

PROSPECTUS

Future Earth Australia national workshop

Shine Dome, Academy of Science, Canberra
28-29 April 2016

Why this workshop?

Two hundred and fifty years ago the start of the industrial revolution marked the end of millennia of slow change in the world's demography and economies, and in humanity's impact on the planet. Two centuries of rapid growth and increasing impact brought us, around 1950, to the threshold of what has been called the 'great acceleration', a step change in the growth rates of population, global wealth and the impact of our species on the planet's biophysical life support systems.

The great acceleration has led to enormous improvements in personal wealth and quality of life, firstly in the developed nations but increasingly in the rest of the world too. The world economy is fully globalised. For the first time, governments are working together to address physical and social problems on a regional and global scale, recognising that the earth has entered the Anthropocene epoch where human actions constitute a force potent enough to affect the natural workings of the planet. Under UN initiatives like the Millennium Development Goals and the Sustainable Development Goals, the challenges of poverty, disease, food security and premature mortality are being tackled on a global scale and with sustainable long-term solutions as the target.

Just as we have now recognised the need to address these global problems because of the fundamental interconnectedness of today's world, we have also recognised that long-term solutions require us to fuse the best of our skills in the natural and human sciences, the arts and civil society, and for action to occur locally. Five years ago, the International Council for Science (ICSU) acknowledged this by initiating Future Earth, a global initiative that built on existing programs in biophysical and human sciences. It brings together many of the world's best researchers and thinkers to achieve long-term solutions to global challenges. Future Earth has already mobilised more than \$13 billion of research funding internationally.

Although the challenges are global, solutions will be a combination of local and regional actions—and these will be different for each country according to its geography, demography and state of development. The sustainability challenge for Australia is for us to continue to thrive as we maintain the distinctive social and biophysical attributes of our country.

Future Earth Australia is a node of the international Future Earth Program. It aims to support and facilitate activities already occurring in Australia to underpin our national sustainability, but it will also define and address those questions that are unique to Australia and its region and that no one else is tackling. As an integral part of the international Future Earth movement, it will position us to lever the enormous capability of the global effort to help us address Australia's special problems and to benefit from our unique opportunities.

The themes of the workshop

The workshop will be structured around three broad themes, and a fourth, which considers the links and feedbacks between the other three. It aims to produce a mix of:

- concrete outlines for major projects
- emerging ideas to be developed in the short, medium and longer term.

We intend this workshop to be a beginning and not an end, but a very substantial beginning that sets in place processes and teams that can develop well considered proposals that will have major benefits for Australia and its future.

Theme 1 People in a sustainable society

Across the globe, scholars of all disciplines increasingly agree that human actions and practices are pushing the global environment into chaotic realms far removed from the stabilities of the Holocene—the period that enabled humans to develop agriculture, industry and permanent settlements. Scientists and others across all knowledge fields are debating whether we have, in the last two centuries, entered a new age—the Anthropocene—where humans now influence the geological and biophysical forces of nature and leave enduring records of their presence. The natural and technological sciences are thus in large agreement that human preferences, practices and actions are the main drivers of global environmental change in the 21st century and therefore must be the focus of our efforts to understand, mitigate or adapt.

We in Australia and across the globe do not participate equally as either agents or victims of Anthropocene environmental change. This so-called ‘age of humans’ has been paralleled by equally profound socio-economic shifts towards inequalities of wealth, power and resource use across the globe. For example, the effects of anthropogenic climate change are already being felt disproportionately by the poor and vulnerable of our own Pacific region. We urgently need to investigate cultural, economic and political obstacles, as well as incentives, to promoting sustainable values and practices. Environmental humanities, social sciences, and arts scholars and practitioners can offer deep insights into human motivations, values and choices for the achievement of sustainability and into the associated issues of environmental justice and political governance. The expertise of such fields for transforming human preferences, practices and actions is essential. The Future Earth agenda for Australia must include social, political and cultural research, in collaboration with the natural and technological sciences, to confront the challenges of both planetary and local environmental change in the interests of sustainability.

Panellists

- Professor Freya Matthews, Philosophy and Politics, La Trobe University
- Professor Iain McCalman AO FAHA FASSA FRHist, University of Sydney Research Fellow in History and
- Co-Director, Sydney Environmental Institute
- Mr Andrew Petersen, CEO, Sustainable Business Australia
- Associate Professor Linda Williams, RMIT University
- Ms Angharad Wynne-Jones, Director, Tipping Point Australia

Theme 2 The economy and a sustainable society

The transition of the economy consistent with the UN’s [2015 Sustainable Development Goals](#) and the aspirations of Future Earth raise important questions. What mix of economic activity in Australia will provide a fulfilling lifestyle for its population, while contributing to a sustainable world? What sectors will provide jobs, economic activity, and a reduction in environmental degradation? Can we drive productivity growth through energy and resource input efficiencies? Which Australians will be most challenged by economic transformation? What will the corporations and institutions of the future look like in a sustainable global and Australian economy? How will the finance and investment sectors manage their portfolios and risk in a carbon-constrained world? As an export-oriented economy, how will Australia manage its economic, social and environmental relationships within a dynamic and growing region? Future Earth Australia must take the lead in establishing the collaborations and knowledge base essential for Australia to find answers to these questions.

