



FUTURE EARTH AUSTRALIA YEAR IN REVIEW: 2018

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FUTURE EARTH AUSTRALIA YEAR IN REVIEW: 2018

Director's report

Future Earth Australia (FEA) works with leading scientific researchers, providing a conduit between these researchers with government, industry and civil society to ensure that a systems approach is taken to the implementation of sustainability science. We work closely with our hosting organisation, the Australian Academy of Science (the Academy).

I commenced the role of Executive Director Future Earth Australia (FEA) on 8 March 2018—International Women's Day—following the departure of my predecessor, Dr Imran Ahmed in December 2017. During his time as Director of FEA, Imran worked with our stakeholders to continue the great work completed in the 2014–16 ACOLA phase of FEA. Imran's work laid important foundations for the future of FEA and for this we thank him.

My auspicious commencement date bodes well for our recent successes. Throughout 2018, FEA strengthened relationships with the Australian learned academies and our founding members (CSIRO, ANU, Macquarie University, University of Queensland and University of Sydney). We also welcomed new members including the Australian Institute of Marine Science, Queensland University of Technology, Griffith University and Deakin University (January–February 2018), the University of New South Wales (April 2018), RMIT University and Western Sydney University (May 2018), the University of the Sunshine Coast and GeoSciences Australia (July 2018). Our members have each made commitments to FEA for between three and five years, and we look forward to working with them and our founding members in the coming months and years. We have expanded our funding model and have clear pathways forward, ensuring that Future Earth Australia is the eminent and peak body for sustainability research and advocacy in Australia and our region.

The Future Earth global network considers that sustainability solutions will emerge from the interaction of groups that normally remain siloed and from seeking out non-traditional knowledge sources.¹ This underlying value proposition underpins the



Future Earth network. Future Earth activities have seen a renewed focus on cross-sector collaborations that promise to deliver practical tools for the implementation of the Sustainable Development Goals (SDGs). The Bonn Summit, held in August 2018, created momentum to build early career researcher and practitioner capacity in sustainability research and practice, and for the implementation of a 'State of the Planet' annual report.

Closer to home, FEA takes seriously our role as independent convenors, collaborators, and co-designers of research. We are a conduit for universities, industry, government and civil society as we work to implement a future-focused agenda. This agenda must be cognisant of the Sustainable Development Goals and their role in enabling societal transformation.

Throughout 2018, FEA focused efforts on three key areas: urban systems transformation, climate risk and equity, and collaborative capacity building programs for early-career researchers and practitioners (ECRPs). In just nine months we sponsored 120 ECRPs to attend workshops and symposia across Australia. The

1 Amy Luers, Executive Director (Global), August 2018 *2017–2018 Future Earth Annual Report*, p5.

objective of these events is to develop the skills and knowledge required for the type of collaborative and co-designed research needed to address current and future government and industry needs, aligned to the SDGs and aiming for societal transformation in taking steps in implementing the SDGs. All of our ECRPs become members of our FEA early-career alumni—and, over time, we will develop a complementary mentoring program for our ECRP alumni.

We travelled widely, working to ensure that FEA is a voice that represents all states and territories and numerous organisations.

FEA held many events and in keeping with our commitment to national representation the locations were in several states. Under our urban systems flagship, we held several events and community consultations around Australia to inform the development of a national strategy. The strategy will contain implementable recommendations for policy makers and industry towards a more integrated approach to our cities and regions—necessary if we are to be serious about long-term sustainability.

Our climate risk and equity flagship launched at an event at the University of Sydney, has seen the emergence of a range of activities concerned with ensuring public disclosure of climate risk.

Our early-career events have seen us in Brisbane, Canberra and Melbourne. In Melbourne we partnered with Professor John Thwaites, Dr Tahl Kestin and John's team with the Sustainable Development Solutions Network to hold a wonderful event comprising researchers and practitioners from across the country. Attendees were treated to a visit and keynote from Professor Jeffrey Sachs, and left the two-day symposium full of enthusiasm and

collaborative ideas. Our ECRP program is a source of great pride for us. Not only is it important for FEA as a convening platform, to bring people together, but we recognise that our future sustainability, and therefore future Earth, requires input from our younger citizens, along with leadership from our older ones.

To this end, we are also working with primary and secondary school students to discuss the importance of the SDGs and how the goals may be integrated into everyday life. We remain active collaborators with the Young Persons Plan for the Planet program, a secondary school initiative initially co-founded by FEA in 2016. In addition, our current primary school focus on SDG literacy led us to partner with Questacon and the Academy to produce an 'SDG explainer' video. This video has had over 1,171,000 views across social media platforms and attracted significant philanthropic donations, enabling FEA to continue our capacity-building efforts.

We have big plans for 2019 and beyond, including expanding our flagship areas of focus to include oceans, and to enable tangible (and funded) linkages between the sciences and the humanities.

The Future Earth Australia team, along with our Steering Committee, are always open to opportunities to co-design, co-produce and collaborate on integration across the SDGs to enable societal transformation for sustainability. If you would like to contribute to our efforts or our organisation, please reach out to us. We'd love to have you on board.

We warmly welcome you on our journey for Future Earth.

Dr Tayanah O'Donnell

Director, Future Earth Australia

A reflection from the Co-Chairs

The 2018 Year in Review of Future Earth Australia arrives as a range of critical environmental issues are devastating Australian communities. From the floods and stock drownings in Far North Queensland and the heat waves nationally, to the fish kills on the Darling River and the bushfires raging through New South Wales and Victoria, our community is struggling to cope with the effects of environmental changes as they interact with poor decisions of the past. Indeed, as we write, Australia's first extinction due to climate change, that of the Bramble Cay melomys, has been confirmed. The past year has also been characterised by polemic debates about population, city congestion and infrastructure, the dire state of our recycling sector, and the cost of housing.

But there is a distinct shift in the tone of the public discourse as we move into 2019. The business (and particularly finance) sector in Australia is demanding action on sustainability, as an agenda emerges in support of the Sustainable Development Goals. More people are asking how the idea of a 'circular economy' might benefit our community, business and policy. Australians—especially young Australians—are insisting that issues like resource scarcity, community health and wellbeing, climate change and sustainable development matter to them.

Providing responses to all of these challenges demands integrated, interdisciplinary and 'impact oriented' approaches to research, which is precisely



what Future Earth Australia is starting to deliver. This year, FEA has proved that it can provide the 'enabling environment' needed to bring diverse research and societal voices together to focus on the strategic needs of the nation. The range of activities outlined in this report speak to the establishment of that unique convening capability. It is highlighted by the progress made by FEA and its university, government, industry and community partners towards co-developing a long-term decadal plan for cities, but you will find other emerging topics also. FEA also takes seriously its role in assisting the next generation of researchers to carry out these integrated activities better, as shown by the successful year of early-career activities.

Enjoy reading this Year in Review! We look forward to members consolidating FEA's work plan and building on these initial successes in 2019.

Professor Karen Hussey

Dr Mark Stafford-Smith

1 Global engagement

1.1 FUTURE EARTH GLOBAL SUMMIT

Director Tayanah O'Donnell attended the Future Earth Global Summit in Bonn, Germany in August 2018. The summit was attended primarily by representatives from Future Earth Global Research Projects, Knowledge Action Network representatives the advisory council, and the global secretariat.

Key outcomes of this meeting included the adoption of a global Earth Systems Targets tool, progressing the State of the Planet annual report, and a greater recognition of the contributions that national and regional Future Earth committees can make to Future Earth Global.

