



Urban Sustainability and Resilience - Reflections

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In the Anthropocene - the context has changed

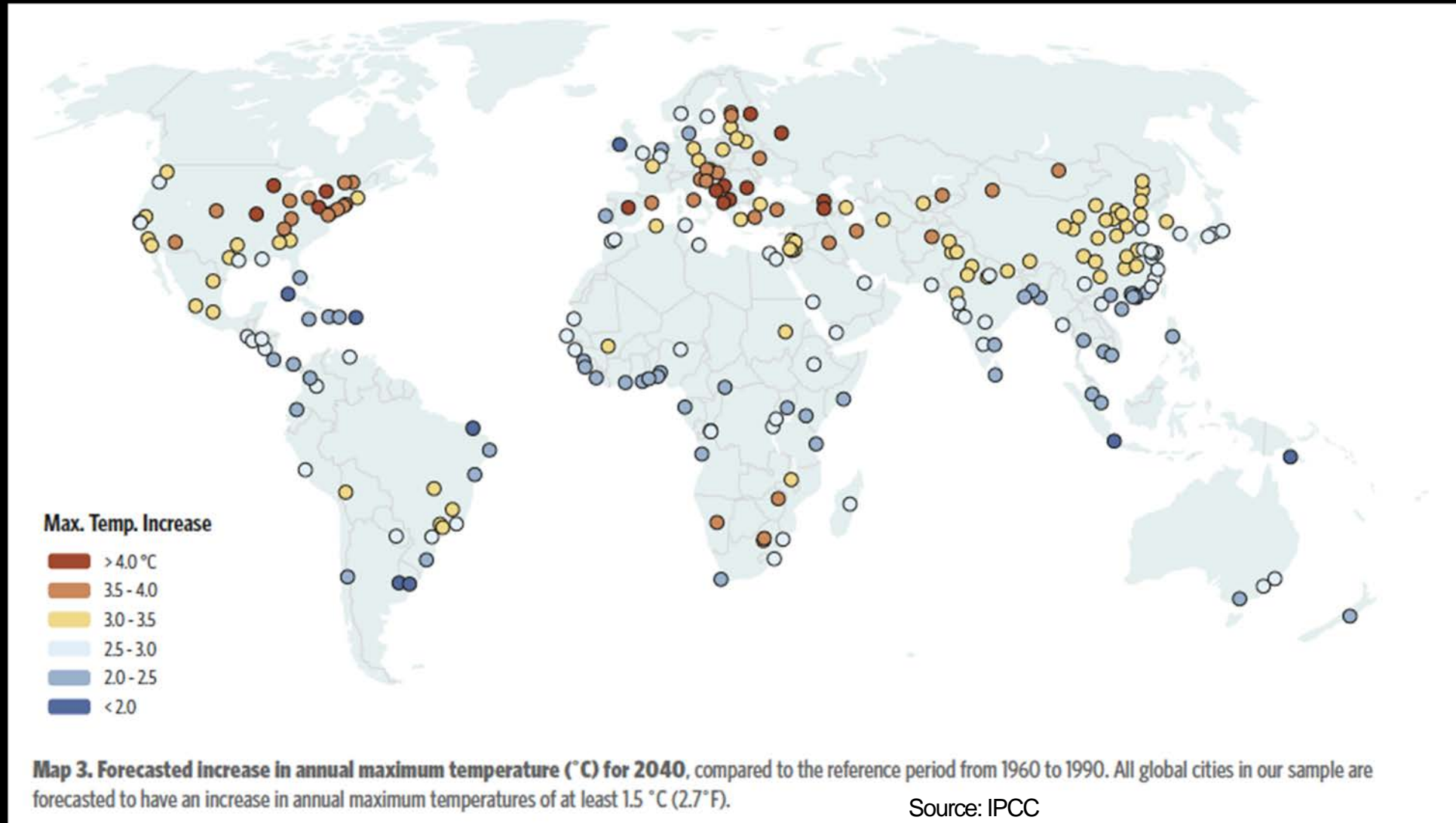


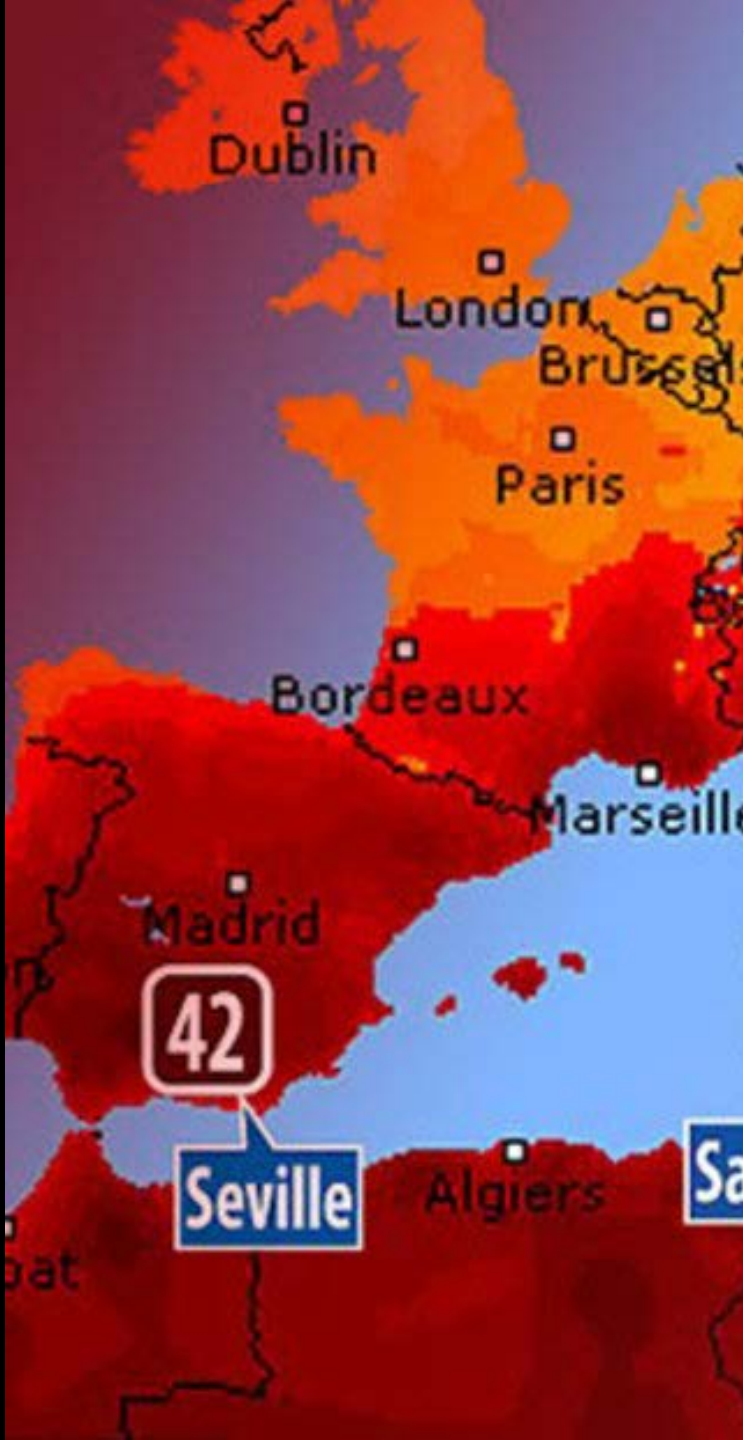
Uncertainty

Complexity

Non-linearity

Urban Heat waves





News

Red alert: Heatwave Lucifer grills Europe as study says heat may kill 150K Europeans a year by 2100

Published time: 5 Aug 2017 | 12:33 GMT



Reuters /

Ten southern and central European countries have declared a red alert after heatwave 'Lucifer' caused temperatures to skyrocket over 40C, with scientists warning that the extreme heat could end up killing 152,000 people a year by 2100.





