New thinking about rural innovation in Australia
The future of Australia’s rural industries is bright and change is happening quickly.

Innovation is the key to long term productivity growth and future prosperity, and innovation is how we transform research into impact. We know our research efforts could be better integrated with the needs of industry and the community. Taking a systems approach, aligning around ambitious goals and implementing appropriate governance arrangements will support more efficient, effective and impactful responses.

It’s time for new ways of thinking about the role and opportunity of our agricultural, fisheries and forestry industries, and what that will mean for research, development and innovation.

Through the Council of Rural Research and Development Corporations, the RDCs have been developing a vision for the future of Australia’s rural innovation system.

Four challenges and opportunities are facing rural industries as we progress to 2050.

### Community and consumers are king

The future of Australia’s production industries will be driven by the needs and preferences of consumers and the community. Consumer responses within markets determine what products and services are successful. The community’s social and regulatory force determines what production is allowable. Meeting the needs and expectations of consumers and communities will require greater connectivity and flow of information up and down food and fibre value chains.

### More than food and fibre

Opportunities will arise to build on our strengths and grow new sources of value. Industries need new ways to produce and compete in the face of challenges from international competitors and synthetic foods and fibres. Products will embody new technologies for health and wellbeing, such as omega 3 long-chain acids in cereals. Wastes will be converted for alternative energy sources. Production skills and resources can be applied to meet new markets in environmental services. And our know-how and ingenuity can be packaged into tools and services to be exported and sold around the world.

### Beyond the farm gate

Agricultural output was $63 billion in 2016-17, and the NFF has set a target of growing this to $100 billion by 2030. This goal is important and represents a significant challenge. However, farm gate value significantly under-estimates the overall contribution of the agri food and fibre system. Our opportunity is to innovate and build on the strength of the production sector to create value up and down value chains, delivering benefits for producers, communities and the broader Australian economy.

### Geography is not a defining feature

Australian industry and production sits within a global context where ideas, talent, technologies, products and services flow in new ways, far beyond the traditional farm-gate boundary. New production sites, including intensive aquaculture and vertical farming, are being located within urban areas. Most downstream manufacturing and post-farm gate value adding occurs somewhere that is not rural, and most consumers and communities are urban. Food and fibre value chains extend into the very heart of cities here and overseas.
A globally-connected, high-performing knowledge and innovation ecosystem underpinning a thriving Australian agrisystem

The agri food and fibre system, or agrisystem, is a description of how we use natural resources and biological processes to generate value through food, fibre and related products and services. A system level perspective reveals new opportunities and a new vision for our production industries as sources of future prosperity, with benefits for the economy, community and environment.

The agrisystem is supported by a knowledge and innovation ecosystem, built upon our world-class research and development capacity. The knowledge and innovation ecosystem enhances and improves the agrisystem, providing knowledge and capacity to develop, deliver and adopt new products, technologies, practices and services. It is how we generate impact from R&D for industry and the community.

Empowering the knowledge and innovation ecosystem to be globally-connected, high-performing, dynamic and effective will be critical to unlock the potential of the agrisystem.

<table>
<thead>
<tr>
<th>Australia’s agrisystem</th>
<th>K&amp;I ecosystem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why does it exist?</td>
<td>To position Australia’s agrisystem for growth, sustainability, prosperity and international competitiveness.</td>
</tr>
<tr>
<td>What does it do?</td>
<td>Discover and apply knowledge to create value in response to the requirements of the agrisystem, and the needs of society, markets and consumers.</td>
</tr>
<tr>
<td>Why is it unique?</td>
<td>Only the Australian agrisystem applies our know-how and tenacity, shaped by our unique natural and operating environment, to create sustainable wealth and community wellbeing for Australians through food, fibre and related production and service value chains.</td>
</tr>
<tr>
<td>What’s our ambition?</td>
<td>Australia is a pivotal global player in food and fibre value chains.</td>
</tr>
</tbody>
</table>

1. **Community and environmental wellbeing**
   Australia’s national, regional and rural communities are flourishing because of a strong and sustainable agrisystem.

2. **Destination of choice for agrisystem investment**
   Australia’s agrisystem is an investment destination of choice, enabling production capacity optimisation and enhanced value creation.

