PART 1: **Researching healthy urban development**

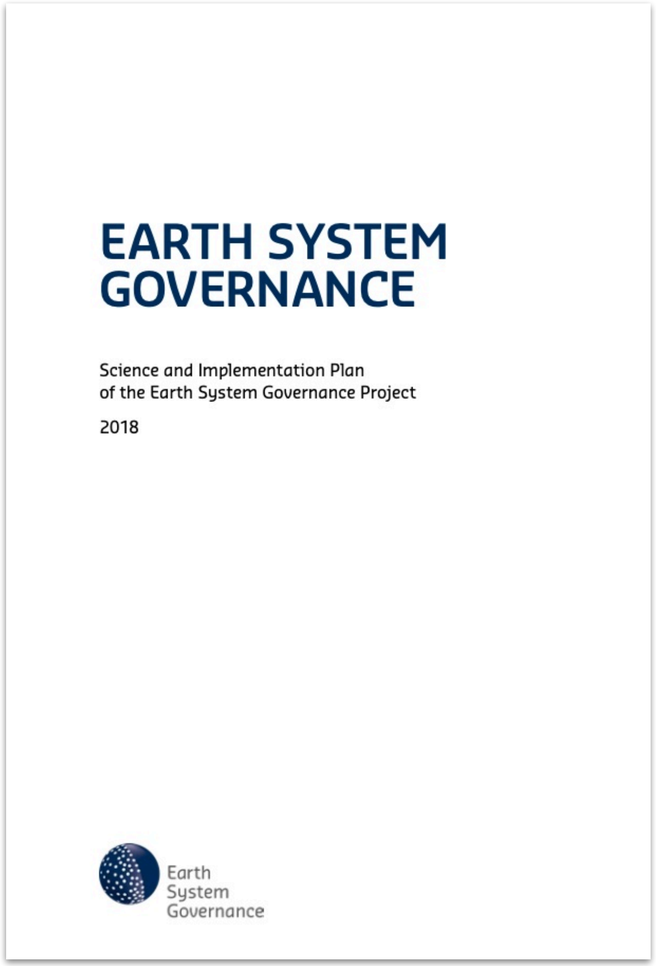
<u>Real world challenge:</u> How can we prioritise health of people and planet in urban development?

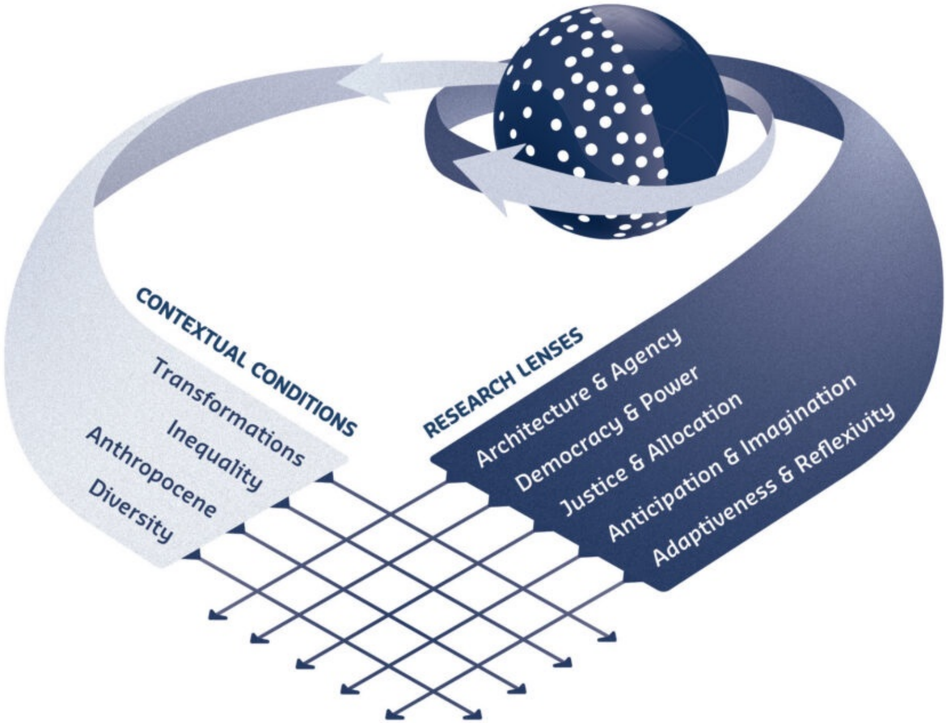
PART 2: **Operationalising "complex" research**

<u>Research challenge:</u> How can we better operationalise research that helps us answer that question?

Earth System Governance Seminar,
University of Bath, 29th April 2025

Why Earth System Governance?





ELSEVIER

Earth System Governance

Volume 22, December 2024, 100220

Short-termism in urban development: The commercial determinants of planetary health

Daniel Black [a b], Geoff Bates [c], Rosalie Callway [a d], Kathy Pain [e], Ed Kirton-Darling [f]

TRUUD

HEALTH AND PUBLIC POLICY EXPLAINER

What 'health' means and why that matters

This policy explainer is split into three sections.

1. The first section explains why it is important that that we ask what 'health' means;
2. The second examines three main areas of contemporary debate linked to 'health'; and
3. The third sets out the implications of these for policy and for political responsibility.

We pay particular attention to preventative policies: those that aim to create the right conditions in society for both a lower incidence of ill health, and better and fairer enjoyment of good health by all.