Response paradigms to Urban Challenges



A "Sponge city" refers to a city where its urban underground water system operates like a sponge to absorb, store, leak and purify rainwater, and release it for reuse when necessary.

Global Goals



17 GLOBAL GOALS 7 BILLION WORLDWIDE



Goal 11.

**Make cities and human settlements inclusive, safe,
resilient and sustainable**

...

HABITAT III CONFERENCE
**THE NEW
URBAN AGENDA**



United Nations

...



New Urban Agenda

- *Resilience* mentioned 17 times
- *Sustainability* 11 times
- *Resilience and sustainability* mentioned together 8 times



New Urban Agenda

*.....the way cities are planned, financed, developed, built, governed, and managed has a direct impact on **sustainability and resilience** well beyond the urban boundaries. (p.9)*

Common (narrow) interpretation

Sustainability – *increased efficiency in resource use*

Resilience – *capacity to recover from disaster*

SCOTT KELLY/NASA



Washington DC at night.

Scientists must have a say in the future of cities

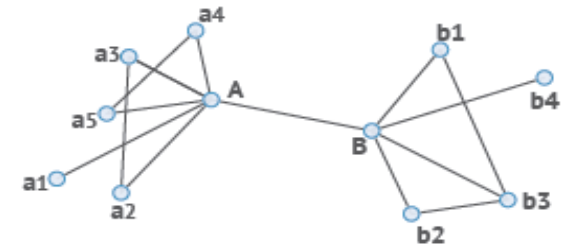
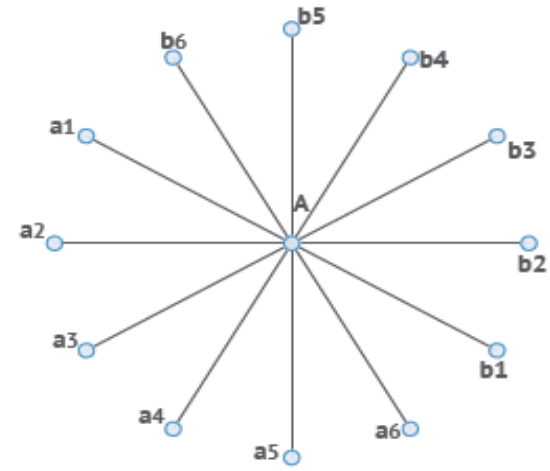
Timon McPhearson, Susan Parnell, David Simon, Owen Gaffney, Thomas Elmqvist,
Xuemei Bai, Debra Roberts & Aromar Revi