1.2 HOSTING THE GLOBAL URBAN KNOWLEDGE ACTION NETWORK

Commencing in 2019, Future Earth Australia will be hosting the Urban Knowledge Action Network (Urban KAN), together with Tokyo University and the Tokyo global hub for Future Earth. Our hosting of the Urban KAN aligns with our urban systems flagship and enables our national network to foster direct linkages into our global network.

1.3 BELMONT FORUM

Established in 2009, the Belmont Forum is a partnership of funding organisations, international science councils, and regional consortia committed to the advancement of interdisciplinary and transdisciplinary science. Forum operations are guided by the Belmont Challenge, a vision document that encourages:

International transdisciplinary research providing knowledge for understanding, mitigating and adapting to global environmental change.

Australia originally signed up to the Belmont Forum with representation and funding from the Department of the Environment. The relationship passed to CSIRO several years ago. Australian researchers can only participate in Belmont Forum projects/networks with their own funds 'in kind', which presents a significant barrier to access. Australia has forfeited membership



Future Earth Australia Director, Dr Tayanah O'Donnell, with Future Earth advisory council co-chair Professor Johan Rockstrom and the Future Earth Australia SDG video

on the executive committee of the Belmont Forum in recent years, as CSIRO was unable to invest at the level required to maintain executive committee representation. This limits Australia's global influence on key international science initiatives, such as Future Earth.

The Academy and FEA have worked towards enhancing Australia's engagement in the Belmont Forum over a number of years. A roundtable—held in November 2017 with key stakeholders in government, research sector, private sector, learned academies, ACOLA business manager and the community sector, and chaired by Professor Ian Chubb AC FAA FACE FTSE—proposed two options:

- The learned academies through ACOLA could take on the role of Australian representation to the Belmont Forum, subject to agreement from the commonwealth government and CSIRO and consultation with the Belmont Forum

- The Australian Academy of Science (or other academies), can take on the role of Australian representation to the Belmont Forum, subject to agreement from the Commonwealth government and CSIRO and in consultation with the Belmont Forum.

More recently, discussions moved to FEA playing a lead role and becoming the main Australian member. A positive outcome will be significant for the FEA community, enabling our members to more fully engage with the international research community.

1.4 ACROSS OUR REGION

Currently FEA is working with our global network to move from a national committee to a 'Regional Hub' status within the Future Earth matrix. Dr O'Donnell first discussed the idea in FEA secretariat hosting a regional hub with Dr Amy Luers, Executive Director of Future Earth, in April 2018. Since that time contacts in New Zealand have been established, with interest from University of the South Pacific and support in writing from the Royal Society of New Zealand. Dr Tim Payn, leader of the Economics, Ecosystem and Climate Research team, at the New Zealand Forest Research Institute is leading the effort in New Zealand.

2 Convening power and capacity building

2.1 EARLY-CAREER RESEARCHER AND PRACTITIONER PROGRAM

Future Earth Australia is committed to the education and development of young people—from primary school aged children through to early-career researchers and practitioners—in issues of sustainability and development.



Stephanie Zhang, ANU presenting at the 2018 Australasian Early Career Researcher Network Symposium

In 2018, FEA implemented an Early-Career Researcher and Practitioner Program (ECRP-P). This provides a platform for researchers and practitioners to network, share research and forge collaborations. As part of the program, FEA provides 10 scholarships for ECRPs to attend events held by member institutions. These include travel costs.

In 2018, FEA co-hosted three ECRP-P events.

2.1.1 2018 Australasian Early Career Urban Research Network (AECURN) Queensland Symposium: Transformation in Urban Environments

In September, FEA partnered with the Australasian Early Career Urban Research Network (AECURN) for a symposium in Brisbane, Transformations in urban environments. The single-day workshop had a multidisciplinary focus; attendees were encouraged to discuss urban change and transformation including physical, environmental, social, cultural, technological and political aspects.

Following an introduction by FEA Director Tayanah O'Donnell—outlining Urban Systems Transformations



Joanne Dolley, Griffith University presenting at the 2018 Australasian Early Career Researcher Network Symposium



Ray Maher, University of Queensland presenting at the Integration Across the SDGs and the Role of Research Early-Career Researcher and Practitioner Symposium



(top left): Dr Arunima Malik, University of Sydney presenting at the Integration Across the SDGs and the Role of Research Early Career Researcher and Practitioner Symposium. (top right): Australian Climate Change Adaptation Research Network for Settlements and Infrastructure ECRP Workshop attendees outside Parliament House. (above left): Ian McNicol, Griffith University, presenting at the Australian Climate Change Adaptation Research Network for Settlements and Infrastructure ECRP Workshop. (above right): Australian Climate Change Adaptation Research Network for Settlements and Infrastructure ECRP Workshop attendees beginning their tour of the Australian National Botanic Gardens.

and the cross-country consultation workshops currently in progress—the ECRPs presented their work. The 14 research presentations were grouped into three categories: Planning, designing and building to transform the urban; Transforming urban policy and behaviours; and Communities and governance in urban transformation.

2.1.2 Integration Across the Sustainable Development Goals and the Role of Early-Career Researcher and Practitioner Symposium

Future Earth Australia and the Australia, New Zealand and Pacific Network of the Sustainable Development Solutions Network (SDSN) hosted a two-day workshop for 40 ECRPs in Melbourne in October. The

participants were asked to consider how the SDGs might be integrated more successfully into urban development research and practice.

During the first day attendees worked together, brainstorming fresh research ideas. The day concluded with an ‘ideas cafe’ run by the SDSN—a relaxed forum for the ECRPs to ask colleagues for feedback on their ideas. On day two the focus shifted to how SDG research could be translated into practice. The ECRPs gave flash presentations proposing methods for incorporating the SDGs into practical applications. The presenters were given a maximum of three minutes to ‘sell’ their work, simulating a high-pressure professional pitch. Feedback on this dynamic part of the workshop was especially positive.

2.1.3 Australian Climate Change Adaptation Research Network for Settlements and Infrastructure Early-Career Researcher and Practitioner Workshop

In December FEA again partnered with Climate-KIC and the Australian Climate Change Adaptation Research Network for Settlements and Infrastructure to bring a group of 25 ECRPs to Canberra for a three-day workshop.

Day one started with a series of short presentations by the attendees on their research or areas of

practice. Then, shifting up a gear, Chris Lee, CEO of Climate-KIC, ran an interactive workshop game—how to hack a climate bond! Teams roleplayed being finance staff at publicly listed companies from the transport, property, tourism and natural resources sectors. The challenge was to balance the tension between raising enough capital to undertake appropriate climate adaptation but to avoid taking on too much debt. For the players, it offered a real insight into monetarising climate risk.

Day two introduced attendees to a high-level policy pitch. Teams were provided with climate change scenarios to pitch to a ‘government minister’—they had one hour to develop their proposal, and only 90 seconds to capture the Minister’s interest! Dr Chris Hatherly, Director, Science Policy and Projects at the Academy, in drawing on his own experience engaging with politicians, judged the pitches and chose the winning team.

The field trip component of the workshop included a visit to the National Botanic Gardens and Parliament House. On day three participants visited the Australian National Botanic Gardens and Parliament House. The visit to the gardens provided an opportunity to learn about sustainable regenerative practices. After lunch the group headed to Parliament House for Question Time. The day concluded with a trip to a local winery, renowned for its sustainable agricultural practices and



Australian and Mauritian Conference delegates at It's Our Future Earth 2.0 Conference in Mauritius

working with the local landscape to produce their product.

