

Report: Roadmap to reshaping Australia's food systems

June 21 2023, by Erin McClure



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Australia's food systems feed an estimated 75 million people across domestic and export markets with safe, high-quality foods. Our food industries are major drivers of economic growth and social prosperity and provide employment for many Australians.

These food systems face mounting pressures from a [growing population](#),

climate change, supply disruptions, a changing workforce and shifting consumer trends. Can we reshape them to better support healthy people and a healthy planet, now and into the future?

However, in the face of mounting pressures posed by growing populations, climate change, supply disruptions, a changing workforce and shifting consumer trends, we need to consider how we can reshape Australia's food systems to better support healthy people and a healthy planet, both now and into the future. To do so, we need to think about our food systems differently.

Our new [Reshaping Australian Food Systems roadmap](#) outlines a series of opportunities that could inform transition pathways towards a more sustainable, productive and resilient future. It highlights research priorities and actions that could support these goals.

Australia can proactively rise to the challenge and create better food systems for the future, while taking on a leadership role in the international arena.

Thinking holistically

Food systems are highly complex, impacting health, environment, climate, and energy domains, among others. They contribute to [greenhouse gas emissions](#), intensive production systems, land use change and deforestation, biodiversity loss, poor resource management, and pollution.

At the same time these food systems are vulnerable to these changes themselves. Climate-induced risks reduce the ability of food systems to grow and produce, threatening food security and livelihoods. Despite this complex relationship, food systems have the potential to be a major lever to address interrelated challenges of environmental health, [climate](#)

[change](#) and human well-being.

We need to look at our food systems in their entirety, acknowledging their interactions with related and adjacent systems. This also allows for new interactions, synergies and trade-offs to be identified and navigated to ensure change processes are safe, equitable and just.

Areas for action

Our Roadmap identified five focus areas that could serve as anchoring points for transition pathways. These are:

1. Enabling access to healthy and sustainable diets
2. Minimizing waste and improving circularity
3. Facilitating Australia's transition to net zero emissions
4. Aligning resilience with socioeconomic and environmental sustainability
5. Improving value and productivity

Investing across these areas will enable Australia to make strides across environmental, economic and public health pillars.

The role of science and technology

Driving the transformation of food systems requires technological innovations across the entire food value chain, ensuring transparency and building societal trust for emerging technologies.

Redirecting the food system transformation towards a more sustainable and productive trajectory will require investment across specific domains and technologies. It also requires further systemic and cross-sector initiatives that deliver numerous co-benefits. Science can inform

these solutions by combining systems thinking with deep disciplinary knowledge to manage possible trade-offs while pursuing multiple economic, social and environmental objectives.

Digitalization features heavily across all focus areas. Data collection supports mapping, modeling and forecasting efforts, process optimization and resource management. It enables traceability and auditing, helping to verify point of origin and product attributes and allowing producers to capture greater value in domestic and export markets and protect brand reputation.

Efforts to improve traceability and develop integrated data solutions are well underway. But the consistent capture and consolidation of data is required right across the supply chain to accurately identify and measure challenges and inform strategic decisions moving forward.

Inclusive solutions

Our Roadmap highlights the need for inclusive solutions. Namely place-based solutions that leverage community assets, account for cultural diversity and socio-economic disparities. These need to be tailored to local goals and objectives, and equally value the unique and diverse knowledge bases of community groups.

In particular, there are significant opportunities to embed Aboriginal and Torres Strait Islander knowledges and grow Indigenous participation within Australia's food systems by creating avenues for Indigenous partnership and leadership. This Roadmap acknowledges the holistic nature of Indigenous knowledge systems, and the deep understanding of plant, animal and land management they contain.

Inclusive solutions are also apparent on a global level. Considerable international efforts to achieve healthier, more sustainable and more

resilient food systems are underway. The 2021 United Nations Food Systems Summit (UNFSS) saw all UN member states and constituencies partake in discussions, share solutions and set actionable sustainability commitments. In these settings, food systems are being increasingly viewed as a means to concurrently improve the health of humans, environments, economies, and cultures, placing them at the center of the international sustainability agenda.

Where to next?

Delivering the right science, technology and solutions requires a wide range of enabling actions. These need to encompass investment in infrastructure, policy levers, business investment, and education and community engagement.

Change is possible across all sectors of Australia's food system, but significant collaboration and coordination will be necessary to achieve it. Our Roadmap highlights the need for collective engagement and actions underpinned by systems-based thinking.

We recently partnered with The University of Queensland to establish Food System Horizons. This joint initiative seeks to convene a range of stakeholders with diverse perspectives to advance discussion and build capacity in Australia to navigate, manage and direct change processes.

Together we can shift Australia's [food systems](#) to be more sustainable, productive and resilient.

Provided by CSIRO

Citation: Report: Roadmap to reshaping Australia's food systems (2023, June 21) retrieved 3 May 2024 from <https://phys.org/news/2023-06-roadmap-reshaping-australia-food.html>

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