Nature **538**, 165–166 (13 October 2016) doi:10.1038/538165a

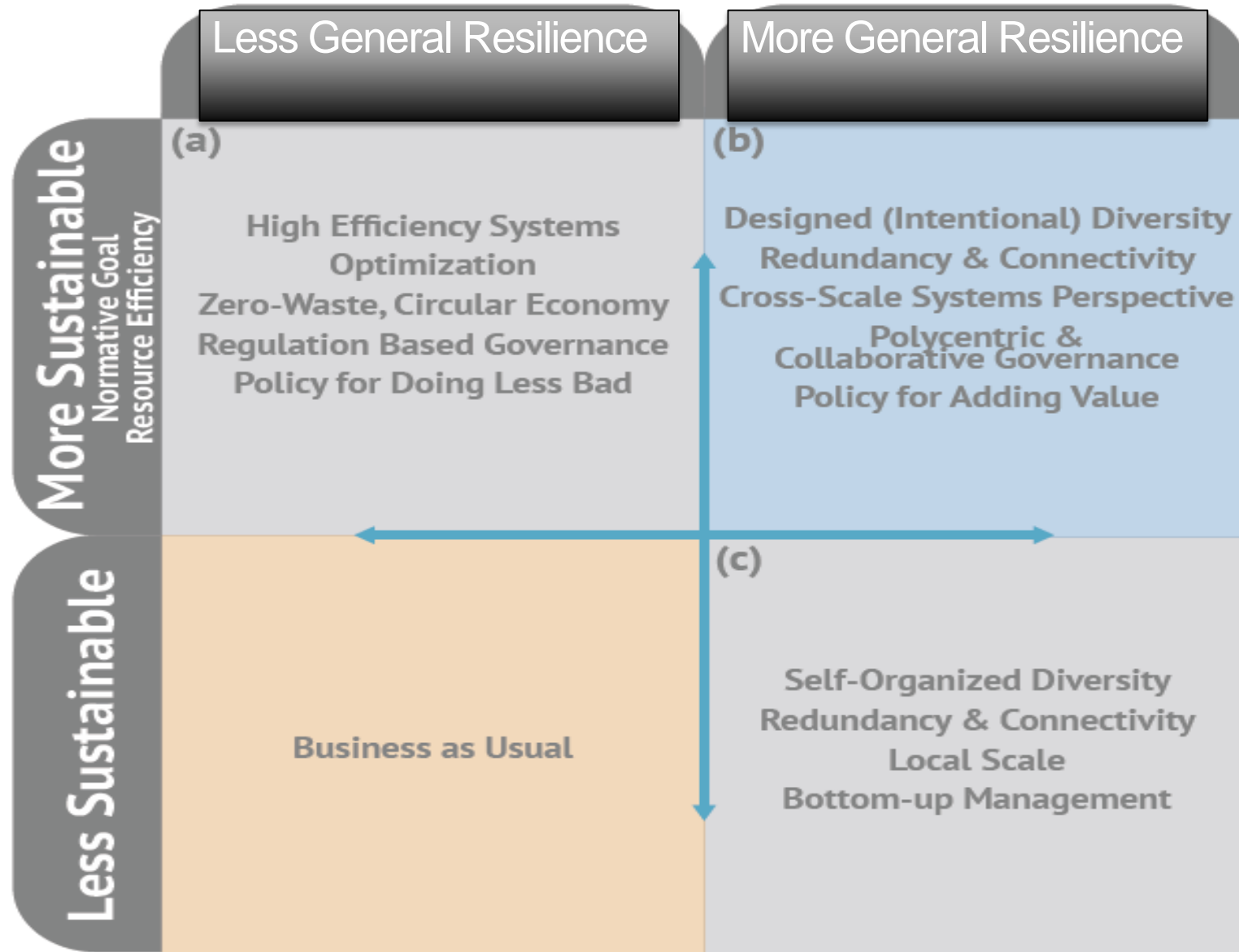


Self-Organized Network
High Redundancy

Sustainability



Designed Networks
Low Redundancy



Sustainability

Manage resources in a way that guarantees welfare and promotes equity in current and future generations