1. Why ask what health means?

At different times in our lives, we will think about our health and the health of those around us. If asked, we would all agree that health matters. This is health's 'intrinsic value'.

Being in good health is also important for what it allows us to do for ourselves, our families, communities and society. This is health's 'instrumental value'.

Of course, the opposite of these points is also true. Being in poor health is intrinsically bad, and it brings costs and limitations for individuals, families and society.

Given that health is so evident as a value—as something that matters—why do we need to ask what health means? It is because 'health' is a surprisingly slippery term and to achieve good health policy we need to understand it better. Consider as a starting point that:

- Health is not a single thing: it refers to lots of very different sorts of physical and mental conditions and situations.
- Health problems vary in how they arise: as a result of injury, infection, genetic disorder, exposure to an unhealthy environment or engagement in health-harming behaviours.
- Health problems vary in presentation: severity, stage and predicted progression.
- Health problems vary in how they may be addressed: whether and how they can be prevented in the first place, whether and how they might be treated when they arise, and at what cost.

In the next section we highlight some of the contentious issues affecting our understanding of health. These are also illustrated in our timeline, where we highlight some key writers and policy organisations who have researched what it means to address the determinants of (ill) health.

https://truud.ac.uk/

"*Our definition of planetary health is the achievement of the highest attainable standard of health, wellbeing, and equity worldwide…*

Put simply, planetary health is the health of human civilisation and the state of the natural systems on which it depends."

Rockefeller Foundation-Lancet Commission (2015) report

Agenda

- PART 1: **Research Areas** (15-20 mins)

    1. Climate Risk Valuation
    2. Food-Energy-Water Systems (Waste)
    3. Urban Development + Health

- PART 2: **Research Operationalisation** (25-30 mins)

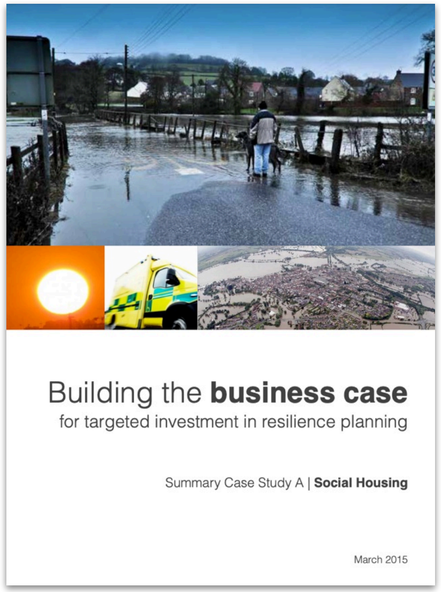
    1. Why?
    2. How…operationalise?
        3. …“impact” planning? (health world)
        4. …“impact” planning? (food-energy-water systems)
        5. …”good” co-production?
        6. *…who?*
    7. *What’s changed?*

Healthy Urban Development
(2015 - 2019, 2019 - 2025)

https://www.db-associates.co.uk/

https://truud.ac.uk/

Climate Risk Valuation
(2013-2015)



https://www.db-associates.co.uk/

Tackling Food Waste
(2018-2021)

PART 2:

Operationalising “complex” research
(for urban + planetary health)

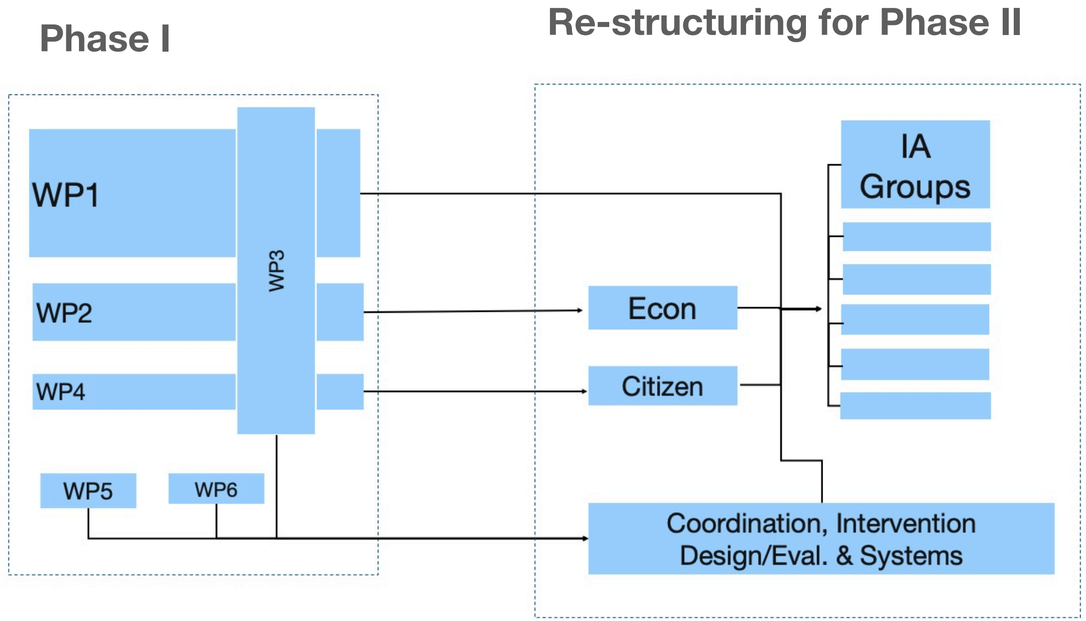
Why research operationalisation?