On the final day of the workshop Doreen Erhart, Manager Queensland Climate Resilient Councils (Q CRC) Program and Lead—Climate Change and the Great Barrier Reef, gave a talk about building the Queensland Climate Resilient Councils and QCoast2100 programs. These programs link various institutions and sectors to implement coastal adaptation strategies, and monitor and evaluate these strategies in real time.

Feedback from participants over the three days was overwhelmingly positive with many making connections for future projects.

2.1.4 Young Persons' Plan for the Planet

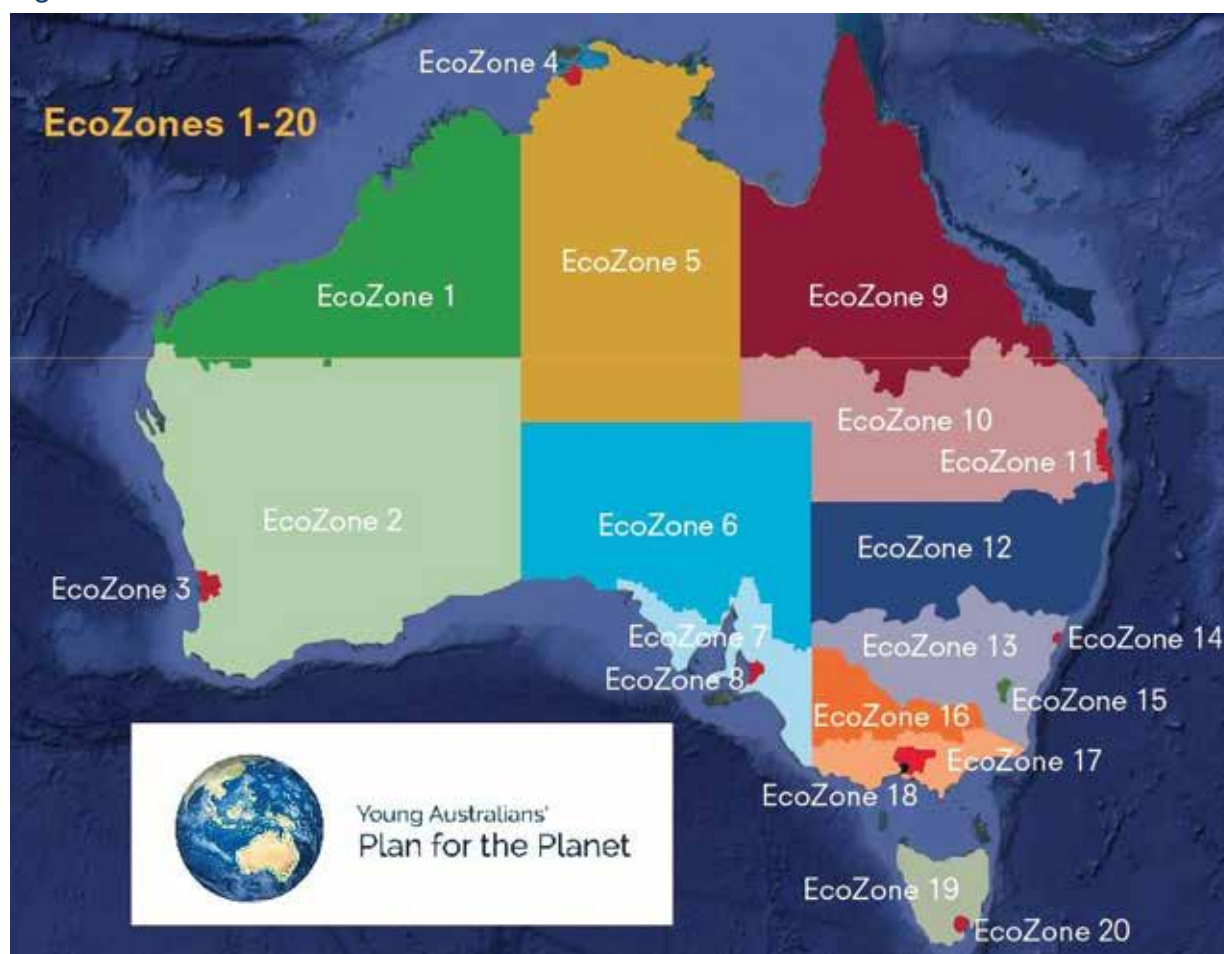
Young Persons' Plan for the Planet is an initiative of FEA, Questacon, Inspiring Australia, the United Nations Information Centre Canberra, the Australian National University, the University of New South Wales and the University of Technology Sydney.² The

program promotes sustainable development in Australia with links to the UN SDGs. The program is led by Ian Chambers at the ANU.

Originating in the FEA ACOLA phase, the YPPP program officially began in 2017. Twenty Australian schools were chosen to create a sustainable development plan 2017–2030 for their EcoZone (see Figure 1). The schools then worked to combine their individual EcoZone plans into a national sustainable development plan (Young Australians' Plan for the Planet). This was presented in Canberra to federal ministers in August 2017. Following on from the success in the first year of the Australian program, the program has now expanded to Mauritius adding the Young Mauritians' Plan for the Planet to confirm the enthusiasm for the process and capability beyond Australia.

In 2018 the It's our Future Earth Conference 2.0 was held in Mauritius. The conference was open to selected senior high school students from across Australia and Mauritius. It covered a broad range of

Figure 1: Plan for the Planet Ecozones



² <https://www.planfortheplanet.org.au/about-us/>



Selection of Australian conference delegates at the Mauritius Commercial Bank Building, Ebene, Mauritius.



Australian and Mauritian Conference delegates at It's Our Future Earth Conference 2.0 in Mauritius.

key innovations in science, as well as other STEM subjects specifically focused on the Science Exploration theme of achieving a sustainable Future Earth. Future Earth Australia was delighted to support student attendance. Other sponsors included The Frank Fenner Foundation, the Society for Responsible Design and the Mauritius Commercial Bank.

The conference focused on the application and opportunities in STEM fields for further study and careers within sustainability. Attendees were able to

learn from career scientists, engineers and technologists through presentations and workshops. Attendees were also given the opportunity present and workshop STEM and management learning from their development in the Young Persons' Plan for the Planet Program. Attendees were given the opportunity to engage with key stakeholder organisations, including government and community leadership, NGOs and business through the networking and social event sessions during the conference.

'This conference brought together people of different backgrounds, mindsets and cultures; here this vast array of individuals shared their experience and insights through engaging presentations, deep conversations and other actions which developed bonds which united us even more toward 1 shared cause. Moreover, it was the human interaction, a working physical manifestation of our vision which resonated strongly with me along with that reassuring and reminding that my actions matter and yield results.'

Ronan Young, year 12

'I feel very honoured and privileged to have experienced the Young Persons' Plan for the Planet Conference in Mauritius. This amazing opportunity has helped me grow and develop as a person in many ways, as well as assisting me with having a better understanding on the SDGs. I have become further aware and have gained a better understanding of the issues our world is facing and strategies we can put in place to combat these issues. Working with different students from all around Australia and Mauritius was a fun experience as I made many new friendships. I thought it was a fantastic idea to bring the students together to help create the International plan, the cooperation of the students strongly helped gathering ideas for the plan as others had different levels of understandings. Not only did we learn the importance of working together as a team but this strategy also helped me personally to develop my leadership skills as well as my learning organization. As much as this conference has helped me expand on my knowledge it has also aided me with my personal growth.'