Normative goal

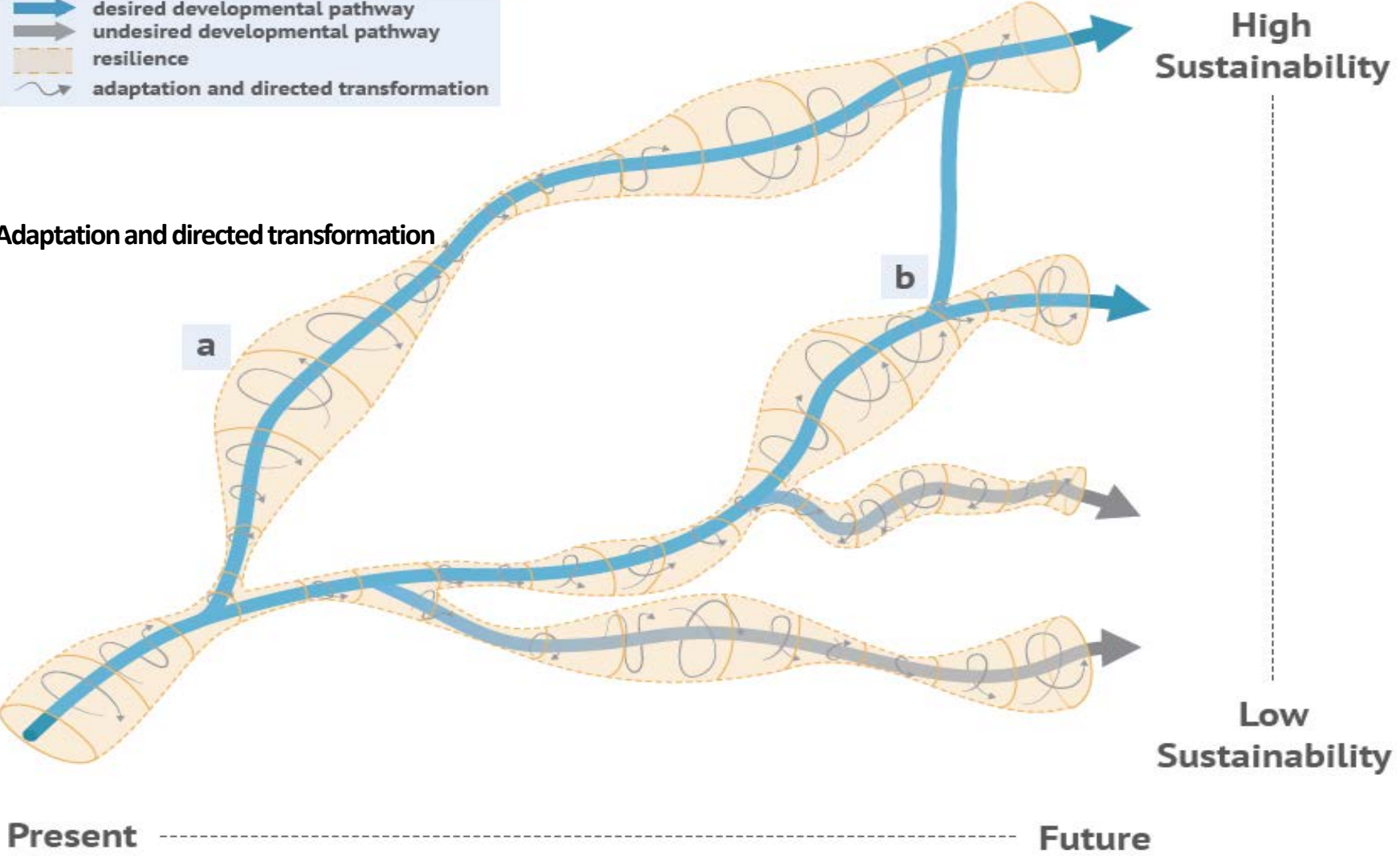
Resilience

The capacity of a system to absorb disturbance and reorganize while undergoing **change** so as to still retain essentially the same function, structure and feedbacks

Non-normative attribute of a complex system

Urban development through the interplay between gradual and abrupt change

- ➔ desired developmental pathway
- ➔ undesired developmental pathway
- ▭ resilience
- ⤿ adaptation and directed transformation



