategy* for the rural industries.

An Industrial Strategy braids together a range of complementary concerns in a manner that reflects both business and political realities. For too long, public policy in Australia has sought to subsume Industrial Strategy motivations under an Industrial Policy stance – the latter emphasising market liberalisation via judicious

regulation over developing and promulgating a vision for where we want to be industrially.



Whilst innovation plays a key role in framing and delivering these visions for industry, it only works effectively if it is an integral part of a broader strategic vision. Otherwise, we risk repeated cycles of stand-alone innovation policy, and strategies, that repeat past failures. *Innovation alone is not a panacea – it cannot be, and should not be, treated as a way of solving a myriad of complex strategic, political and economic challenges.*

RE-THINKING AND RE-FRAMING INDUSTRY BOUNDARIES

Another part of the re-booting effort will involve re-framing how we think about industry boundaries. Rather than thinking about discrete industries falling into the “primary” and “secondary” sectors, and the outdated concept of pre- and post- “farm gate”, this Review of the rural innovation *system* lays out the advantages of shifting to a value-adding *system* perspective.

That is to say, focusing on how innovation shapes and enables these inter-connected strands of value-adding that cross industry boundaries – and also national boundaries – *en route* to final demand both nationally and internationally.

Currently, Australia's rural innovation system is dominated by a production-focussed R&D effort and a separation of national Ministerial responsibilities between production (Agriculture) and processing (Industry). Whilst upgrading engagement and

participation within global value chains is a recognised and well-researched approach to improving value captured by a domestic economy, the actual delivery of this pragmatic concept requires seamless policy approaches and responses. Various forms of innovation are useful to achieve that upgrade.

In terms of investment in food processing, Australia performs well in international comparisons but lags a long way behind the US and China. Australia has virtually withdrawn from investment in fibre manufacture (wool, cotton, forest products).



On the bright side, aquaculture is exhibiting strong growth and is an area of immense global opportunity - but there are environmental health and biosecurity challenges to address (the meeting of which will contribute to competitive differentiation over future years).

Conversely, the ability to evaluate and measure asset values and competitiveness drivers is easier where it relates to the production sector, and more difficult at either end of the value chain. This will continue to represent a challenge for impact assessment and performance evaluation. If performance metrics focus only on what is easy to measure in this strategic context our long-term competitiveness will face amplified risks.

Systematic engagement with global value chains offer Australian business the opportunity to increase value capture through spill-in benefits of new knowledge and capacity.

THE GROWING SIGNIFICANCE OF THE “BIOLOGICALLY DERIVED” ECONOMY

Data assembled for the Report shows that in one way or another, the outputs of rural industries and production are currently associated with almost half (48 per cent) of Australia’s overall contribution to combined final consumption and fixed capital formation in other countries. This is mainly via final consumption expenditure by households, for which the direct ‘biologically derived’ contribution is 57 per cent.

In contrast, the Australian biologically derived contribution to gross fixed capital formation in the rest of the world is far lower at around seven per cent (93 per cent non-biologically derived). In terms of the intermediate inputs that flow-on to production overseas, Australia’s biologically derived contribution is also lower, at 11 per cent.

Crucially however, the dominance of intermediate outputs over final consumption and fixed capital formation restricts the overall role of biologically derived economic activity to around 12 per cent of the economy. These ‘biologically derived’ outputs can be categorised as food, fibre and economic ‘feedstock’, and the overall system described as the ‘bio-economy’.

As stressed throughout this Report, modern technologies – especially in regard to the ‘circular economy’ - are opening up the potential for an increased ‘biologically-derived’ contribution to economic activity. There are opportunities for the rural sector to pick up new sources of value creation.

Given the influence of modern technologies, it no longer makes sense to conceptualise the rural economy simply as ‘primary’ production. The strands of biologically-derived activity that originate in primary production spread throughout modern economies – and have the potential to increase in prominence over future decades.