Aneesah Hashim, year 10



Australian High Commissioner to Mauritius, HE Ms Jenny Dee—opening address at the Rajiv Gandhi Science Centre during the conference.

3 Engagement and advocacy

3.1 THE IMPORTANCE OF THE SUSTAINABLE DEVELOPMENT GOALS

In August, FEA in partnership with Questacon and the Australian Academy of Science, released a short video featuring children from an Australian primary school outlining the UN SDGs.



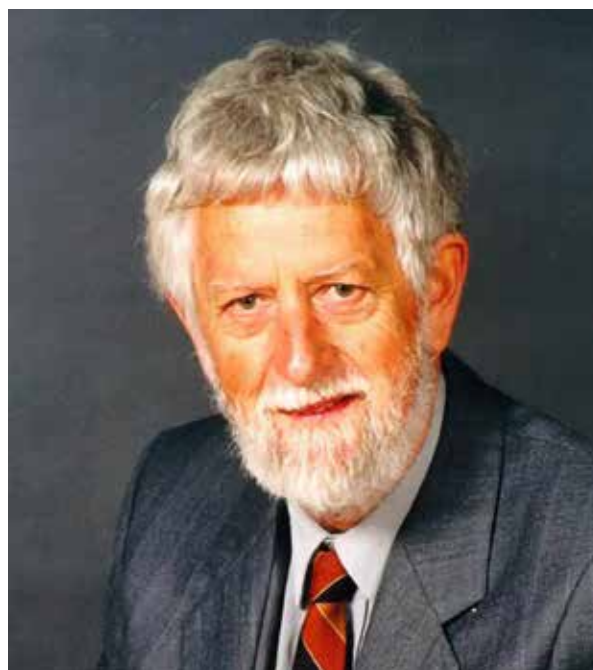
This video has had over 1.1 million views on Facebook alone and has been shared almost 200 times. As a direct response to this video FEA received a substantial philanthropic donation.

3.1.1 Philanthropic donation from the McDougall family

Future Earth Australia was thankful to receive a philanthropic donation from the McDougall family (Ian McDougall, Professor in Earth Sciences, ANU) to support FEA activities, particularly capacity building within sustainability.

Professor McDougall was elected to the Academy in 1988 for his pioneering work on the application of K-Ar dating to young basalts and its use for determining the geomagnetic reversal timescale and the relative motion of the Pacific oceanic plate to the underlying mantle. He solved an important controversy over hominid evolution by providing a comprehensive and precise time frame for the important fossil beds around Lake Turkana in northern Kenya and conducted noble gas geochemical studies on mantle derived samples to provide insights into the composition and evolution of Earth's atmosphere, crust, mantle and core.

Professor McDougall was actively involved in the Academy for many years, serving on numerous committees and on the Academy's Council and as Treasurer from 2001 to 2005. Following his 'retirement' (in 2000), as an honorary fellow and



Professor Ian McDougall FAA

Emeritus Professor of Earth Sciences at the ANU Professor McDougall used new geological dating technology to date two skulls from Ethiopia as the world's oldest human fossils, by dating the rock layers above and below where the fossils were found. His findings not only revealed that homo sapiens go back 40,000 years further than previously believed but also uncovered 'dramatic geological evidence of climate change'.

He remained one of the most highly cited and globally respected scientists in his field, received the Stillwell Medal from the Geological Society of Australia in 1975, was elected to Fellowship of the American Geophysical Union in 1997 and the Geological Society of America in 1978 and received the Academy's Jaeger Medal in 2007 and an Hon DSc from the University of Glasgow in 2009.

3.1.2 Submission to the Senate Inquiry into the Sustainable Development Goals

In 2018, the Academy and FEA made a joint submission on Australia's engagement with the UN SDGs to the Senate Committee on the UN SDGs. Australia's progress against the SDGs is mixed. Australia is ranked 26th of 157 nation states and 23rd in the OECD (35 states).

The submission acknowledged that

'implementation of the SDGs requires a consistent national framework to enable decision-making at state and local levels of government, and promote certainty for the business sector. To ensure transparency and accountability, it should be supported by an independent entity that has national and global reach, and the ability to leverage on greater collaboration with the academic community, to ensure a best practice evidence base informs policy, enabling the effective implementation of the SDGs'.

3.2 POLICY AND ADVOCACY

As a part of the Academy, FEA is strongly positioned to develop opportune and comprehensive policies for sustainable development. The Academy provides

expert scientific policy advice in identified priority areas, advises government and advocates for change, and engages with politicians and policy makers, building a compelling case for science funding.

In 2019, FEA plans to engage with federal parliamentarians on both sides of the house to describe the findings of the urban transformation program. Synthesis of the information from all the states and territories will allow FEA to develop coherent and meaningful policy guidelines, that aim, if instated, to favourably alter the way that Australian urban systems transform in the coming decades in a practical and implementable form.

4 Events

Future Earth Australia hosted Introducing Future Earth events at the University of Queensland and RMIT University in June and September 2018. Director Tayanah O'Donnell and a panel of researchers from partner universities discussed the work of FEA and Future Earth global programs such as Future Earth Coasts. The events were well attended, including a good attendance by ECRPs, many of whom subsequently joined the ECRP Program.

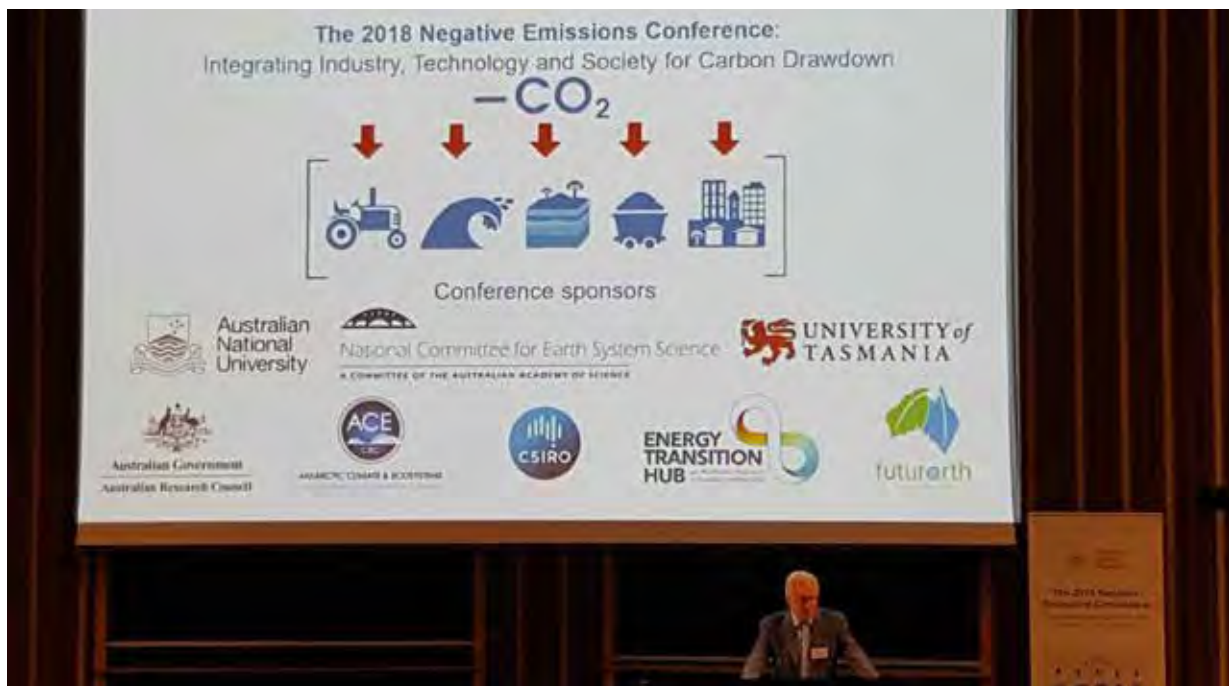
In October, FEA sponsored a symposium at the Energy Change Institute at the ANU—Social Equity in Energy Transformation. The symposium focused on how Australia's transition to renewable energy will affect social equity, and whether the transformation process can be harnessed to reduce, rather than exacerbate, social inequities in Australia. FEA sponsored the symposium's networking afternoon tea.