Critical Reflections:
Bid development > **emergent team evolution**

Recruitment relatively easy…? (fun, exciting)

Group description	Disciplines (newly combined)
• 40-odd researchers • 5 HE institutions • Multiple cost centres • 2 city / city regions • National / Westminster • 100s of stakeholders • £10m research funding	• Public health • Urban planning • Policy studies • Management • Real estate investment • Law • Environmental economics • Health economics • Systems engineering • Psychology • Public engagement • …

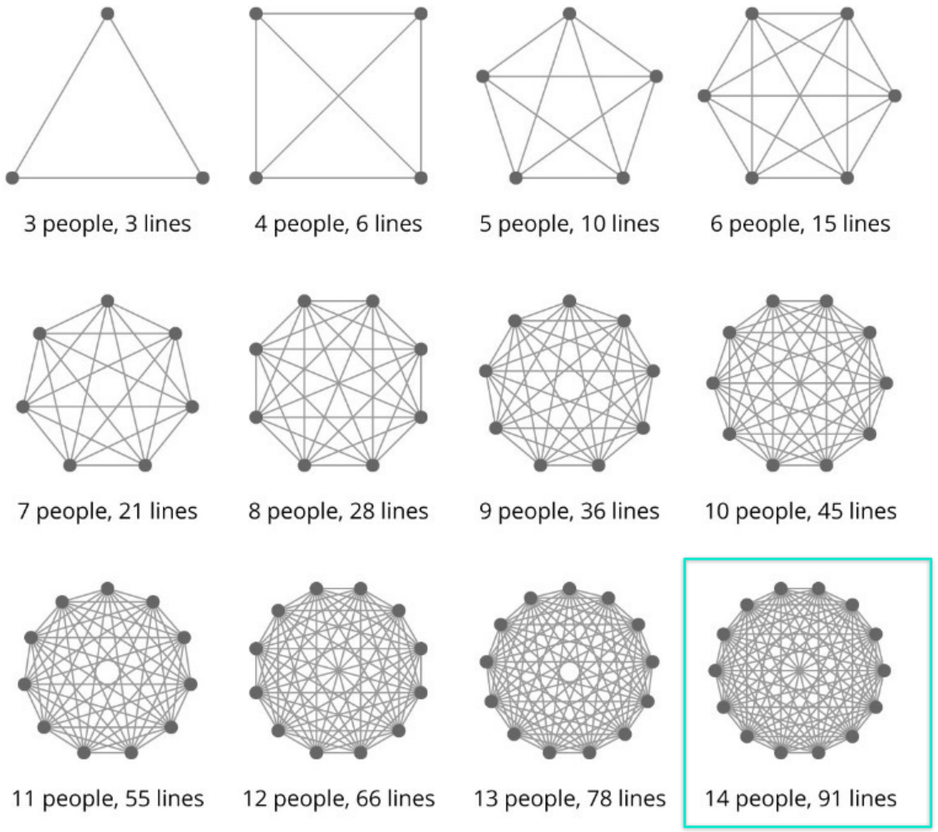
Emergent (re-)organisation (challenging)



Projects 'like this'? ('LMITs')

- ❑ Large number of researchers / stakeholders
- ❑ Mission-oriented (socio-economic impact)
- ❑ Inter/trans-disciplinary
- ❑ Co-produced/emergent

Critical Reflections:
Large teams + complexity = **substantially increased communications**



Credit: Robert Metcalfe of Metcalfe's Law (1980)?

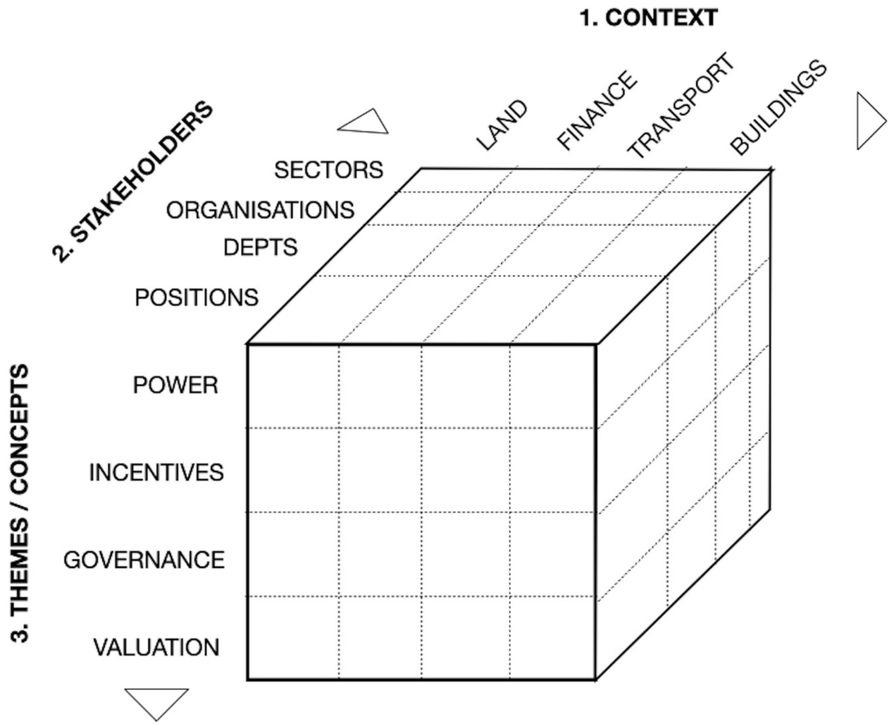


Fig 4 - Black, D., Bates, G., Ayres, S. *et al.* **Operationalising a large research programme tackling complex urban and planetary health problems: a case study approach to critical reflection.** *Sustain Sci* **18**, 2373–2389 (2023). https://doi.org/10.1007/s11625-023-01344-x

Why research operationalisation?