Old Highline rail road New York City

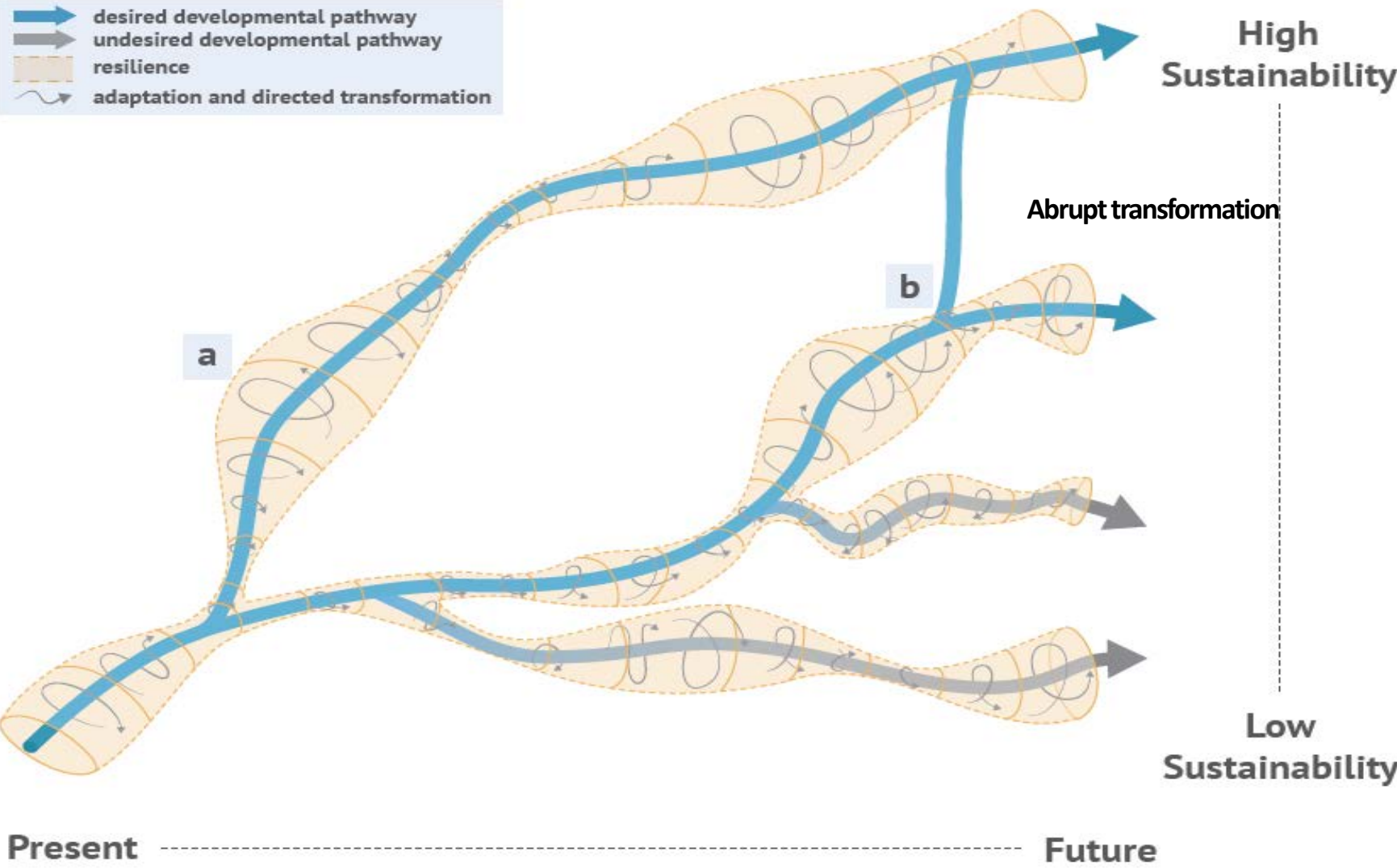


Singapore - Green cover 1980 - 36%, 2016 - 47%

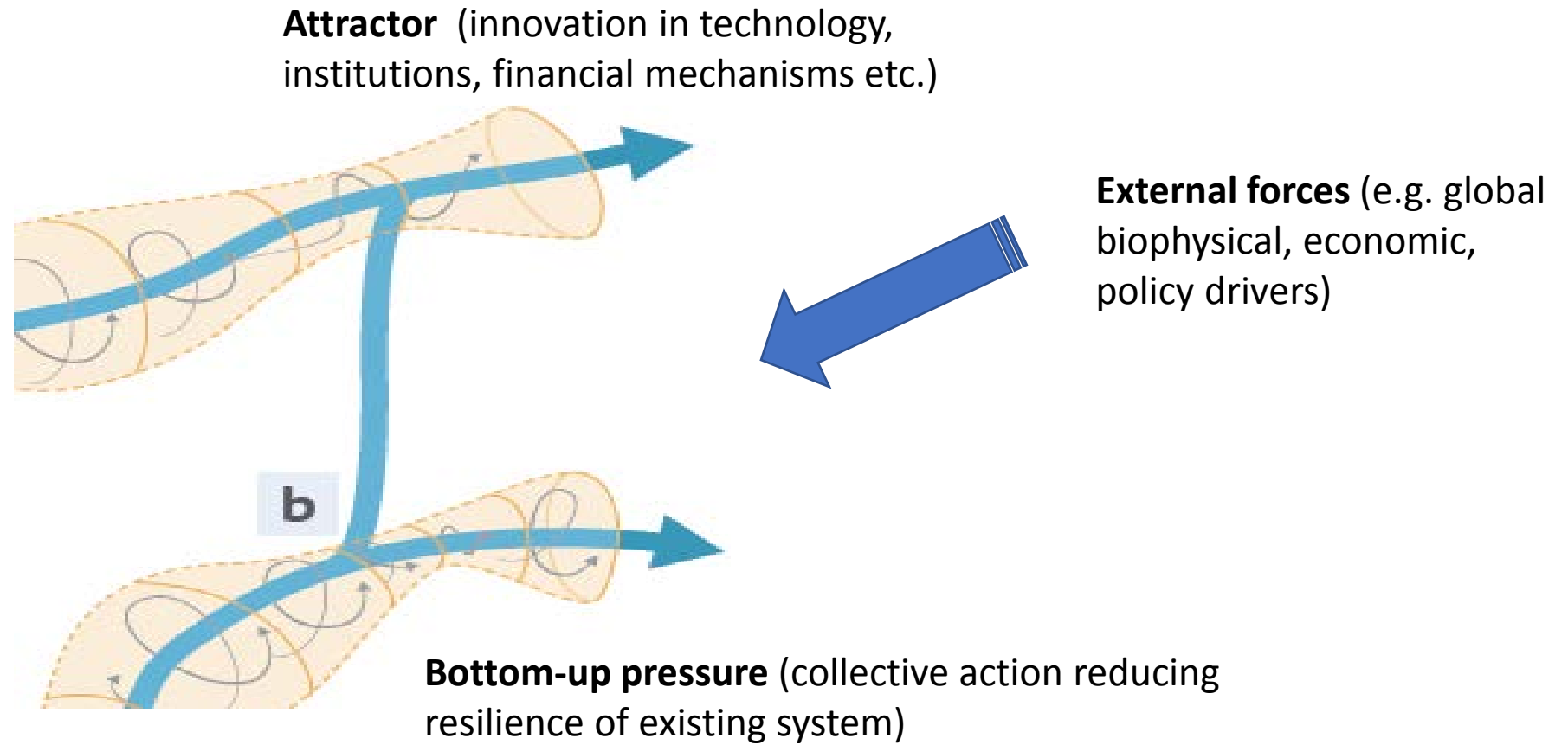


Singapore - rated as the most healthy city in the world.
Bloomberg rankings 2015.

Urban development through the interplay between gradual and abrupt change



Abrupt transformation







Getting Started with the SDGs in Cities

A Guide for Stakeholders

July 2016

The Baltimore example



Cities are gaining power in global politics — can the UN keep up?

SEPTEMBER 29, 2017



Rethinking the status of cities within the UN System

- Redesign of UN Urban agenda (incl. UN Habitat)
 - UN-Urban – coordinate UN urban work
 - New Global Trust Fund for Urban sustainability
 - New governance including local government representatives
- WHO and FAO adopting urban agendas
- IPCC developing a stronger focus on cities

SOON TO BE PUBLISHED OPEN ACCESS BOOK

Urban Planet

www.cambridge.org

More than 100 scientists, architects, journalists, artists, designers, activists and youth contributing with a diversity of voices and perspectives on the challenges and solutions of the Urban Planet.

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