The symposium brought together experts from government, business, community groups, think-tanks and academia to discuss challenges and strategies with energy transformation. It provided an excellent forum for the FEA team to meet highly knowledgeable people within the renewable energy and energy and equities field. Our relationship with this sector is likely to grow as we turn attention to climate risk and equity.

A two-day event—Negative Emissions Conference: Integrating Industry Technology and Society for Carbon Drawdown—was held at the Shine Dome in Canberra in late October. The conference explored negative emissions technologies from practicality, feasibility, and environmental and societal impact perspectives. Future Earth Australia sponsored student registrations.



Professor David Hamilton, Professor Tim Smith and Dr Tayanah O'Donnell during a panel discussion at the Queensland Introducing Future Earth event.



(top): Professor John Hewson opening the 2018 Negative Emissions Conference. (above): Associate Professor Sara Bice speaking at the Social Equity in Energy Transformation function.

5 Urban Systems Transformation: Sustainable Cities

In May, FEA brought together cross-disciplinary researchers from across Australia to envision how new and existing knowledge could better support

the development of sustainable urban systems. The process is being overseen by the Urban Systems Reference Group.

Urban Systems Reference Group

| | |
|--|--|
| Dr Tayanah O'Donnell (Project Co-Lead) | Australian National University Future Earth Australia |
| Honorary Associate Professor Bob Webb (Project Co-Lead) | Australian National University |
| Professor Jago Dodson (Reference Group Chair) | RMIT University |
| Professor Kate Auty | ACT Commission for Sustainability and Environment |
| Professor Xuemei Bai | Australian National University |
| Guy Barnett | CSIRO |
| Helen Bell | Green Building Council of Australia |
| Professor Paul Burton | Griffith University |
| Deb Cailles | City of Melbourne |
| Professor Tony Capon | University of Sydney |
| Professor Bob Costanza | Australian National University |
| Dr Michael Fotheringham | Australian Housing and Urban Research Institute |
| Dr Steve Hill | Geoscience Australia |
| Professor Tom Kvan | University of Melbourne |
| Ken Maher | Hassell Studio |
| Professor Peter Newman AO | Curtin University |
| Professor Peter Newton | Swinburne University |
| Professor Barbara Norman | University of Canberra |
| Professor Christopher Pettit | University of New South Wales |
| Scientia Professor Deo Prasad AO | University of New South Wales |
| Professor Rob Raven | Monash University |
| Dr Jessa Rogers | University of New England |
| Professor Chris Ryan | University of Melbourne |
| Associate Professor Juan Salazar | Western Sydney University |
| Professor Neil Sipe | University of Queensland |
| Dr Mark Stafford-Smith | CSIRO |

Each workshop includes a special focus on issues and opportunities for the specific city and the surrounding region, as well as implications for a national approach to sustainable city planning.

Beginning in November, the FEA team ran workshops in Western Sydney, Sydney, the Australian Capital Territory and region, and South East Queensland. In 2019 workshops are planned for Melbourne, Adelaide, Perth, Darwin and Alice Springs.

5.1 WESTERN SYDNEY WORKSHOP

Western Sydney University hosted the first workshop in November 2018, with speakers from the Institute for Culture and Society, Western Sydney University and the Centre for Smart Green Cities, Macquarie University.

When asked to describe how they see Western Sydney now, participants immediately commented on

A word cloud visualization of terms related to urban planning and sustainability. The words are arranged in a circular pattern around a central point. The most prominent words, shown in larger fonts, include "diverse", "hot", "opportunities", "unsustainable", "dynamic", "sprawling", "lacking", "congested", "crowded", "fast-growing", "pressured", "non-collaborative-environment", "unmanageable", "crazy", "vibrant", "energetic", "dusty", "cars", "growing", "river", "polluted", "planning", "culture", "monotonous", "western", "underresourced", "multicultural", "unloved", "expanding", "hidden-agenda", "biodiversity hotspot", and "disconnected opportunities".

[illegible]



Participants in Western Sydney, with Associate Professor Juan Francisco Salazar, Institute for Culture and Society presenting.

the heat. The point was made that even though Sydney is hot, Western Sydney residents struggle more due to lack of beach and shade access. A poor standard of planning and infrastructure and the pressures associated with growth, such as congestion and pollution, were identified as critical issues to be addressed.

Much of the vision for the future focused on greening of the built environment. Suggestions for a National Strategy included creating cross-disciplinary advisory groups that would link people from universities, communities and businesses. Support was also strong for involving youth in creative ways, with the observation that many young people feel locked out

of discussions regarding urban futures. Generally, the group felt that community and liveability should be of the highest priority in planning, that ecologically sustainable cities are needed and that a long-term commitment to sustainability will be required.

5.2 SYDNEY WORKSHOP

The University of New South Wales hosted a workshop focusing on the Greater Sydney Region. The workshop was opened by the Dean of Faculty Built Environment, UNSW. Other speakers represented the City Analytics Lab, and the department of City Planning, UNSW. The workshop was closed by the CEO of the CRC for Low Carbon Living.

When participants were asked to describe how they see Sydney now, the more prominent words selected were 'exploited', 'disconnected', 'construction' and 'congested'. More positive popular words were 'dynamic' and 'changing'. Everyone agreed that these views were very negative and suggested that Sydney residents feel helpless, lacking involvement in the planning process.

The most popular answers to the question 'what would you like Sydney to be in 30 years?', the strongest support was for 'green', 'sustainable', 'liveable', 'inclusive', 'metro-served', and 'community rich'.



Teamwork! Sustainability for future Sydney



Discussing barriers and opportunities for urban transformation in Sydney

Participants suggested several strategic actions to tackle Sydney's liveability and sustainability issues, including proportionate distribution of affordable housing, integrated knowledge-based projects like 'Our Living River', using Building Information Modelling for public infrastructure projects, and better use of data to inform public spending around transport.

To create a robust and workable national strategy, most people agreed on the need for collaboration across silos and the setting of clear and measurable

targets. Other suggestions were the need to integrate people, processes and technology, the promotion of active travel as a national priority, and a demonstrated increase in renewables. People felt very positively about the use of demonstration projects to help residents visualise their future environment.

5.3 AUSTRALIAN CAPITAL TERRITORY AND REGION WORKSHOP

A workshop for the ACT and region was held—in partnership with the Australian National University and CSIRO—at the Shine Dome in Canberra. Speakers were from CSIRO, the ANU, the Commissioner for Sustainability and the Environment, the University of Canberra and the ACT Council of Social Services.

There were diverse viewpoints about Canberra, the ACT and its region. Some people pointed out that although on paper Canberra is diverse it can feel very 'white'. There was an overwhelming feeling from younger participants that people don't tend to live in Canberra forever, so they don't care how the city ends up. Yet when participants formed a timeline to show how long people in the room have been living in Canberra over 20 participants had lived in Canberra for more than 20 years!