How?
”Impact”?
Co-production?

1:

Why research operationalisation?

(Early insights)

Full Paper | Open Access

Moving Health Upstream in Urban Development: Reflections on the Operationalization of a Transdisciplinary Case Study

Daniel Black, Gabriel Scally, Judy Orme, Alistair Hunt, Paul Pilkington, Roderick Lawrence, Kristie Ebi

First published: 07 August 2018 | https://doi.org/10.1002/gch2.201700103 | Citations: 32

Foundational Understandings:
‘Key team processes’…need time and support

	Developmental	Conceptual	Implementation	Translational
Primary goal	Establish a shared understanding of the scientific or societal problem space of interest—including what concepts fall inside and outside its boundaries—and mission of the group	Develop novel research questions or hypotheses, a conceptual framework, and a research design that integrate and extend approaches from multiple disciplines and fields	Launch, conduct, and refine the planned TD research	Apply research findings to advance progress toward developing innovative solutions to real-world problems, as appropriate to the level of science at which the research is conducted
Team type(s)	• Network	• Emerging team	• Real team	• Adapted team
	• Working group	• Evolving team		• New team
	• Advisory group			
	• Emerging team			
Key team processes	• Generate a shared mission and goals	• Create a shared mental model	• Develop compositional, taskwork, and teamwork transactive memory	• Adapt the team, as needed, to address translational opportunities
	• Develop critical awareness	• Generate shared language	• Conflict management	• Generate shared goals for the translational endeavor
	• Externalize group cognition	• Develop compilational transactive memory	• Team learning	• Develop shared understandings of how these goals will be pursued
	• Develop a group environment of psychological safety	• Develop a team TD ethic		

JOURNAL ARTICLE

A four-phase model of transdisciplinary team-based research: goals, team processes, and strategies Get access

Kara L. Hall, PhD ✉, Amanda L Vogel, PhD, MHS, Brooke A Stipelman, PhD, Daniel Stokols, PhD, Glen Morgan, PhD, Sarah Gehlert, PhD

Translational Behavioral Medicine, Volume 2, Issue 4, December 2012, Pages 415–430, https://doi.org/10.1007/s13142-012-0167-y
Published: 25 October 2012

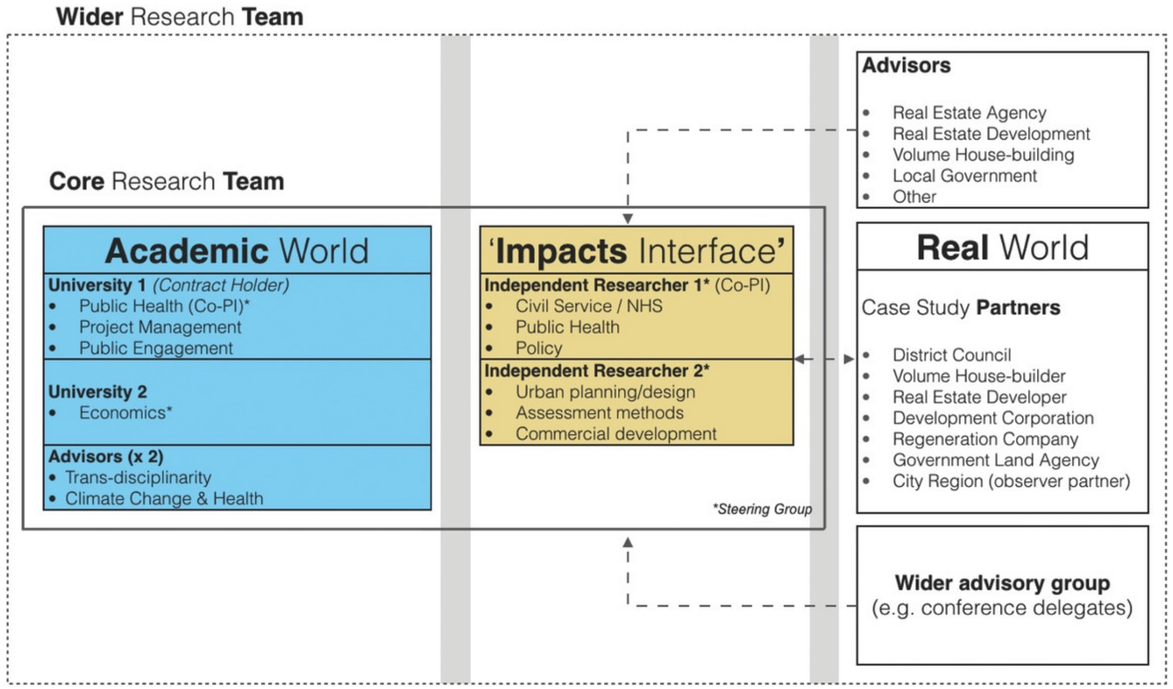
Management/admin support needed:

