resilience brokers

Systems thinking for cities

Stephen Passmore

Chief Executive Officer

Working to enable 5 billion people to live safe, healthy and fulfilling lives by 2030

resilience brokers capital

resilience.io

ecological sequestration trust

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Introduction to Resilience Brokers

- UK group to speed up and scale up transformative urban/rural development;
- Operates in space between private, public, knowledge and civil society sectors;
- Leading experts foster **integrated-systems thinking** and **collaborative approaches**;
- Develop tools and demonstrators to support implementation of 2030 agenda in city regions;
- Open source, free-to-use tools - "**resilience.io"** integrated-systems modelling platform
- Data-driven, social and natural science based.

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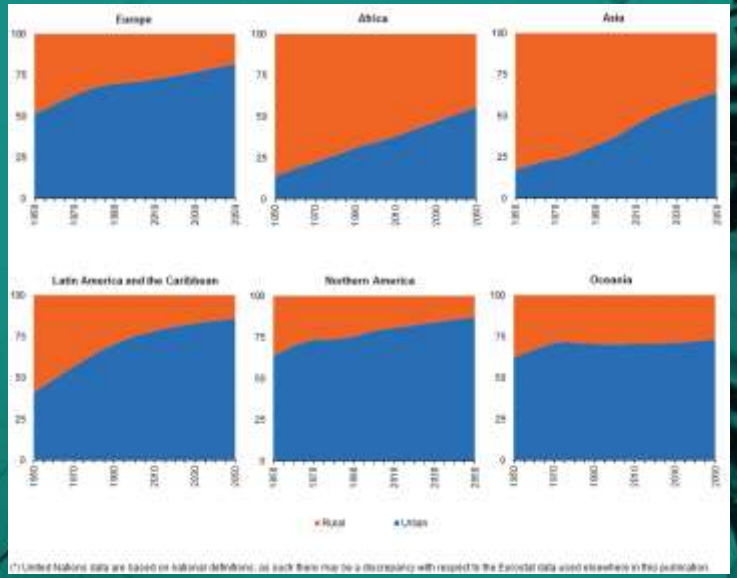
An Urbanising World

The 21st Century is the century of urbanism. By 2030, urban areas are projected to house >60% of people globally. Cities already contribute 70% of global GDP while consuming over 60% of global energy, producing over 70% of global waste and over 70% of greenhouse gas emissions.



#CarbonLaw
Translating the Paris Agreement into action plan
Global carbon law guiding decadal pathways
Global CO_2 emmissions
Technologies for CO_2 removal ($GtCO_2$/yr)
Reduction in CO_2 emissions from land use ($GtCO_2$/yr)
$GtCO_2$/yr
0
5
10
15
20
25
30
35
40
2020
2030
2040
2050
futureearth
Swedish Global Hub

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Disaster risk reduction today

- Economic losses from disasters have now reached $300bn/year – 0.3% global GDP
- Investment in disaster risk reduction is only 0.4% of international aid finance
- 1 in 150 people (50m) impacted by flooding in August 2017

Cyclone Idai 'might be southern hemisphere's worst such disaster'

Millions from Mozambique, Malawi and Zimbabwe affected as houses and roads submerged

#roadmap2030

http://ecosequestrust.org/roadmap2030.pdf

- Enabling environment to create smart partnerships between national and municipal government, civil society, academia, faiths and the private sector
- How to implement the urban agenda
- Addresses 16 cross-cutting themes in an integrated approach