The vision for Canberra's future focused on a push towards active transport and a sense of connectivity.



Professor Kate Auty, ACT Commissioner for Sustainability and Environment, opening the ACT and region workshop with an important reminder of Indigenous knowledge and values



Participants noted that currently Canberrans are extremely car reliant and a vision for the future would include more availability and encouragement of the use of active travel. Canberra's sprawling status was also mentioned and the need for better connectivity, both within Canberra and connecting Canberra to the rest of Australia.

When asked about key priorities for a national strategy, participants focused on the need to integrate research, value of our natural resources, and the need to consider environmental issues in all legislation.

5.4 SOUTH EAST QUEENSLAND WORKSHOP

The final workshop for 2018 was held in Brisbane and hosted by Griffith University. The scope of the workshop included the whole of the South East

Queensland Region including Brisbane city and surrounds, the Sunshine Coast, Gold Coast and Toowoomba.

The workshop was opened and closed by the Director of the Cities Research Institute, Griffith University. Other speakers represented the Cities Transport Taskforce, Qld Treasury and the School of Earth and Environmental Science, the University of Queensland.

Participants felt that currently, SEQ is sprawling, growing too fast and that the area feels disconnected. They also felt that the signs for sustainability were promising and the area had a dynamic feel to it (Figure 4). In 30 years, participants hoped that the region would be inclusive, liveable, with shared prosperity and equitable access to jobs, learning, education, and community services (Figure 5).

Figure 4: How would you describe SEQ in 1 word?



[illegible]

Participants at the workshop strongly believed that incorporating sustainability principles into the urban transformation of SEQ would create a region in which people are motivated to consume less, and which

An important part of the urban systems transformation project has been to engage with local ECRPs. The ECRPs have played a critical role in the workshops, acting as table scribes and helping to condense the large amount of information produced during discussion periods. The ECRPs have generally been



5 URBAN SYSTEMS TRANSFORMATION: SUSTAINABLE CITIES



Professor Xuemei Bai

PhD or junior postdoctoral fellows researching urban sustainability. The workshops provide the ECRPs with a forum for networking among a much wider community than they would normally be exposed to. In addition, the close involvement of ECRPs in the workshops enables FEA to support bright young minds and future stalwarts of urban systems research.

5.5 CELEBRATING PROFESSOR XUEMEI BAI

A prominent member of FEA, Professor Xuemei Bai of the ANU Fenner School of Environment and Society, was awarded the Volvo Environment Prize in 2018. Professor Bai is a founding member of the Future

Earth Urban Knowledge Action Network, the author and editor of *Urban Planet: Knowledge Towards Sustainable Cities*, an author of the *CitiesIPCC Research and Action Agenda*, and was a member of the Scientific Steering Committee who brought the *CitiesIPCC* conference together.³

At the ACT workshop, Professor Bai talked to participants about the work of the Fenner School in the field of sustainable cities.

'More than half of the world's population lives in cities, and the trend keeps growing at an unprecedented rate. In future we will need drastically different ways of planning, building and governing cities'.

3 <http://www.futureearth.org/news/xuemei-bai-awarded-volvo-environment-prize-2018>

6 Climate Risk and Equity

Future Earth Australia's second flagship program—Climate Risk and Equity—commenced in November with a two-day event held in conjunction with Climate-KIC Australia and the Sydney Environment Institute. The theme was Climate Science in Industry: Governance, Standards and Accessibility and the event was held at the University of Sydney.

Professor Andy Pitman, Director ARC Centre for Excellence in Climate Extremes and Dr Nick Wood, ESCC Hub stakeholder group chair, gave a joint presentation—Using climate science in industry: reflections from business/governance, and from scientific research. Dr Wood provided a historical overview of climate science and listed open sources of climate data currently available to industry. As an example of how climate data can affect business decisions, consider how an increasing number of hot days might deleteriously affect a proposed agriculture venture and its chance of attracting funding.

Professor Pitman explained the danger of climate extremes and compound events where factors interweave to produce transformative events that exceed the resilience of a system. Everyone wants climate models that tell them more specifically how their patch will be affected, but models are still only accurate to a continental scale. This leads to a knowledge gap between what climate models can do—in terms of climate projections—and the

information that business needs to assess financial risk. Bridging this gap will require a partnership between science, industry, government and other sectors.

The introductory lecture was followed by two panel discussions.

6.1 PANEL ONE: HOW IS CLIMATE SCIENCE BEING APPLIED IN INDUSTRY

There were two panels during the morning session with the first explaining how their industries currently use climate science—examples include how changes in weather directly relate to changes in electricity usage. The point was made that companies need a new planning approach to deal with the social aspects of climate risk rather than just the physical ones.

6.2 PANEL TWO: SCIENCE AND GOVERNANCE: STANDARDS, FUNDING, FAIRNESS

The second panel encouraged members to talk about standards within climate science and governance. Rosemary Bissett, Head of Sustainability Governance and Risk at National Australia Bank (NAB), noted that the bank is starting to integrate climate science into how they think: 'If we understand the risk, we can help





Kate Mackenzie, Climate-KIC Australia

customers with adaptation’. Agri-business in particular is changing with the climate. Financing low carbon transition and renewables capacity has become a key part of NAB’s climate strategy.

Ryan Crompton, General Manager, Modelling and Research Solutions at Risk Frontiers, described how ‘catastrophe loss modelling’ began in the late 1980s in America, but it was not until Hurricane Andrew made landfall in Florida in 1992 that the true power of such modelling was recognised. Catastrophe modelling by Risk Frontiers includes floods, cyclones, bushfires and hail storms.

Professor Lesley Hughes, Pro Vice-Chancellor at Macquarie University, a climate change researcher for 25 years and climate science communicator for the last 15 years, professed shock at the level of ignorance of basic climate science. She pointed out the importance of using strong enough language—not using ‘change’ but words such as ‘disruption’, ‘emergency’ and ‘crisis’. In her view, the problem is that not everyone cares about the

environment, but they care about other factors such as their own quality of life. Therefore, climate change needs to be addressed as an economic problem, a social problem, and a security problem.

6.3 INVITED EXPERT ROUNDTABLE: CLIMATE SCIENCE IN INDUSTRY— GOVERNANCE, STANDARDS AND ACCESSIBILITY: CHATHAM HOUSE RULES

By invitation only, FEA welcomed over 25 eminent national and international experts from government, industry and research to discuss a potential framework for a code of conduct for baseline science informing physical climate risk disclosure.

It was agreed that a coalition representing government, business and the research sector would be well placed to contribute such an initiative, to be led by Tayanah O’Donnell and Kate Mackenzie.

An advisory group will be assembled by Tayanah and Kate in early 2019 to determine the next steps in this important process. Participants were asked to consider how links between climate science and industry might be strengthened. The importance of a collaborative working relationship between government, industry and university was noted numerous times. Without such a partnership most felt that the likelihood of developing a climate science risk framework would be slim. Attendees acknowledged that the right people were in the room that day to see this happen. More information about this event is available on the Future Earth Australia website www.futureearth.org

7 Governance

Future Earth Australia was founded by the Australian Council of Learned Academies (ACOLA) and is hosted by the Australian Academy of Science. It is a partnership of Australian universities, research institutes, industry, government and civil society working to advance sustainability and support the Australian and Oceanic activities of Future Earth internationally.

Membership is open to government agencies, businesses, research institutions and community organisations engaged in sustainability programs or research in Australia.

In 2018, membership expanded to include a growing list of Australian universities and government agencies who have made commitments of three to five years.