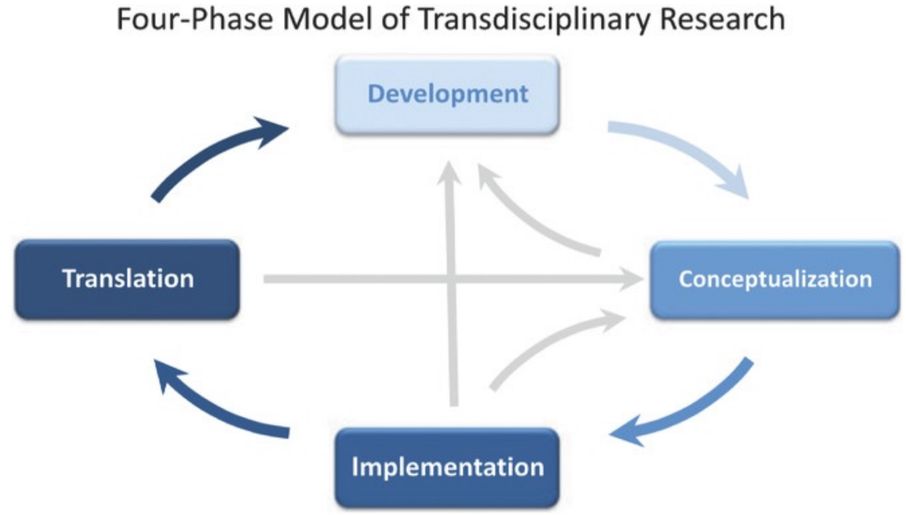
- Governance expertise
- Management expertise
- Communications
- Graphic design / data visualisation

And all need time (i.e. funding)

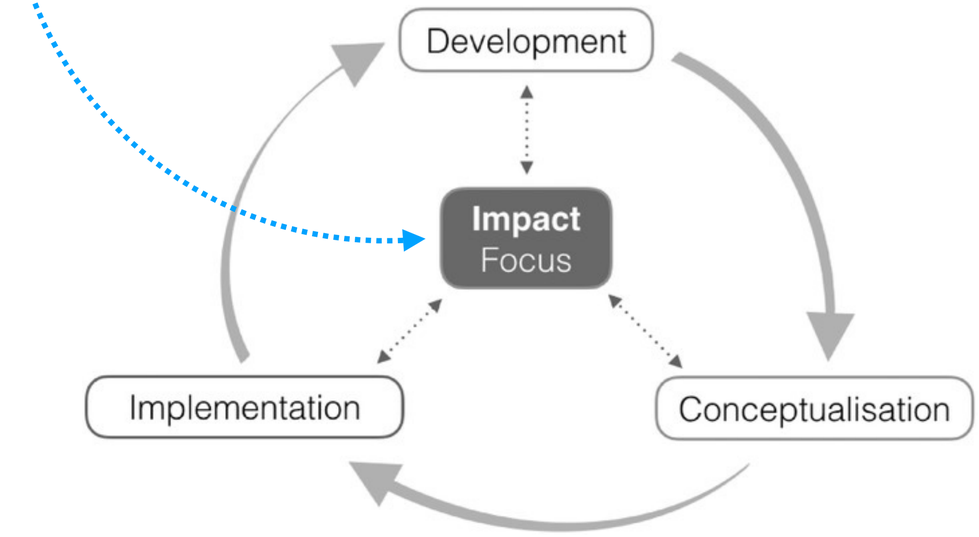
Early insights

Black, D., Scally, G., Orme, J., Hunt, A., Pilkington, P., Lawrence, R., and Ebi, K. (2018) **Moving Health Upstream in Urban Development: Reflections on the Operationalisation of a Trans-disciplinary Case Study**. Global Challenges, Wiley. **https://doi.org/10.1002/gch2.201700103**





Hall KL, Vogel AL, Stipelman B, Stokols D, Morgan G, Gehlert S. **A Four-Phase Model of Transdisciplinary Team-Based Research: Goals, Team Processes, and Strategies**. Transl Behav Med. 2012 Dec 1;2(4):415-430. doi: 10.1007/s13142-012-0167-y