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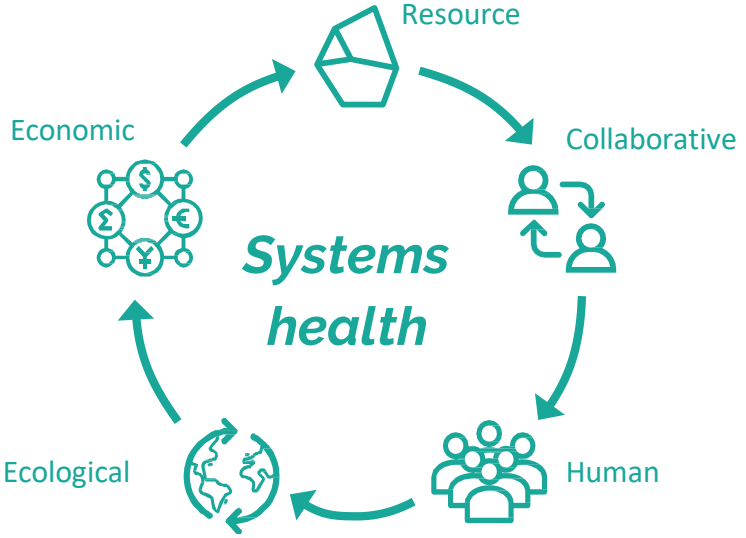
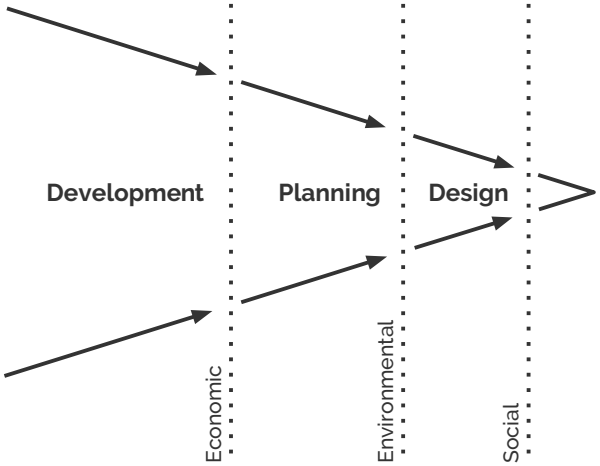
The CHEER systems health approach

Harnessing big data and scientific evidence for decision-making by integrated modelling of social and natural systems and their interlinkages; economics related to human well-being; and the health of ecological systems

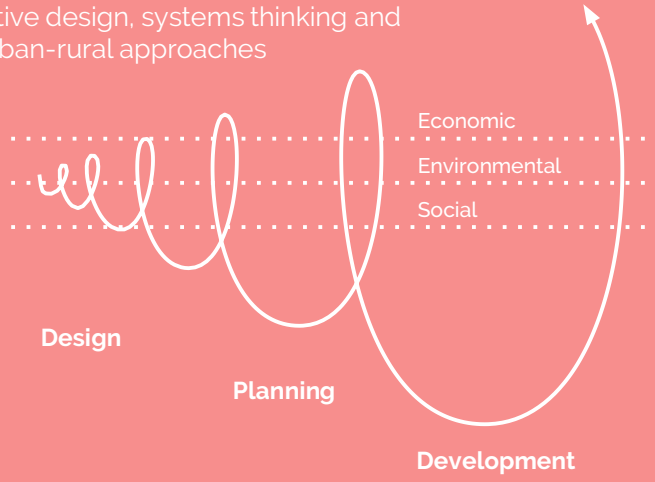


Current approach



CHEER systems health approach

Increasing investment and shared stakeholder value through interactive design, systems thinking and collaborative urban-rural approaches