A steering committee oversees the strategic direction of FEA, which currently comprises 11 leaders within the sustainability sector, working within business, government, academia and the community. In 2019, decision-making frameworks will be strengthened to enable FEA to respond to its rapid growth and demand.

FEA is also supported by an advisory council, chaired by Professor Ian Chubb AC FAA FTSE FACE FRSN.

The Executive Committee of the Academy's Council provides high-level oversight of FEA, and FEA works closely with the Academy, with particular focus on international engagement and science policy.



8 Strategic plan

8.1 VISION AND MISSION

The vision of Future Earth is **for people to thrive in a sustainable and equitable world**. For FEA, the vision is that **Australia and its people thrive in, and contribute to, a sustainable and equitable world**.

Future Earth Australia will achieve this by coordinating, enabling, performing and promoting research and practice that spans social and biophysical sciences, the humanities and the arts, to address the sustainability challenges facing Australia, our regional neighbours and the rest of the world, in close

collaboration with government, business and civil society groups.

8.2 SUSTAINABLE DEVELOPMENT GOALS

The United Nations Sustainable Development Goals (SDGs) call for action by all countries—poor, rich and middle-income—to promote prosperity while protecting the planet. They recognise that ending poverty must go together with strategies that build economic growth and addresses a range of social

Figure 6: Future Earth Australia Strategic Goals



needs including education, health, social protection, and job opportunities, while tackling climate change and environmental protection.⁴

Future Earth is enhancing sustainability by enabling and translating the SDGs from research to practice.

Research is centred around three broad themes:

1. Global sustainable development: how do we sustainably raise all of humanity to a decent standard of living?
2. Dynamic planet: how does the human–Earth system (defined as the intersection of societal and biophysical processes) function?

3. Transformations towards sustainability: how do we get from where we are now to the objective of global sustainability?

8.3 APPROACH

Future Earth Australia is building networks of experts from research, policy, business, NGOs and the community to conduct interdisciplinary solutions-oriented research and build lasting partnerships. Engagement activities will play an important role in maintaining these networks. These will include workshops, conferences and frequent telephone and

Figure 7: Future Earth Australia Objectives

| | Objective 1 Inspire and connect interdisciplinary and cross-sector initiatives | Objective 2 Establish open source products and services to facilitate member organisations build connections and access expertise | Objective 3 Provide opportunities for global and national knowledge sharing which builds innovation for sustainable futures | Objective 4 Build and mobilise capacities to coproduce knowledge across socio-cultural, generational and geographic boundaries |
|--------------------------------|--|---|---|---|
| FEA member service provision | Strategy 1.1 Facilitate establishment of FEA collaborative research programs to address combinations of SDGs | Strategy 2.1 Facilitate member access to data sharing and analytical platforms and evaluation tools in support of SDGs | Strategy 3.1 Host forums and other events for members and public to debate and learn about FEA focal challenges | Strategy 4.1 Host interdisciplinary and local knowledge forums to provide new understanding of SDG challenges |
| | Strategy 1.2 Facilitate integration of Member projects into collaborative research programs and other initiatives | Strategy 2.2 Facilitate member participation in national and international sustainability initiatives | Strategy 3.2 Strengthen Future Earth's Knowledge Action Network approach within Australia and facilitate member participation | Strategy 4.2 Provide professional development activities and exchange mechanisms to support next generation leaders |
| | Strategy 1.3 Support integration, synthesis and communication within FEA collaborative research programs | Strategy 2.3 Facilitate peer review, fact checking and continuous improvement across FEA initiatives | Strategy 3.3 Facilitate the incorporation of scenario planning, risk assessment and public ideas into FEA initiatives | Strategy 4.3 Promote FEA Brand and implement best practice communication to unify, nurture and reward members |
| FEA operations and performance | Strategy 1.4 Build FEA's membership base to access the capabilities needed to deliver research benefits for members and against SDGs | Strategy 2.4 Develop and implement a monitoring and evaluation system to review, assess and improve all FEA initiatives | Strategy 3.4 Engage regional knowledge leaders, governments, businesses and communities to build FEA's role as the regional node for Future Earth | Strategy 4.4 Reflect the aspirations of Future Earth within the governance structures and behaviours of FEA |
| | Performance Indicator 1 At least four collaborative research programs are operational by 2022, advancing solutions to SDGs and delivering to member expectations | Performance Indicator 2 Evidence that FEA has increased its member participation in national and international sustainability initiatives of world-class standard | Performance Indicator 3 Evidence that FEA initiatives are effectively bringing researchers and stakeholders together to advance adoption of SDG solutions | Performance Indicator 4 FEA is seen as an authoritative source of knowledge, making tangible advances towards the achievement of SDGs |

⁴ <https://www.un.org/sustainabledevelopment/development-agenda/>

email exchanges. Regional Australia will be a focus in engagement activities to ensure inclusivity.

Future Earth Australia will coordinate, enable, promote and perform generation and application of knowledge—spanning social, biophysical and technological sciences, the humanities and the arts, local and other forms of knowledge—to address the sustainability challenges facing Australia, our regional neighbours and the rest of the world.

The strategic goals of Future Earth Australia are detailed in Figure 6, and align with our objectives as outlined in Figure 7.

8.4 PRIORITISATION OF PROJECTS

To select new projects in a rational and equitable manner, FEA steering committee members are asked to complete a prioritisation matrix in which potential projects are ranked according to weighted criteria.

Potential projects are ranked according to six pre-weighted criteria: three concerned with strategic objectives and likely impact and three concerned with project feasibility. The scores are then averaged and ranked. This matrix, and application process, will be refined and implemented in 2019.

8.5 PATHWAY TO IMPACT

For all activities, FEA adopts a pathway to impact approach. This means that at any stage of the project, members and the executive may be provided with a clear update about what has been achieved and what has yet to happen. Figure 8 shows the steps to be taken to achieve short-term impacts and long-term outcomes. The text in this diagram refers to the general activities and processes that are needed to successfully operate FEA. In addition, each separate project will follow this pathway to achieve its specific impacts and outcomes.

Figure 8: FEA's Pathway to impact



9 Steering Committee

Members of the steering committee during 2018

| | |
|---------------------------------------|---|
| Professor Karen Hussey, Co-chair | Centre for Policy Futures, University of Queensland |
| Dr Mark Stafford Smith, Co-chair | CSIRO |
| Dr John Finnigan FAA, Chair | National Committee for Earth System Science |
| Professor Lesley Hughes | Department of Biological Sciences, Macquarie University |
| Professor Iain McCalman AO FAHA FASSA | Sydney Environment Institute, University of Sydney |
| Professor Jago Dodson | RMIT University |
| Professor Brett Bryan | Deakin University |
| Dr Jessa Rogers | University of New England |
| Mr Adrian Enright | Qantas Group Corporate Partnerships Manager |
| Dr Lorraine Stephenson FTSE | |
| Dr Hamish Clarke | University of Wollongong |

10 Advisory Committee

Members of the advisory council include

| | |
|---|--|
| Professor Ian Chubb AC FAA FACE FTSE, Chair | Former Chief Scientist of Australia |
| Professor Kate Auty | ACT Commissioner for Sustainability and the Environment and a Professorial Fellow with the University of Melbourne |
| Mr Howard Bamsey | Executive Director Green Climate Fund |
| Mr Simon Corbell | Former ACT Minister for Environment and Climate Change |
| Mr Adam Fennessy | Partner at EY and former Secretary Department of Environment, Land, Water and Planning, Victoria |
| Ms Penelope Figgis AO | Vice Chair, for Oceania of the IUCN World Commission on Protected Areas |
| Ms Virginia Haussegger AM | Director 50/50 by 2030 Foundation Institute for Governance and Policy Analysis (IGPA), University of Canberra |
| Ms Emma Herd | CEO Investor Group on Climate Change |
| Mr Dermot O’Gorman | CEO World Wildlife Fund – Australia |
| Professor Will Steffen | Emeritus Professor at the Australian National University (ANU), Senior Fellow at the Stockholm Resilience Centre, Sweden |
| Ms Angharad Wyne-Jones | Head of Participation at Arts Centre Melbourne |

11 Partners and contributors in 2018

Future Earth Australia would like to thank everyone who contributed to the success of our programs in 2018.