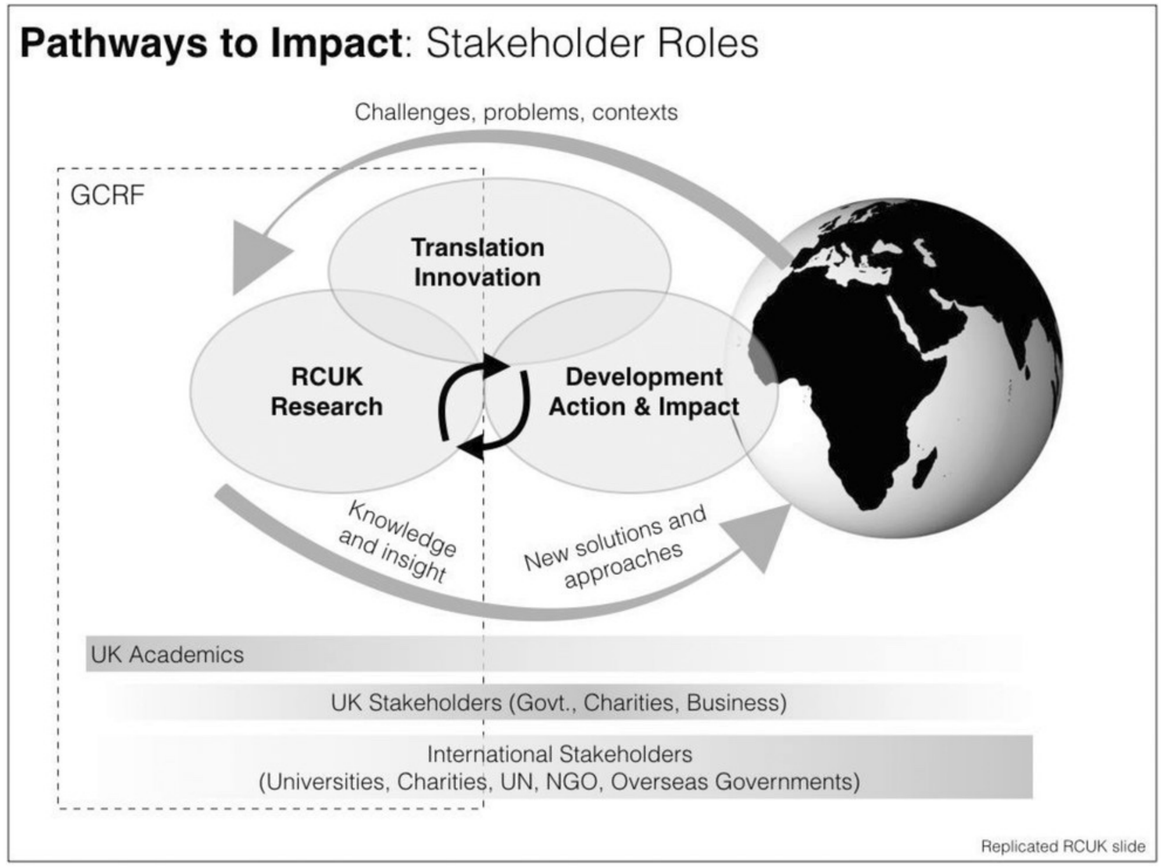
Recommendations:

1) upstream vs midstream
2) role of knowledge brokers
3) generalists vs specialists
4) reflective practice
5) new ways of working
6) resource requirements for TD
7) shared leadership

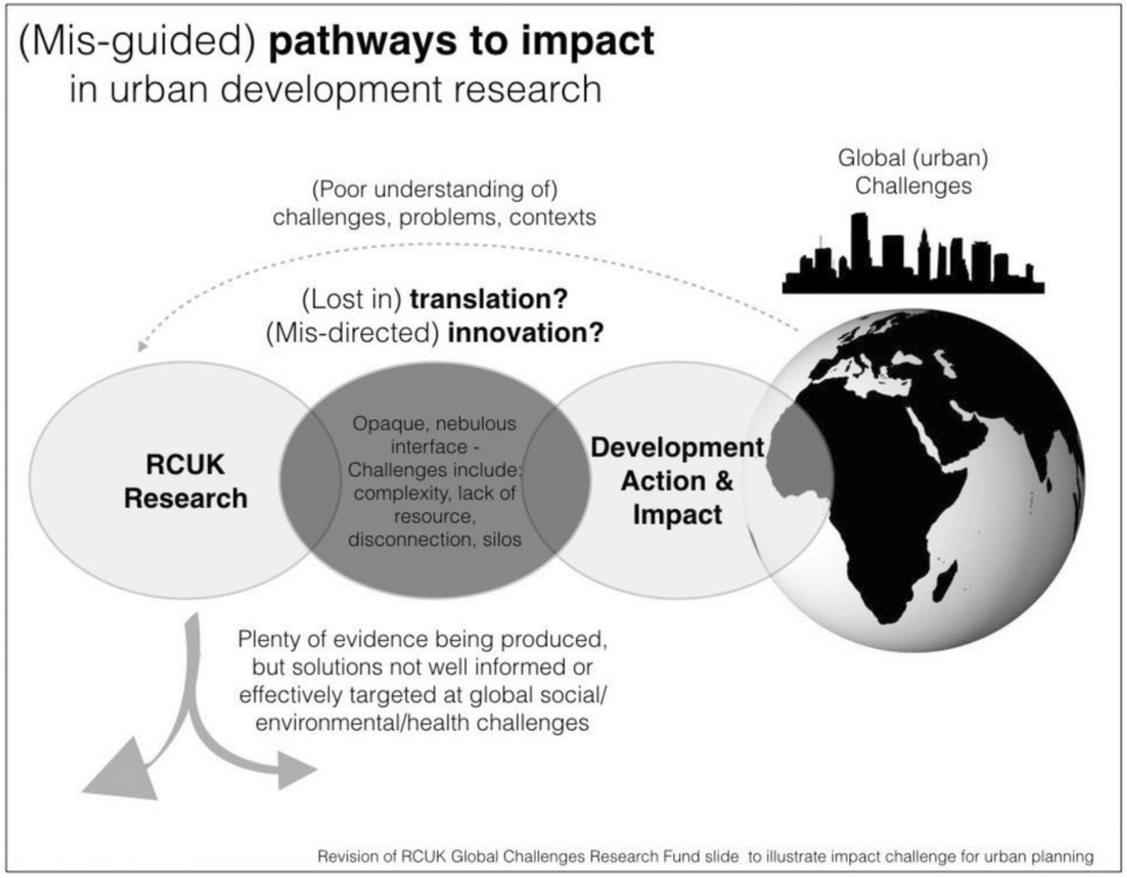
Early insights

Black, D., Scally, G., Orme, J., Hunt, A., Pilkington, P., Lawrence, R., and Ebi, K. (2018) **Moving Health Upstream in Urban Development: Reflections on the Operationalisation of a Trans-disciplinary Case Study**. Global Challenges, Wiley. **https://doi.org/10.1002/gch2.201700103**

IDEALISED VERSION



ACTUAL VERSION?



