



An effective and integrated knowledge cycle is essential to underpinning decisions that will achieve Sustainable Australian Cities and Communities.

Australian Cities and Communities are facing a massive period of transformation and opportunity. The trajectory of these cities and communities will have a huge impact on the achievement of the Sustainable Development Goals. To ensure that this impact is positive, it is essential that relevant knowledge is co-produced and harnessed to inform the decisions impacting on urban transformation.

Future Earth Australia (FEA) was established in 2016 with the support of the Australian Council of the Learned Academies. In March 2018, FEA adopted sustainable cities and communities as a priority focus area. On 25 May 2018, cross-disciplinary researchers from across Australia were brought together by FEA to begin envisioning how knowledge could support Australia's transformation to sustainable urban systems.

A key outcome of the symposium was the consensus that FEA lead a nationwide process of engaging researchers and stakeholders. This consultative process will develop a strategic approach to improving the knowledge cycle underpinning the sustainable development of Australia's cities and communities over the coming decades.

Key Points of Agreement

- A strategic approach to improving the urban sustainability knowledge cycle will:
 - o identify and address gaps, priorities and opportunities for knowledge co-production
 - o demonstrate integration across multiple urban goals and scales
 - o promote collaboration between sectors, institutions and disciplines
 - o improve the application of knowledge in urban decision-making processes
 - o develop enhanced and sustained investment in urban research and capabilities
 - o enhance links to international urban knowledge networks and capabilities
- The strategic approach will incorporate:
 - o a national strategic plan outlining a decadal pathway towards a long-term vision
 - o a community of practice across sectors and disciplines
 - o knowledge exchange for sharing existing and emerging knowledge
 - o collaborative projects with immediate impact
- Future Earth Australia, bringing a national, strategic and independent perspective, is well positioned to:
 - o drive the overall co-development and implementation of the strategic approach
 - o administer a co-design process with stakeholders, supported by a community of practice
 - o ensure effective communication and engagement on progressive outcomes

The Challenge of Sustainable Futures for Urban Systems

A great challenge to the realisation of high level sustainability goals lies in effectively co-producing knowledge to inform decision-making.

Urban sustainability knowledge moves through a cycle of production, strategy, application and experience. Throughout this cycle there are obstacles in crossing boundaries: across sectors, across spatial scales and across decision making levels; and in translating both new and existing knowledge into practical application.

The recently endorsed UN Sustainable Development Goals (SDGs) outline a collaborative global roadmap toward a more sustainable and equitable future, aiming for full implementation by year 2030. SDG 11 and the related UN New Urban Agenda (Habitat III) directly aspire to sustainable cities and communities, but it is also clear that cities contribute to all 17 of the Goals.



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Human communities need to transform into more sustainable and equitable places to live. This is generally agreed across sectors and scales by researchers, practitioners and policy makers. The Australian Commonwealth Government and many of Australia's cities and communities have expressed their commitment to sustainable urban development through policies, plans and vision statements¹. However, preliminary research² by members of Future Earth Australia identifies that gaps and barriers in the knowledge cycle impede implementation of these plans.

Cities and communities are made up of complex social, cultural, physical, technology, economic, resource and environmental systems. These systems are dynamic and interrelated with changes in one system affecting other systems and evolving over time to have, sometimes unintended, results.

This complexity leads to considerable obstacles in co-producing knowledge to achieve integrated sustainable development across different goals, strategies and developments. This can include translating broad goals such as the UN SDGs into the most relevant vision and goals for our cities, and up-scaling precinct level success stories to citywide transformations.

A **strategic approach to improving the urban sustainability knowledge cycle** would greatly assist in overcoming these barriers. It would harness a unique opportunity to achieve impact across multiple sustainable development issues at the same time. Urban transformation, drawing from enhanced knowledge sources and capabilities, would represent not just a goal in itself, but the opportunity for the simultaneous achievement of multiple and integrated sustainable development outcomes.