3. **Growing sustainable wealth**
   Australia’s thriving and profitable agrisystem is an essential component to sustaining the national and regional economies.

1. **The agrisystem adapts and is resilient**
   Australia has an agrisystem that responds with flexibility and agility in the face of emerging challenges, new technologies and changing societal and market expectations.

2. **A world-class R&D industry supporting a thriving agrisystem**
   Australia has an R&D industry supporting talent and research, development and innovation capacity and foresight to support advancement of the national and global agrisystems.

3. **Information and knowledge for value creation**
   Australia’s agrisystem has the information, knowledge and know-how needed to optimise its production processes, now and into the future.

What do we need to achieve this?

- Research efforts aligned with the needs of industry, the community and the environment
  Frameworks that increase the engagement of domestic and global research capacity with industry and community stakeholders

- Confidence, capacity and capability for success
  Leadership capacity, the ability to make evidence-based decisions and availability of skilled people to support sustainability and prosperity.

- Enhanced profitability of production
  Productivity and efficiency is enhanced to support adaptiveness, resilience and international competitiveness.

- Enhanced social and environmental sustainability
  Industry maintains the trust and confidence of the community in the long-term Industry are effective custodians of natural resources.
So what?

Australia’s unique circumstances drive the performance of today’s rural industries. Our capacity to create and apply new technologies has enabled Australia to remain globally competitive despite resource constraints, seasonal variability and market volatility. With exportable food and fibre surpluses Australia is an important contributor to meeting global demand and receives more than $44 billion of export revenue.

The agrisystem demonstrates how critical agriculture, fisheries and forestry production industries are for Australia. The agrisystem is the source of basic food and fibre needs. It is how we manage and take care of more than 50 percent of the Australian land mass and vast areas of ocean without government subsidies or payments. It provides millions of jobs for rural, regional and urban communities and is a source of national identity and pride. The agrisystem is worth as much as $800 billion a year to our economy. A thriving agrisystem is the pathway to a flourishing production sector.

The agrisystem reveals new opportunities to build on our strengths, to create and grow sources of value by identifying synergies and partnerships, connecting individual components to increase scale, and aligning interests along value chains towards common goals.

Critical to unlocking the potential of the agrisystem will be a high performing, globally connected, dynamic and effective knowledge and innovation ecosystem. The ecosystem provides agility and resilience through skills and capacities to discover and apply knowledge, and the know-how to innovate and develop new products and services. This enables the agrisystem to adapt and adjust as market, environment, social and production conditions change.

Research and development provides the foundation for the knowledge and innovation ecosystem. Federal and State governments either directly invest, influence or facilitate more than $2 billion a year of research, development, technology transfer and adoption activities for rural industries, and the private sector contributes $1 billion more. R&D must be integrated within production and value chains to deliver impact and enable the agrisystem to meet the needs and expectations of the community and consumers. A framework should be established that drives trust and collaboration between industry and research across the agrisystem, and to incentivise and facilitate greater private investment in R&D.

Establishing the right conditions will help us create the future. We need to have purpose and understand what we strive for, develop and focus our strategy and identify the skills we need to be successful. Governance arrangements must support strong alignment between organisational mandates and the interests of investors and other stakeholders. The right settings will support an effective system culture to emerge.

Recommendations

Develop and implement a national framework to drive a globally-connected, high-performing and effective knowledge and innovation ecosystem

A new, outcomes-driven approach is needed. Australia’s current arrangements for rural research, development and innovation have been successful, but an uplift of performance could be achieved by taking and implementing a systems approach. The framework approach should reflect the diversity of participants and connections between them, align efforts to national goals and embed effective governance arrangements. It should seek to find and optimise the synergies between the public and private sectors.

Develop and implement a national, integrated, whole-of-government strategy for an enhanced agrisystem.

The agrisystem crosses policy, portfolio and jurisdictional boundaries. No mechanism exists to bring the various influences together in a consistent and coherent way. A national, integrated approach is needed to encompass policy and investment settings across different levels of government and provide the necessary focus and rigour to identify and drive ambitious strategic targets. Development of the strategy should incorporate an economic analysis of the agrisystem, and the influence and reach of Australian industry through global value chains.

For more information:

Tim Lester
Executive Officer, Council of Rural RDCs

tim.lester@crrdc.com.au
0437 524 933
www.ruralrdc.com.au