2:

Yes, research operationalisation!

ORIGINAL ARTICLE

Check for updates

Operationalising a large research programme tackling complex urban and planetary health problems: a case study approach to critical reflection

Daniel Black[1] · Geoff Bates[2] · Sarah Ayres[3] · Krista Bondy[4] · Rosalie Callway[1] · Neil Carhart[5] · John Coggon[6] · Andy Gibson[7] · Alistair Hunt[8] · Ges Rosenberg[9]

Received: 8 August 2022 / Accepted: 8 May 2023 / Published online: 28 June 2023

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Category: Concepts, Methodology, and Knowledge Management for Sustainability Science

Participating journal: Sustainability Science

Sustainability Science

Learnings - major programme

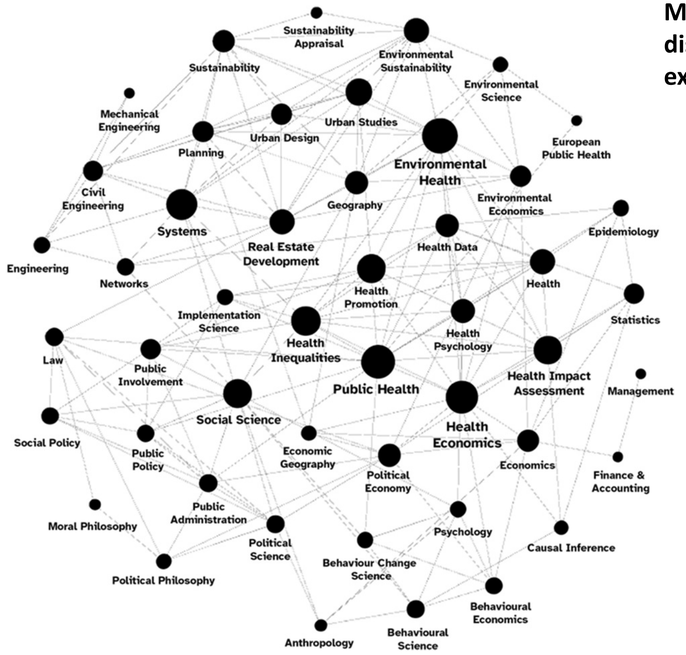
FOUNDATIONAL UNDERSTANDINGS

1. Systems, Unknowns, and Imperfection
2. ID/TD Understandings
3. Context and Stakeholder Knowledge
4. Identifying and responding to values
5. Societal Impact

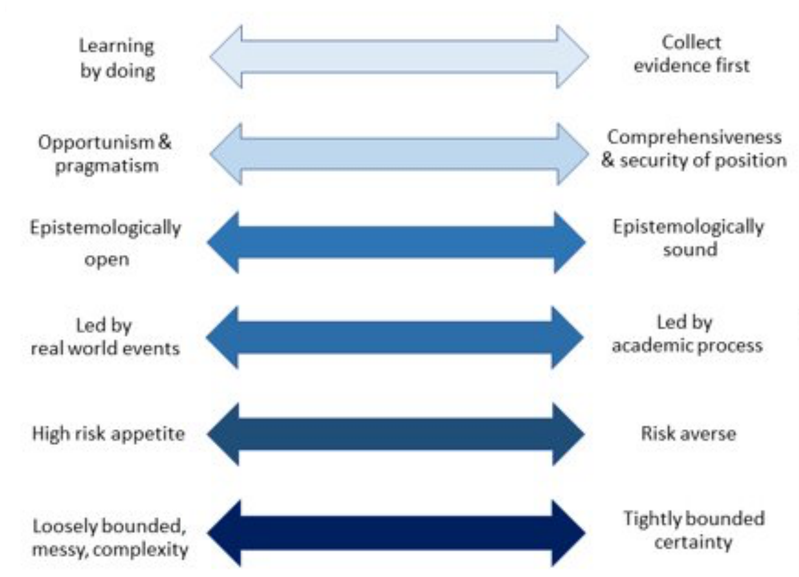
OPERATIONAL UNDERSTANDINGS

1. Project Understandings and Direction
2. Team Cohesion
3. Communications
4. Decision-making
5. Methods Development

Mapping disciplinary expertise



Different researchers & disciplines work in different ways…



Black, D., Bates, G., Ayres, S. *et al.* **Operationalising a large research programme tackling complex urban and planetary health problems: a case study approach to critical reflection.** *Sustain Sci* **18**, 2373–2389 (2023). https://doi.org/10.1007/s11625-023-01344-x

3:

How do we define and plan for “impact”?

(Public Health)

How societal impact is understood and approached across a newly formed community of researchers with an ambitious ‘health of the public’ agenda.

