Global perspective on future cities and resilience initiatives

Guy Barnett, CSIRO | 12 December 2019

Scene setting

The emerging *'science of cities'* is about creating opportunities for experimentation, bringing together multiple stakeholders and sectors, to address urban challenges and foster learning in real-world city contexts.

Why focus on cities?

Major drivers of change

Thinking about the future

Urban resilience approach

Global research initiatives

Five key lessons for Darwin

Why focus on cities?

Principal human habitat

- 89% of Australian's live in cities and towns
- Three cities in top 10 most liveable in the world

Engines of economic growth

- Property is our biggest industry (13% of GDP)

Significant sustainability impacts

- Responsible for 70% of global carbon emissions

Major drivers of change

Climate change

Demographics

Decarbonisation

Urban Densification

Explosion of data

Digital technologies

Global competitiveness

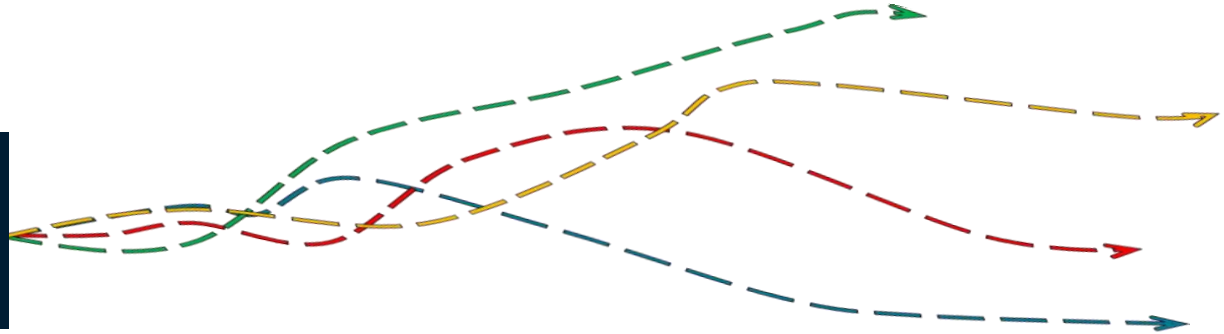
Social inclusion and equity

Circular economy

and so on…

Thinking about the future

This is not about predicting the future,
but engaging people in thinking deeply about
complex issues, imagining new possibilities,
and making better choices today.