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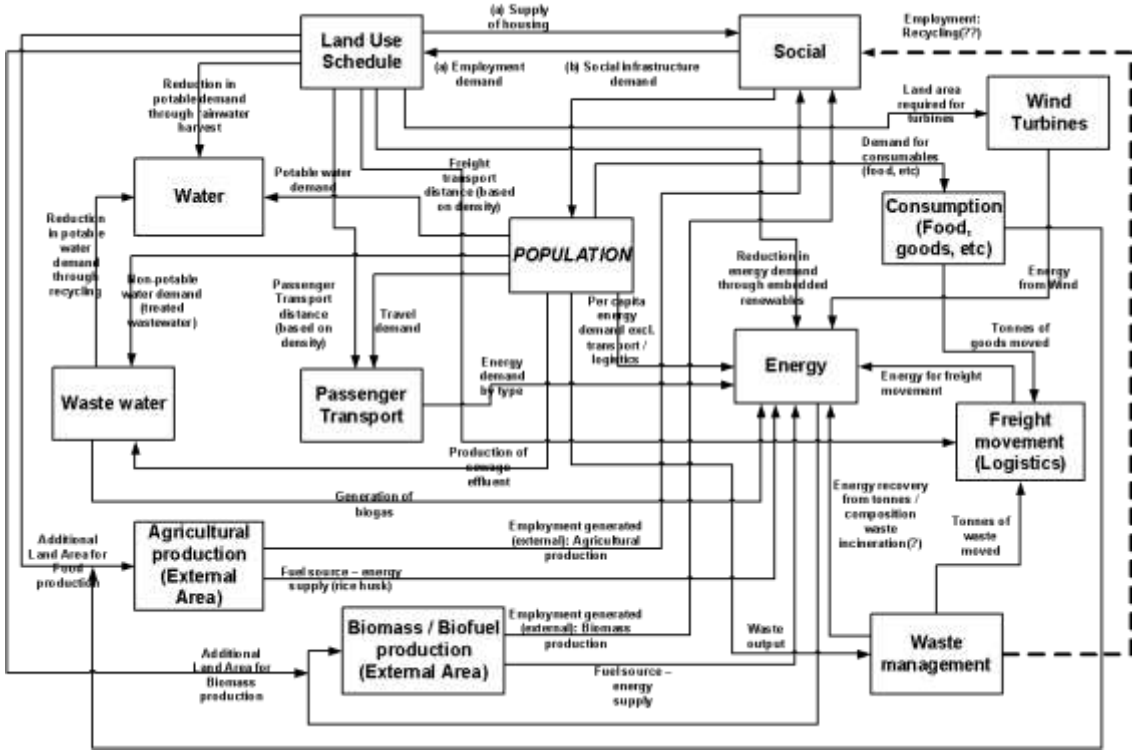
Opportunity-City collaboratory

"We are drowning in data but starved of wisdom"

Yuval Noah Harari
2017

The system of community life



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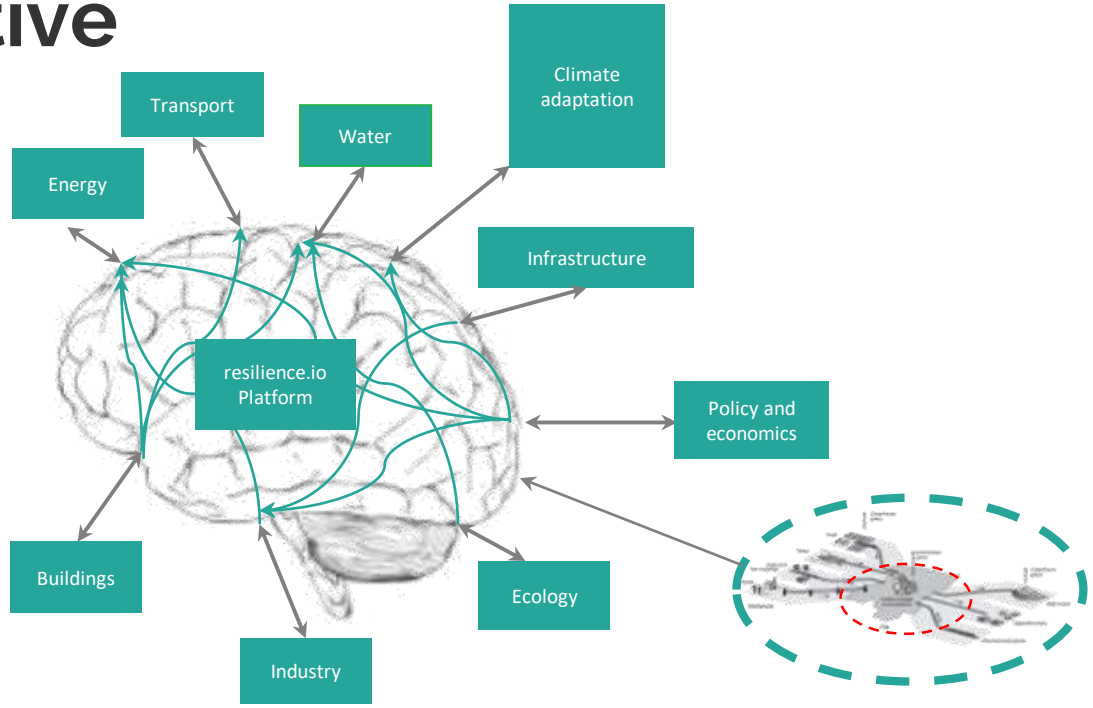
Regional Collective Intelligence