URBAN SYSTEMS TRANSFORMATION: SUSTAINABLE CITIES

| | |
|----------------------------------|---|
| Melanie Farmer | Office of Research, Engagement, Development, Western Sydney University |
| Associate Professor Juan Salazar | Director of Research, Institute for Culture and Society, Western Sydney University |
| Professor Michelle Leishmann | Head of the Centre for Smart Green Cities, Macquarie University |
| Professor Helen Lochhead | Dean of Faculty Built Environment, UNSW |
| Professor Christopher Pettit | Director of the City Analytics Lab, UNSW |
| Dr Simon Pinnegar | Associate Professor of City Planning, UNSW |
| Professor Deo Prasad | Executive Officer of the CRC for Low Carbon Living |
| Guy Barnett | CSIRO |
| Professor Xuemei Bai | Professor of Urban Environment and Human Ecology, Australian National University |
| Dr Kate Auty | Commissioner for Sustainability and the Environment |
| Professor Barbara Norman | Director, Canberra Urban and Regional Futures, University of Canberra |
| Dr Hitomi Nakanishi | Associate Professor, School of Design and Built Environment, University of Canberra |
| Susan Heylar | ACT Council of Social Services |
| Jennifer Hutcheon | Cities Transformation Taskforce |
| Professor Jeff Humphreys | School of Earth and Environmental Sciences, University of Queensland |
| Professor Paul Burton | Director, Cities Research Institute, Griffith University |

CLIMATE RISK AND EQUITY

| | |
|-------------------------|--|
| Kate Mackenzie | Director, Policy, Finance & decision metrics, Climate-KIC Australia |
| Dr Tanya Fiedler | Business School, University of Sydney |
| Professor Any Pitman | Director ARC Centre for Excellence in Climate Extremes |
| Dr Nick Wood | ESCC Hub Stakeholder Group Chair |
| Karl Braganza | Head of Climate Monitoring, Environment and Research Division, Bureau of Meteorology |
| Amber Johnston-Billings | Director of Climate Change and Sustainability, KPMG |
| John Manning | Senior Credit Officer, Moody's Investors Service |
| Zoe Whitton | Head of ESG Research, Citigroup |
| Professor Lesley Hughes | Pro Vice-Chancellor (Research Integrity and Development), Macquarie University |
| Ryan Crompton | Director of Modelling & Research, Risk Frontiers |
| Mark Crosweller | Head of National Resilience Taskforce, Department of Home Affairs |
| Rosemary Bissett | Head of Sustainability, Governance and Risk, National Australia Bank |
| Peter Stoker | AMC Consultants |

| | |
|-----------------|---|
| Karl Mallon | Director, XDI Climate Risk Pty Ltd. |
| Andrew Stringer | CER auditing expert |
| Rowan Douglas | Leader Science, Capital & Policy practice, Willis Group |

INTRODUCING FUTURE EARTH AUSTRALIA EVENTS

| | |
|-------------------------------------|--|
| Professor Tim Smith | Executive Dean for the Faculty of Arts, Business and Law, University of the Sunshine Coast |
| Professor David Hamilton | Deputy Director, Australian Rivers Institute, Griffith University. |
| Professor Jago Dodson | Director, Centre for Urban Research, RMIT University |
| Associate Professor Lauren Rickards | Co-leader, Climate Change and Resilience Research Program, RMIT University |

2018 AUSTRALASIAN EARLY CAREER RESEARCHER NETWORK (AECURN) QUEENSLAND SYMPOSIUM: TRANSFORMATION IN URBAN ENVIRONMENTS

| | |
|---------------------------|--|
| Professor Paul Burton | Director, Cities Research Institute, Griffith University |
| Dr Ed Morgan | Research Fellow, Griffith University |
| Dr Deanna Grant-Smith | Senior Lecturer, QUT |
| Dr Ryan McAllister | Behaviour Economist and Principal Research Scientist, CSIRO |
| Dr Johanna Nalau | Lecturer, Griffith University |
| Dr Rachael Cole-Hawthorne | Senior Policy Officer, Department of Environment and Science |

INTEGRATION ACROSS THE SDGS AND THE ROLE OF RESEARCH

| | |
|-------------------------------------|---|
| Dr Tahl Kestin | Sustainable Development Solutions Network Manager, SDSN Australia, New Zealand & Pacific, Monash University |
| Professor Jeffrey Sachs | Columbia University |
| Dr Mark Stafford Smith | Future Earth Australia |
| Professor Brett Bryan | Professor of Global Change, Environment and Society, Deakin University |
| Associate Professor Lauren Rickards | Co-leader, Climate Change and Resilience Research Program, RMIT University |
| Professor Dave Griggs | Adjunct Professor, Sustainable Development, Monash University |
| Professor John Thwaites | Chair, SDSN Australia, New Zealand and the Pacific |
| Dr Caroline Lambert | Director, Research, Policy & Advocacy, International Women's Development Agency |
| Nikki Jordan | Acting Team Leader, Sustainability Integration, City of Melbourne |
| Aisha Reynolds | Climate Works Australia |

EARLY CAREER RESEARCHER AND PRACTITIONER FORUM

| | |
|-----------------------------|---|
| Tamara Rouse | External Relations, UNSW |
| Associate Professor Ron Cox | Network Convener, ACCARNSI |
| Chris Lee | CEO, Climate-KIC |
| Dr Chris Hatherly | Director of Policy, Australian Academy of Science |
| Doreen Erhart | Lead, Climate Change and the Great Barrier Reef, Program Manager, QLD Climate Resilient Councils. |

12 Members and partners

Future Earth Australia is a partnership of Australian universities, research institutes and industry, government and civil society.



13 FEA team



DIRECTOR, DR TAYANAH O'DONNELL

Tayanah is an experienced science leader, communicator and collaborator, having worked in research and leadership roles in private practice, government and academia for 15 years. She has particular expertise in the legal, political and cultural aspects of climate change.

She is a qualified lawyer and human geographer and is highly sought after for her ability to bring people from all walks of life together. Her passion is in working towards a better future for current and future generations and enabling intergenerational equity and justice.



RESEARCH AND POLICY OFFICER, DR JOANNE BANKS

Jo is an experienced science writer, editor and researcher with experience working in the Australian Government, NGOs and academia. Jo's subject matter expertise is environmental science with a particular focus on the marine environment. She has written widely on marine pollution, agricultural science, biodiversity, climate change and government policy.



POLICY AND EVENTS COORDINATOR, SARAH CROWE

Sarah has over 10 years of administration experience and keeps Future Earth Australia running like a well-oiled machine. Sarah has been involved in some of the Academy's biggest events such as the annual Science at the Shine Dome symposium and an extensive three-day political engagement event at Parliament House.