Panellists

- Dr Imran Habib Ahmad, Honorary Associate Professor Australian National University
- Dr Stephen Bygrave, CEO, Beyond Zero Emissions
- Professor Bob Costanza, Vice Chancellor’s Chair in Public Policy, Crawford School of Public Policy, Australian National University
- Dr Sasha Courville, Head of Corporate Responsibility Strategy, National Australia Bank (Video presentation)
- Ms Zoe Piper, Managing Director, Allaran and Co-founder/Director, Ecolour

Theme 3 The environment and a sustainable society

How can we care for our unique environment as demographic and economic pressures increase? Can we avoid activities that deliver short-term economic returns but do lasting damage? Climate change will have a profound impact on Australian biota because much of our continent is hot, flat and dry, and small changes in temperature translate into large latitudinal changes in viable habitats for affected species. Nations in our regions will face their own climatic challenges resulting in both modification to habitats and wholesale loss of many coastal environments as sea level rises. Other interlinked processes such as over-extraction from aquifers, disruption of food chains, increasing impact of exotic species also have multi-decadal or centuries long consequences. What kind of urban environment is compatible with a decent lifestyle for the 90% or more of Australians who live in cities? Should we simply continue to grow current aggregations of settlements or give decentralisation another go, and how does this relate to infrastructure investment? How will our adaptive responses to climate change, especially to food and water insecurity, affect our already-stressed environment?

What can we learn about institutions for managing environmental variability and uncertainty from both Indigenous people of Australia and our region and the past two centuries of experience applying European approaches to land management? Similarly, how can we bring together knowledge from science, the arts, humanities and other ways of understanding the world to improve society's ability to prepare for multiple, uncertain futures?

Panellists

- Professor Stuart Bunn, Director, Australian Rivers Institute, Griffith University
- Dr Pep Canadell, CSIRO Senior Principal Research Scientist and Executive Director of the Global Carbon
- Project of global Future Earth.
- Professor Karen Hussey, Deputy Director, Global Change Institute, University of Queensland
- Dr Ross Smith, Director, Hydrobiology Pty Ltd
- Dr Bob Webb, Visiting Fellow, Fenner School of Environment and Society, Australian National University

Theme 4 Links, feedbacks and actions

Session chairs: Dr John Finnigan and Professor Lesley Hughes

Themes one to three are strongly interrelated. To maintain a decent lifestyle for an increasing population, economic growth must continue because without economic opportunity and equitable incomes, political deadlock or instability can follow. To avoid irreparable damage to the environment, economic growth must be decoupled from environmental impact. Is this possible? As environmental and demographic forces collide in our surrounding region, the Asia-Pacific, refugees from conflict, food insecurity sea level rise and other consequences of climate change may well increase. How will Australia cope with regional pressure to take more refugees, given the political capital to be made from denying entry? What, fundamentally does sustainability mean in an Australia that is heading for 40 million people by 2100? Which of the things that we currently value should we be prepared to give up—such as access to uncrowded clean beaches, the open air lifestyle or a fair go for all—in exchange for economic prosperity?

Speakers will reflect on and bring together the knowledge and ideas that have surfaced during the day.

Panellists

- Dr Jenny Gordon, Principal Advisor Research, Productivity Commission
- Professor David Griggs, Professor of sustainable development, Monash Sustainability Institute, Monash University
- Ms Kate Harris, CEO, Good Environmental Choice Australia
- Dr David Newth, Group Leader of Earth Assessment, and Team Leader of Integrated Assessment, CSIRO

Outcomes of this workshop

Within each of the themes, existing initiatives will be showcased that bring together all types of relevant knowledge to address the challenges and opportunities waiting in Australia's future. Opportunities will also be provided for participants to pursue new proposals and ideas coming from the workshop.

In addition, this workshop will:

- broadcast the need to consider sustainable future directions for Australia in an integrated way, spanning the human and biophysical sciences, the humanities and civil society
- raise awareness of the work being undertaken internationally by Future Earth and show how to connect to that knowledge base
- bring together individuals from diverse areas of society to initiate a set of projects of central importance to Australia's sustainability and which require the fusion of this wide span of expertise and knowledge.