

IMPACT STATEMENT Australia and Food Security in a changing world

PMSEIC

A report to the Prime Minister's Science, Engineering and Innovation Council – 2010

This report identifies the key evidence and broad actions required to allow Australia to address a long-term challenge at the heart of our country and our lives:

With the same amount of land, more climate variability and severe resource constraints, we must produce more food, of higher nutritional quality, delivered to more people. And we must do this while protecting the environment that supports food production and adjusting and transforming to new practices in production and consumption so that our approach is both sustainable and resilient.

We are all connected to the land through food, and thus to the natural environment.

- Regional Australia currently produces 93% of our nation's daily food supply while exporting enough food to feed nearly 40 million others.
- More than 70% of Australia's water use is consumed in irrigation for food production.
- Agriculture contributes about 16% to Australia's national greenhouse gas emissions, with another 9% from net deforestation also largely associated with food production.
- Healthier food choices can reduce the prevalence of obesity, and thus the incidence of related disease, such as type 2 diabetes and cardiovascular deaths.



Mega-trends pose challenges to the sustainability of Australia's food sector.

- Urban sprawl is removing prime arable land from food production.
- Fertilisers are becoming scarcer, more expensive with less reliable supplies, and are often associated with environmental damage.
- Climate change is predicted to reduce Australian food production by over 15%, and alter the rainfall, pest, and plant and animal disease patterns across the country.
- Most food production is highly sensitive to climate variability and extremes, which are expected to increase. Drought can reduce Australian wheat production by 60%.
- Despite having the world's third largest Fishing Zone, Australian wild fish catches have declined and are not sustainable. Australia is now a net importer of fish.
- After decades of growth, productivity in the agricultural sector is declining, which is largely attributable to reductions by up to 40% in research and development.
- Australia is exporting less and importing more by value.
- Australia's rural workforce is ageing, and over 50% of agricultural scientists are likely to retire in the next few years. Demand for appropriately trained young people exceeds supply.





As Australia's total food exports (by value) decline, and imports increase, we can expect years in the future when net exports drop to zero or below and the nation becomes a net importer of food. About 95% of food imports are substantially and elaborately transformed products.

Australia has strengths, and must sustain them while building new opportunities.

- Over the past 30 years, Australian farms have had higher multi-factor productivity than any other industry except telecommunications and IT.
- The food processing sector is considered Australia's largest value-added manufacturing industry.
- Australia has agricultural R&D capability that is world class, and complementary research strengths in climate change, human health and nutrition.
- Australia has experience and success in dryland farming on nutrient poor soils.
- Food waste (up to 50% in some areas from farm to plate) can be reduced.
- Australia could gain more value from investments made in research infrastructure by investing in national and international collaboration across sectors and disciplines.
- Productivity gains from investment in agricultural R&D are demonstrably high, and are the only sustainable option of the three ways used to generate the revolution in food productivity in the 1960s and 1970s.

This report to the Prime Minister's Council on Science, Engineering and Innovation suggests that by (i) embracing an integrated, cross-portfolio national approach to food, (ii) reinvesting in research and development, (iii) building human capacity to meet the challenges of today and tomorrow and (iv) connecting the public consciousness to the importance of food, we can achieve the following goals:

Goals:

- Deliver science and data collection programs to inform policy evolution
- Secure Australian food supply and reduce wastage
- Streamline regulatory procedures in order to facilitate innovation
- Invigorate and harness national and international research and development
- Develop and transform low-input farming systems that are adaptable and resilient
- Become an informed population that respects food and makes healthy food choices
- Assist young Australian's to obtain the skills to transform the food industry
- Contribute to the food security of our region and export our expertise to the world





For More Information Contact: Office of the Chief Scientist Level 2, 15 Moore Street, Canberra ACT 2601

GPO Box 9839, Canberra ACT 2601

P +61 2 6276 1727 F +61 2 6213 6558 E chief.scientist@chiefscientist.gov.au W www.chiefscientist.gov.au