Analysis of global value chains shows that the production component has the least potential for value creation and capture within the wider system.

SYSTEM LEADERSHIP

The rural innovation system is complex – and complicated. To perform effectively “leaders” and “integrators” are required to ensure that components are consolidating and complementary and not “failing” due to lack of synchronisation and misplaced competition for resources, skills and talent.

Leadership is required at the political level, across Ministerial Portfolios and across States and Territories.

Leadership is not a matter of establishing another Council or Committee – there are plenty of those.

Leadership is a matter of focusing leadership around a vision and overarching strategy the agriculture-food-health-environment. Strategy is not just about exploiting opportunities, it is also a matter of facing the risks if we do not.

The Department of Industry and Innovation has experimented with industry “Advocates” over the years to build connections and scale in accessing global markets. Integrators would be free agents and not tied to any particular organisational allegiance or seeking commercial gain from fee for service activity.

COMPLEMENTARY IMPROVEMENTS IN OTHER SOCIO-ECONOMIC SYSTEMS

Improvement is required in, and will have implications for, several other systems that contribute to economic system performance. These include: the education and training system, innovation ecosystems, international trade, investment and market access, the natural environmental and biodiversity system, the financial system, the transport, storage and logistics system, the regulatory, certification and inspection system, and the agri-political system itself.

ADDRESSING GAPS AND OPPORTUNITIES: TOWARDS A NEW VISION



The “gap” most often discussed during Consultations, and reflected in the Expert Opinion Survey, is the absence of an *overarching vision* for Australia’s Rural Research, Development and Innovation System.

The Board of Innovation and Science Australia adopted a vision in the *Australia 2030 Strategy: Prosperity Through Innovation* Strategy (Innovation and Science Australia, 2017) in the following terms.

Australia 2030: Prosperity Through Innovation

Innovation Vision

Australia will be counted within the top tier of innovation nations. We will take pride in our global reputation for excellence in science, research and commercialisation.

Our world-leading strengths in innovation, science and research will benefit all Australians through:

- *strong economic growth*
- *competitive industries and companies, and collaborative education and knowledge institutions*
- *plentiful jobs that are meaningful and productive*
- *a fair and inclusive society with a high quality of life.*

This Report provides a foundation for laying out a new vision for the future of *rural* innovation in Australia. This vision would be

developed on the basis of the opportunities identified above and extending the scope of our thinking in the following key dimensions:

Conceptually – shifting towards a more pragmatic ‘business-centred’ approach to rural innovation that positions it as part of a broader Industrial Strategy for biologically-derived economic activity in Australia. This perspective also recognises that our rural innovation system must move away from a narrow ‘production’ focus and do more to identify and exploit opportunities in the activities that are both ‘upstream’ and ‘downstream’ to rural production.

Examples of upstream activities are research, intellectual property and competitive strategy. Examples of downstream activities are integrated supply chain management and global brand positioning. In other words, by being truly ‘systemic’ in our approach to rural innovation – strategically spanning more segments of value chains in our innovation foci.

Accurately – drawing attention to the pervasive impact of rural industries in providing the source of a myriad of biologically-derived production inputs that spread throughout modern economies – and that link these economies together via global value chains based on biologically-derived inputs. It is no longer good enough to think about the rural economy only as part of ‘primary production’.

Ambitiously – providing a new collective sense of purpose around which a wide range of actors in the rural innovation system can better coordinate their distinctive contributions: exploiting the emerging opportunities associated with the transition to less environmentally damaging ‘circular economies’. This is a transition in which biologically derived economic activity is likely to increase dramatically in prominence. *Modernity is biological.*

As such, this Review aims to establish the key guiding principles that we can use as we move forward in re-invigorating the rural economy and better exploiting our extensive and valuable natural capital.