Decision making around value



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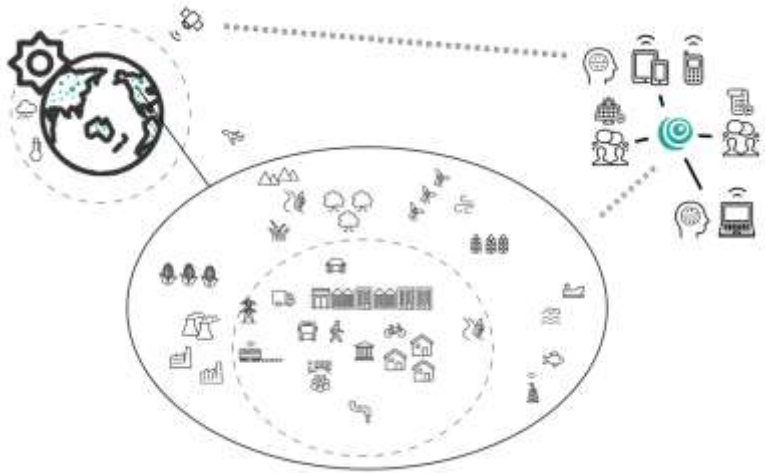
Advanced integrated systems-modelling, interoperable data



- We have designed and prototyped resilience.io: a data-driven systems modelling environment that can simulate the population, infrastructure and resource flows, economy and ecology of a city region.
- It enables multiple users to collaborate on scenario testing, to design projects (policies, services and infrastructure) which are climate compatible and sets cities on the path to achieving the Global Goals.
- This process helps cities build an evidence base to attract investment into ‘bankable projects’.

Decisions - Investment in infrastructure

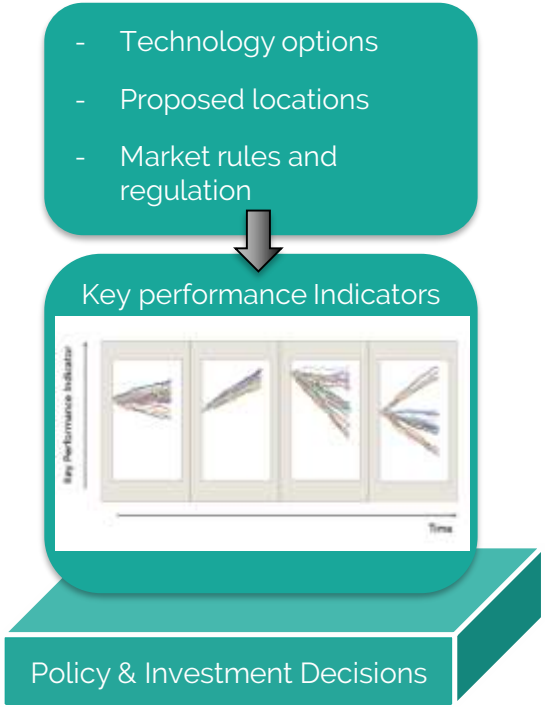
- Energy, Water, Transport, Housing, …
- Local, foreign, government, private, …

Decisions - Market Policies and planning

- Taxation, tariffs, quota, subsidies, …
- Land use plans, regulations, …

Indicator outcome range (5-20 years)

