

Australian National Outlook 2015 – Executive Summary

Economic activity, resource use, environmental
performance and living standards, 1970–2050

October 2015



Key messages and findings

Australia has the capacity to pursue economic growth, sustainable resource use and reduced environmental pressures simultaneously. Policies and institutions will be essential to realise Australia's full potential and manage the associated trade-offs and risks. Australia can benefit from the positive outlook for our living standards and natural assets, while contributing to a secure and prosperous world.

Australia's choices will shape our prosperity. Agility, innovation and productivity will be vital to make the most of a positive – but uncertain – global economic outlook.

Global demand for our exports is projected to treble through to 2050 as global per capita income also trebles. While we can be confident in some high level trends, such as long term growth of world energy and food demand, the risks and opportunities facing specific sectors of our economy are less certain. Demand for specific materials and energy exports will vary with international developments. Flexibility in the deployment of its natural and institutional resources will be needed for Australia to prosper across a diverse range of global scenarios.

Agricultural export prices are likely to trend upwards over coming decades reversing a long historical decline. Our analysis shows that Australia's total output of food and fibre can increase – even in scenarios with significant shifts of land out of agriculture – if agricultural productivity growth is restored. However, we have not fully explored the complex distributional implications of these scenarios, and we do not yet fully understand the potential cascading impacts of future climate change and extreme events on farms, sectors, and regions. The scale and multiple complexities of these potential changes could raise unprecedented challenges for landowners and regional communities.



Sustainability and economic growth can be partners not competitors.

The future of our nation, industries and communities will depend on how we position for change, and adapt as the world around us evolves. In most cases, innovation and improving productivity are no regret moves that will help to create a better future.

Sustainability and economic growth can be partners not competitors.

Our research suggests that Australia can achieve economic growth and improved living standards while also protecting or even improving our natural assets. However this will not happen automatically. Australia's economy is projected to treble by 2050, while national income per person increases by 12 to 15% above inflation per decade (assuming no major shocks) – with different choices about working hours accounting for two-thirds of the range of projected outcomes.

Energy and transport can remain affordable, with energy efficiency offsetting higher prices for electricity and fuel (including in low carbon scenarios), and better management of peak demand and improved electricity network operations and investment discipline could deliver further benefits. By 2050, electric vehicles and biofuels could reverse our mounting transport

fuel imports, as well as reducing costs, improving air quality, and reducing greenhouse gas emissions.

Business, individuals, and government all need to be involved in lifting productivity and enhancing our shared social, economic and natural capital. Efficient and responsive institutional settings can turn challenges into opportunities, and have a vital role in managing trade-offs and promoting longer term sustainability and prosperity.

Decisions we make as a society matter – and will shape Australia's future more than decisions we make as businesses or individuals.

Policies and institutions are central to unlocking potential benefits and managing trade-offs and risks. Collective decisions account for 50-90% of the differences in resource use and natural assets across the scenarios in the National Outlook, resulting in synergies in some cases and trade-offs in others. Institutional settings are crucial to support the deployment of existing and new technologies that match our economic and environmental aspirations in energy, water, transport, agriculture and other industries.

Managing the water-energy-food nexus will produce challenges and opportunities for rural land use and communities. We can transform and enrich our economy and regional communities by meeting national and global food, fibre, energy, carbon sequestration, and conservation needs through new land sector markets, if we manage these transitions well.

While water use is projected to double by 2050, this growth can be met while enhancing urban water security and avoiding increased environmental pressures through increased water recycling, desalination and integrated

catchment management. We find water demand and supply are shaped by complex interactions between food production, energy-intensive industries, energy and water efficiency, and new carbon plantings – all against a background of regional constraints on rain-fed water resources and a growing population and economy.

We can reduce our greenhouse gas emissions significantly through energy efficiency, carbon capture and storage, renewable energy, and land-sector sequestration. In the case of concerted global action on climate change, this could see Australia reduce its per capita

emissions to below the global average by 2050, down from five times the average in 1990, while maintaining strong economic growth. Actual costs and benefits would be highly dependent on the details of domestic policies, and how these interact with international actions.

Australia's ecosystems are unique and globally significant. At payments for carbon farming around A\$40-60 per tonne of CO₂e by 2030, carbon credits could be harnessed to reward landowners for restoring ecosystems, increasing native habitat by 17% and decreasing extinction risks by 10%, without large additional government outlays.



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Scope and purpose: Helping to navigate the future

The *Australian National Outlook* is a new initiative by CSIRO, which is intended to contribute to the evidence base and understanding required for Australia to navigate the complex and often intertwined challenges involved in achieving sustainable prosperity.

This first *National Outlook* seeks to provide a better understanding of Australia's physical economy. It has a particular focus on understanding two aspects: The 'water-energy-food nexus' and the prospects for Australia's materials- and energy-intensive industries, which account for one quarter of economic value and employment, but around three quarters of our use of energy, water and materials.

The analysis explores over 20 possible futures for Australia out to 2050 against the backdrop of the past 40 years to identify key future global drivers and assesses how these may impact our country. It then integrates these global perspectives into a uniquely Australian context in relation to possible technological and policy settings we

might consider as a nation to secure our future prosperity.

The *National Outlook* and science in general can contribute evidence and analysis to inform national conversations. However it cannot determine the choices we have to make as a community. They will – and should – be shaped by our values and collective imagination.

While this outlook identifies national opportunities, achieving these benefits will require considerable further consideration and action. The investments and other changes required will not happen overnight. There is no overstating of the challenges for policymakers, industries and communities in navigating the transitions needed to secure our future prosperity.

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NATIONAL OUTLOOK REPORTS

The full findings and results from the National Outlook project will be published in the *Australian National Outlook 2015*, a detailed technical report, and more than ten science papers written for peer reviewed journals. These reports and papers will be available from mid-2015 at www.csiro.au/nationaloutlook

FOR FURTHER INFORMATION

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