RECOMMENDATIONS

This Review makes the following recommendations for achieving performance improvements:

Vision and Strategy

1. *Articulate and promote an integrated Industrial Strategy for the Australian rural economy – a strategy in which innovation per se*

is closely entwined with the other systems and commercial competencies that determine success and failure in contributing to the global economy. The Strategy should embrace the whole value chain as well as the farm sector

Global Value Chains

2. *The Industrial Strategy to address the potential to increase participation in the system of Global Value Chains (GVCs) - on the basis that innovation and broader competitive positioning can be enhanced by:*
 - a. *Developing and widely disseminating statistical data on the evolving nature and extent of Australia's participation in GVCs.*
 - b. *Providing commentary that highlights the implications for future competitive strategy throughout the sector.*
 - c. *Highlighting how developments in digital and genetic technologies are combining to create a revolution in agricultural productivity and value chain development.*

The Biologically derived economy



3. *Commission a robust economic modelling-based assessment of the full direct and indirect (embodied) contribution of biologically-derived economic activity to the Australian economy and to deliver a base-line assessment against which future progress could be calibrated.*

Science and Research Investment

4. *Develop a national Research, Development and Innovation (RD&I) investment Strategy that encourages collaboration and co-location across research organisations and in conjunction with industry to provide the necessary critical mass and avoid potential duplication of effort. This Strategy should address -*
 - a. *A balance in support for RD&I investments in new knowledge creation, translation, and competitive capabilities such as market development and global market positioning.*
 - b. *High priority National Challenges*
 - c. *Innovation related activities that help potential adopters of new technologies mitigate the risks encountered when investing in new concepts and methods.*
 - d. *Investment in multidisciplinary research that meets end user needs.*
 - e. *Collaboration among researchers with complementary expertise and data sets across fields of research*
 - f. *Cross-sectoral capability (similar to LWA) to address environment and biodiversity issues across the rural innovation system*



5. *The Rural R&D for Profit Program be extended guided by a clear strategy and longer term funding commitment.*

Monitoring and evaluation

6. *Develop a Monitoring and Evaluation Framework for RD&I Investment that delivers and maintains:*
- a. Nationally relevant data sets*
 - b. Performance measures that give emphasis to ensuring the long term sustainability of industry and the environment*

FURTHER INFORMATION



For further information about the project, contact:

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ATTACHMENT: APPROACH TO THE REVIEW



The Review has been undertaken on the basis of:

- *An extended process of Consultations, involving 56 meetings with 100 participants from government, industry and business, and the research sectors over the period November 2017-February 2018.*
- *A research project on Rural Research, Innovation and Investment Strategy that addresses the role of R&D in driving innovation and industry strategy.*
- *A research project on Global Value Chains, aimed at achieving a better understanding of the ways in which innovation outcomes are reflected in the nature and extent of Australia's participation in Global Value Chains (GVCs).*
- *An Expert Opinion Survey to quantify the strength of opinion on a range of views and opinions put forward during consultations regarding system performance. These were presented as a set of hypotheses that respondents could indicate agreement or*

disagreement on a five-point scale. A total of 188 responses were received, representing a response rate of 30 per cent.

- *A research performance and impact analysis using research publication and citation data from the Clarivate Analytics' InCites platform (using Web of Science data).*
- *Familiarisation with the extensive body of knowledge contained in previous government, or government commissioned policy statements, reviews and evaluations, industry presentations, contributions from the Learned Academies, unsolicited contributions from policy think tanks and global consulting firms, and scholarly material published in books, journals and papers.*

In combination, this is a diverse and rich evidence-base that has been able to inform both an assessment of the current situation and also a vision and strategy for re-booting and re-invigorating rural innovation in Australia.

Citation

Innovation and Science Australia. (2017). *Australia 2030: Prosperity Through Innovation - Report of the Analysis of Stakeholder Consultation* Retrieved from <https://industry.gov.au/Innovation-and-Science-Australia/publications/Documents/Australia-2030-Stakeholder-Consultation-Report.pdf>