- Sector resource and energy flows
- Effects on imports & exports
- Wastes & Emissions (CO_2, CH_4,…)
- Employment, income, in(equality)
- Human health & well-being indicators
- Sector economic activity / GDP
- Access to service / %



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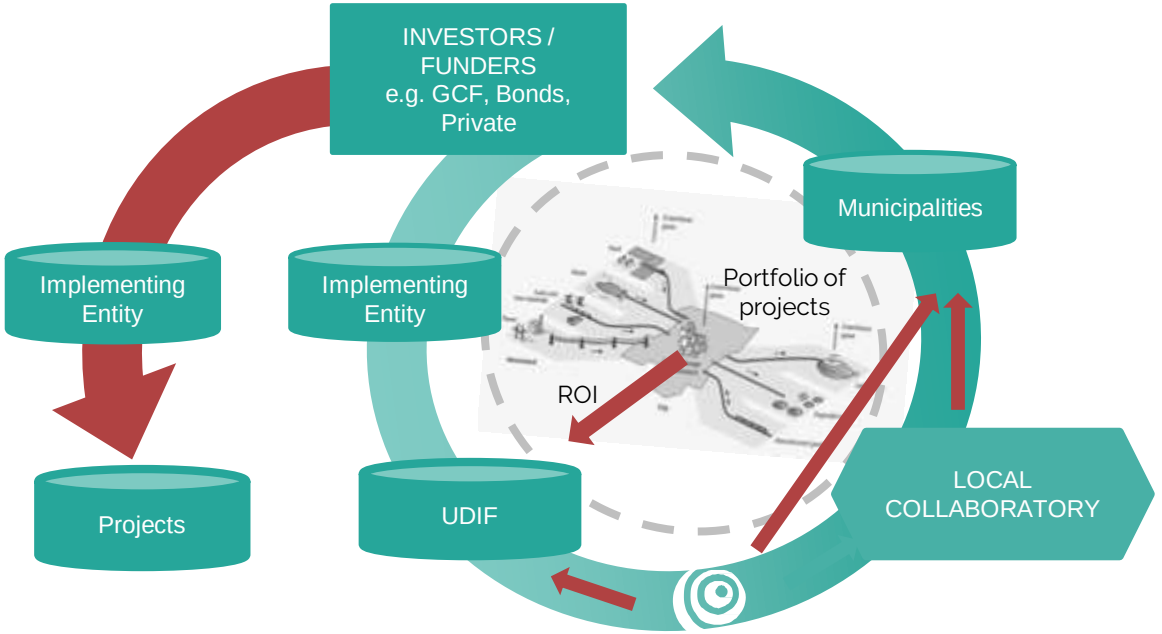
Urban Development Investment Funds

Smart selection of projects and improved design, planning and maintenance can **reduce finance demand by 40%**

This is the Resilience Dividend that resilience.io can unlock the value in design led, collaborative decision making!