¹ Examples include: Commonwealth of Australia (2016) Smart Cities Plan, Victorian Government (2017) Plan Melbourne 2017-2050, Greater Sydney Commission (2018) Greater Sydney Region Plan: A Metropolis of three cities, Brisbane City Council (2013) Brisbane Vision 2031, ACT Government (2012) ACT Planning Strategy, Northern Territory Government (2012) Greater Darwin Plan, Hobart City Council (2007) Hobart 2025: A Strategic Framework, WA Government (2015) Perth and Peel@2.5million by 2050; SA Government (2017) 30 Year Plan for Greater Adelaide

² Webb, R., Bai, X., Smith, M.S. et al. *Ambio* (2018) 47: 57. <https://doi.org/10.1007/s13280-017-0934-6>

Collaboration and coordination is key to achieving the full potential of knowledge co-production, not only between researchers, but also with government, industry and civil society. Through this collaboration, knowledge gaps and opportunities for urban transformation can be effectively identified and addressed.

Improving the knowledge cycle for Sustainable Cities and Communities

A strategic approach to improving the urban sustainability knowledge cycle should integrate four key pillars. These are a national strategic plan, a national community of practice, urban knowledge exchange, and collaborative projects and initiatives with immediate impact.



The strategic approach to improving the knowledge cycle for Sustainable Australian Cities and Communities will rest on four integrated pillars: a national strategic plan, a national community of practice, enhanced urban knowledge exchange and collaborative projects and initiatives.

The **national strategic plan** is ambitious in scope, seeking to represent the knowledge needs of urban cities and communities and their associated regions across Australia. The plan will look toward 2030 and beyond and also outline specific actions starting now and for the next decade. It will link in to international experiences including through the Future Earth networks¹. The plan will co-create a shared vision for improving the urban sustainability knowledge cycle to better achieve global and local goals and visions.

The national vision will connect shared high-level values such as the sustainable development goals and existing city visions. It will serve as a uniting purpose and direction for collaborative action and contribute to key indicators of success.

The strategic plan will include identification and understanding of urban knowledge issues, gaps, priorities and proposed responses, taking account of and building on the many important but primarily sectoral-based existing urban research programs and activities.

This collaboration will include local and state government practitioners, the private sector, NGOs, civil society, and the research community, and will aim to include a national roadshow and consultation process. The next stage of the co-design process will begin in August 2018.

The national strategic plan process will be supported by an advisory reference group, drawn from a community of practice. It will guide the ongoing development of the three further pillars of knowledge co-production: a national community of practice, urban knowledge exchange and collaborative projects and initiatives.

A **national community of practice** will promote collaboration across multiple sectors, scales and disciplines. It is expected that the community of practice will have an ongoing role in supporting collaborations, knowledge exchange and other activities.

¹ Future Earth Urban, <http://futureearth.org/future-earth-urban>

An enhanced approach to **urban knowledge exchange** will build on existing sectoral platforms and initiatives, with an emphasis on practice and solutions-oriented cross-sector and cross-disciplinary knowledge. The approach will draw on existing experience of what does and does not work, and bring together knowledge from a wide variety of sources including quantitative and qualitative academic research, community narratives, case studies of urban change, shared visions and more.

Opportunities for **collaborative projects and initiatives**, both short and long term, will be identified and leveraged through the community of practice, the national strategic plan and the urban knowledge exchange. Together these activities will provide a key resource for the community of practice and form an evolving evidence base for informing and inspiring policy and practice.



Sharing ideas at the Australian Urban Systems Transformation Symposium held in Canberra.

The role of Future Earth Australia

Future Earth Australia (FEA) was founded by the Australian Council of Learned Academies and is hosted by the Australian Academy of Science. It supports the Australian and Oceanic activities of Future Earth internationally.

Its overall objective is to develop direct and facilitated research Initiatives for significant Australian and international sustainable development and transformation issues. While many of the FEA Secretariat remain research active, FEA does not generally aim to do core research itself, but enables and facilitates the collaborative research by others. FEA brings a national, strategic and independent perspective to this role, along with strong links internationally through Future Earth and other relationships. FEA also provides an avenue for synthesis of research.

Improving the knowledge cycle for Sustainable Australian Cities and Communities is FEA's first priority focus area. FEA will outline a strategic, long-term national approach to urban sustainability research. This approach will ensure effective solutions and sufficient capability to guide urban development over the coming decades.

The Future Earth global network ensures effective communication and engagement nationally and globally, with the aim of linking funding, knowledge and impact.

FEA Members