Rise of the ‘eco/smart’ city

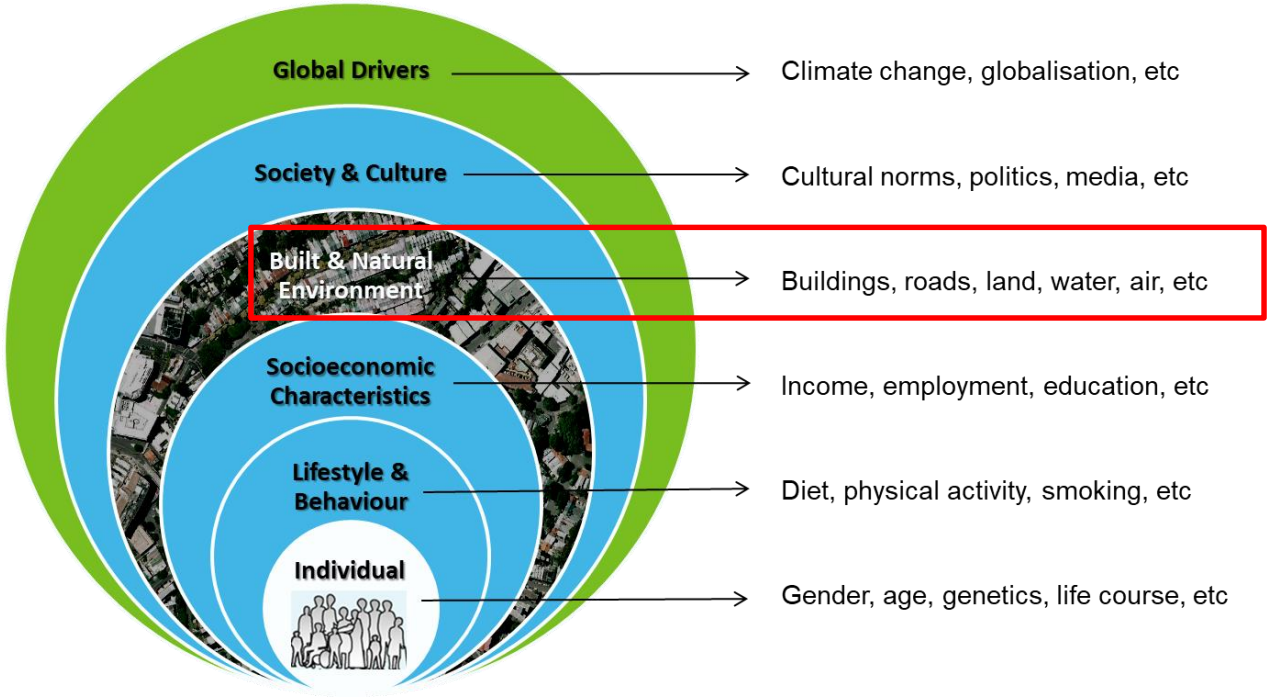
Masdar ecocity, UAE

- Original goal of building the world’s first zero-carbon city in the UAE desert

New wave of smart cities

- Bill Gates and Microsoft, Belmont, Arizona
- Google company Sidewalk Labs, Toronto, Canada

Cities are about people



Urban resilience approach

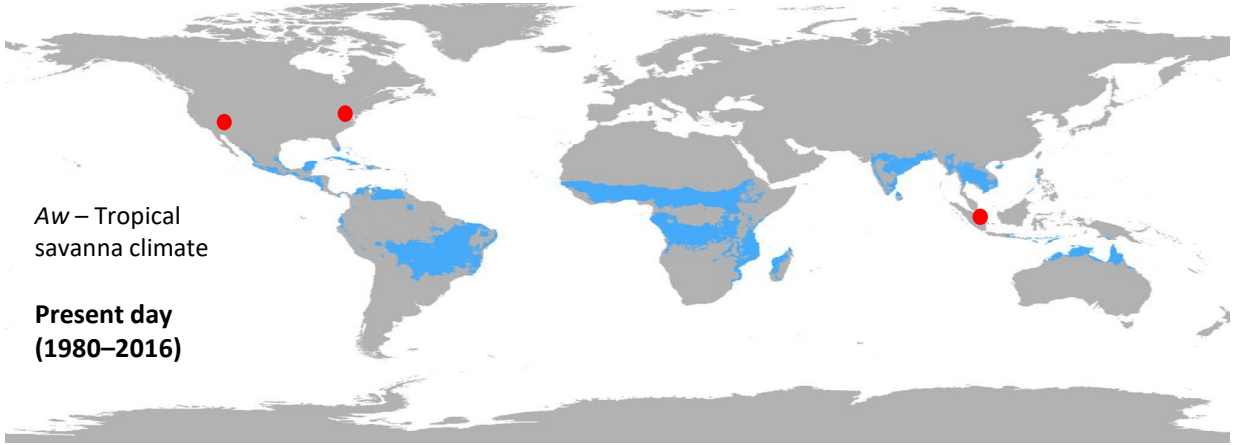
Cities as complex adaptive systems

- Highly dynamic, connected and open
- Tight mosaic of land tenure, cover, and use
- Legacies, lag effects, strong path dependencies

Focus is more about the journey than endpoint and the system properties that confer resilience

Global research initiatives

- C40 Cities and 100 Resilient Cities initiative
- Cooling Singapore, US EPA, ASU CAP-LTER, etc