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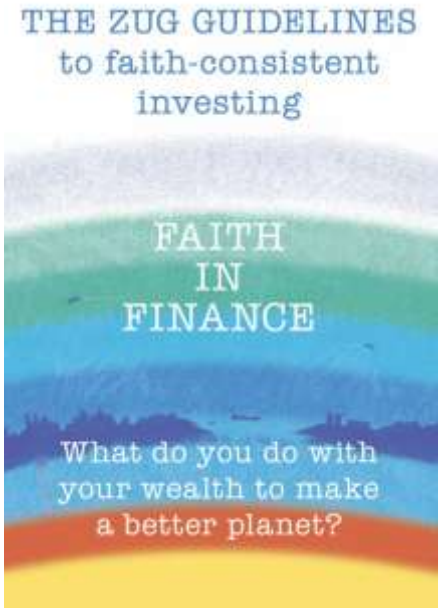
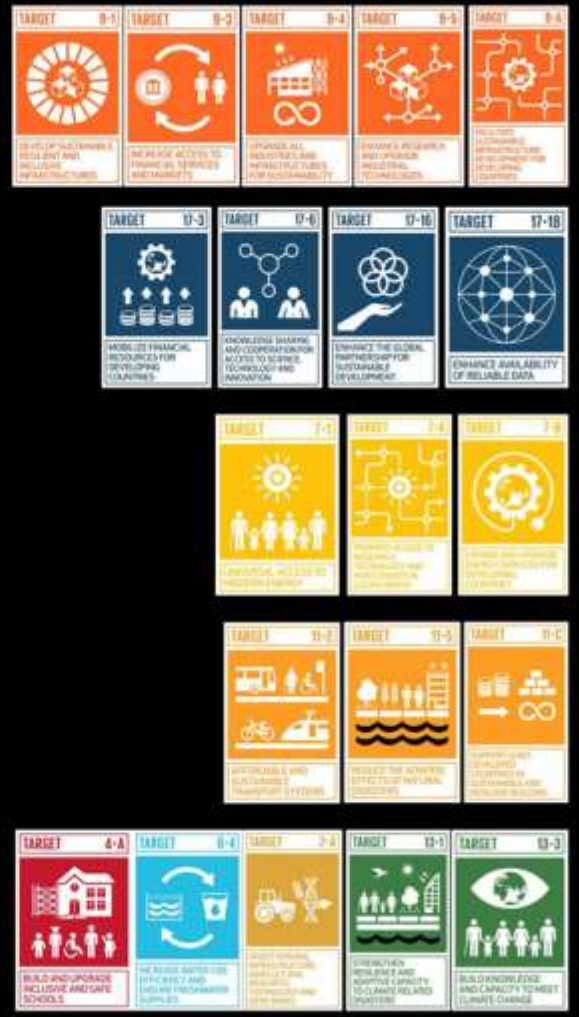
Bringing forward the Roadmap 2030 CHEER approach to establish regional collaborative laboratories in sacred cities to rapidly scale up FaithInvest



https://icebreakerone.org/



THE TIME FOR THEORY IS OVER

ICEBREAKER ONE.ORG

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Brokering investment and innovative solutions

We work with a global network of investors who are interested to finance 'bankable projects' in city regions.

They endorse our approaches as offering risk-reduced, more cost effectiveness means to achieve sustainable and resilient objectives and stand ready to engage with you in scoping or detailed discussions to finance your interventions.

We attract models of technology, services and policy solutions designed in innovation hotspots all over the world.

We offer cities access to this marketplace and enable them to quickly compare the performance of different options before they need to make any procurement decisions.

Taking cities on a learning journey of transformational change

ONBOARDING
Exploring topics and securing buy-in with key stakeholders

PROTOTYPING
Demonstrating solutions to region-specific challenges. Embedding learnings and building momentum

EMBEDDING
Systems thinking to support planning and investment decisions. Scaling the approach to maximise value creation and accelerate sustainable performance

- ➔Up to 40% saving in total infrastructure investment
- ➔Multi-hazard risk reduction
- ➔Regional shift towards sustainable & resilient performance
- ➔Support the delivery of the Global Goals

Smart. Green. Innovative.

THE GLOBAL GOALS
For Sustainable Development

resilience.io platform use cases

Greater Accra, Ghana	*Water supply, sanitation and accessibility*
Hunter Valley, Australia	*Water infrastructure, energy transition, institutional resilience*
Union Canal, Scotland, UK	*Water supply, sanitation and accessibility*
Anninghe, Sichuan, China	*Integrated multi-hazard modelling*
Queen Elizabeth Olympic Park, London, UK	*Digital and social inclusion, green space accessibility*

Additional Resilience Brokers Projects

Medellín, Colombia	*Air quality, public health, transport, green space*
Beirut, Lebanon	*Green space, urban health, pedestrian and cycling routes*
Western Cape, South Africa	*Water supply, energy transition*
Norfolk & Suffolk, UK	*Net positive energy buildings & public health*

#ACTonNBS

Nature Based Solutions

Cooling, cleaning air and water, better health and well-being, cheaper infrastructure, lower flood risk , lower greenhouse gas emissions

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Thank you

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