Tools for Urban Adaptation Assessments

Britta Bierwagen, Susan Julius, Phil Morefield, Jordan West




The views expressed in this presentation are those of the author and they do not necessarily reflect the views or policies of the U.S. Environmental Protection Agency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Dr Conrad Philipp
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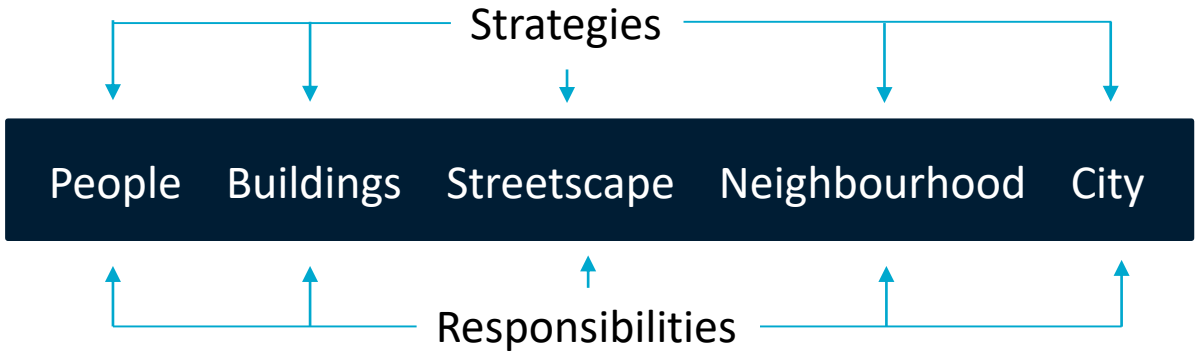
From research into practice

- Science of UHI's has been settled for long time
- Combination of heat mitigation and adaptation
- Multi-scale, integrated UHI responses are rare



Lessons learnt that are informing the Darwin Living Lab and activities

Context – Integration – Engagement – Measurement – Scaling

1 - Context is critical

Bespoke solutions rather than ‘cookie cutter’, as what works in other cities may not work in Darwin

- Suitable for current and future climates
- Reflect local cultural diversity and knowledge
- Respond to geographical constraints/opportunities

2 – Focus on integration

Across different spatial scales, knowledge domains, the urban delivery chain, stakeholders and sectors

- Building, street, neighbourhood, entire city, region etc
- Planning, design, construction, occupation and renewal
- Community, business, industry, research, policy-making

3 – Strong engagement

Cities are made up of multiple stakeholders, often with different values, beliefs, agendas and criteria

- Foster diverse participation and shared understanding
- “co-production,” but what does this entail in practice?
- Equity considerations and exploring societal impacts

4 – Measuring change

"If you can't measure it, you can't manage it?"

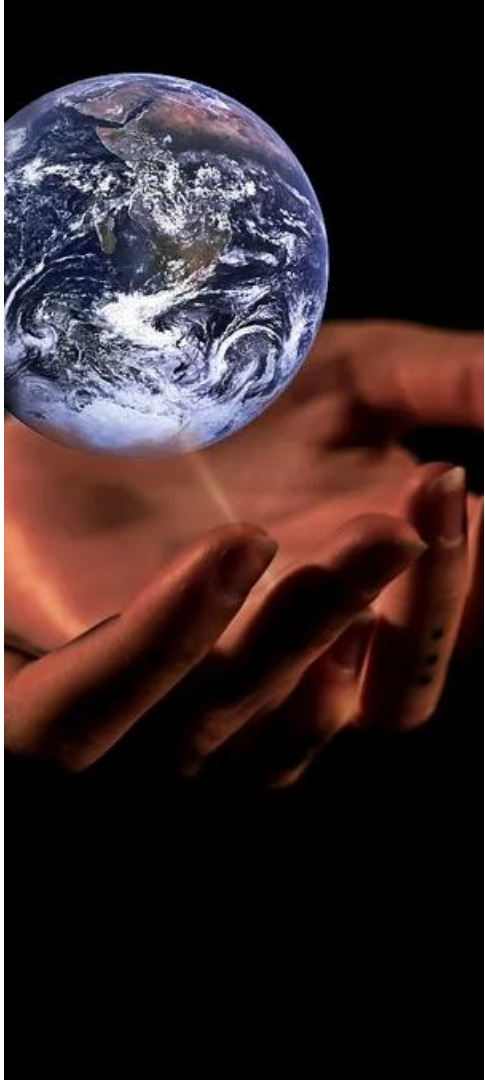
Quote: Peter Drucker

- Data explosion, enabling new wave of urban science
- Better city-scale metrics – only the essential variables?
- More focus on feedbacks that reveal system dynamics

5 – Scaling for impact

Demonstrations are about de-risking and accelerating innovation and ‘moving to scale’

- Need to be supported by a strong ‘theory of change’
- Different models – resources, knowledge transfer, etc
- Share everything you learn – good, and especially bad



Thank you

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