Martin J, Black D, Coggon J (2024)

Research Evaluation. Oxford Academic.
[Accepted with minor revisions]

Impact understandings and approaches

across the UK Prevention Research Community of Practice

1. Global challenges > increasing requirement for positive "societal impacts"
2. "New approaches" needed: systems, ID/TD, upstream, co-production
3. UKPRP agenda emphatically outcome-oriented - innovative for three reasons:
    1. Long-term time horizon
    2. Embracing complexity (disregard for singular, linear causal pathways)
    3. Inter- and transdisciplinary research and with disciplines not, historically, 'core' to (public) health research
4. Also: meaningful collaboration & co-production with non-academic partners

1. Yet, knowledge and experience of new approaches marginal
2. Collaborative research across radically-varying disciplines - inevitable challenges
3. In particular general contestation over meaning of "impact"
4. Compounded by REF
    1. Narrowed, technical definition – not comprehensive
    2. Varying interpretations across different units of assessment
5. Profound implications for how research will be undertaken and evaluation

Martin J, Black D, Coggon J (2024) **How societal impact is understood and approached across a newly formed community of researchers with an ambitious 'health of the public' agenda**. Research Evaluation. Oxford Academic. [Accepted with minor revisions]

Foundational understandings:
Issues of complexity and societal challenge

"despite its promise and many excellent individual examples, **most interdisciplinary research remains at the academic margins,** largely because understanding about such investigations is fragmented"

(Bammer G, 2013)

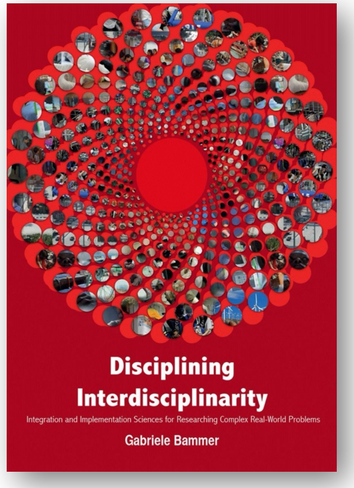
"so far there is only limited understanding of the enabling conditions, challenges, lessons, and tools for inter-disciplinary research…

…increasing our understanding of how to effectively design and deliver interdisciplinary research is crucial…"

(Brown R, 2019)

"not constrained by an unduly limited set of perspectives and approaches (and which should include) methods and perspectives where experience is still quite limited"

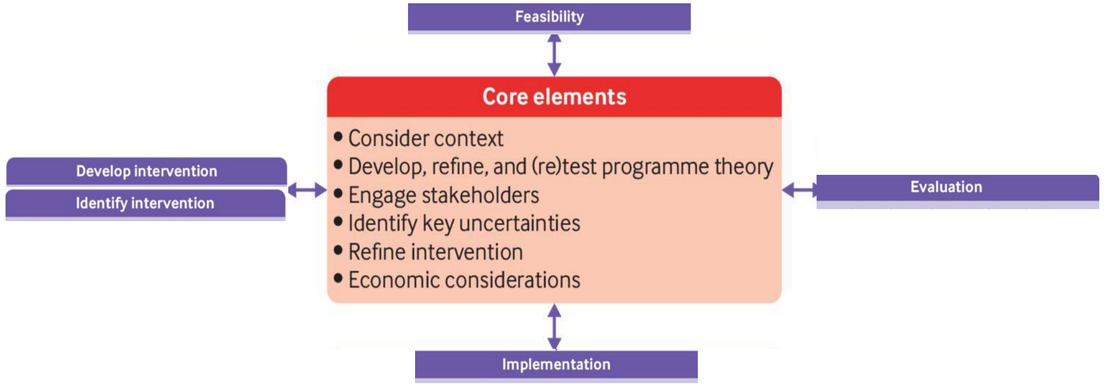
(Skivington et al, 2022)



Bammer G (2013) **Disciplining Interdisciplinarity: Integration and Implementation Sciences for Researching Complex Real-World Problems.** *ANU Press.*

Brown et al (2019) **Interdisciplinary Research and Impact.** *Wiley.* Global Challenges.

Black et al (2019) **Moving Health Upstream in Urban Development: Reflections on the Operationalization of a Transdisciplinary Case Study**. *Wiley.* Global Challenges.



Skivington et al (2021) **A new framework for developing and evaluating complex interventions: update of Medical Research Council guidance**. Research Methods and Reporting. *BMJ.*

Impact understandings and approaches

across the UK Prevention Research Community of Practice

"The way in which we define impact just is all over the place"

(Strategic lead)

"we did try to have a different Theory of Change for each work package at one point and then that just became impossible"

(Dedicated impact personnel)

"it's a large team, it's a large grant, lots of different workstreams… part of the challenge is ensuring that all of the work and activity… is aligned towards our overarching impact goals…"

(Senior academic lead)

"Trying to map out all those different potential impacts… the complexity is just so vast…wondering just how robust and realistic that type of impact measurement can ever be"

(Professional service manager-administrator)

Martin J, Black D, Coggon J (2024) **How societal impact is understood and approached across a newly formed community of researchers with an ambitious 'health of the public' agenda**. Research Evaluation. Oxford Academic. [Accepted with minor revisions]

Impact understandings and approaches

across the UK Prevention Research Community of Practice

Categories *Reed (2016)*	**Impact definitions** stated by participants
Instrumental: *e.g., actual changes in policy or practice*	· **Changes to policy documents** · **Changes in financial expenditure**
Conceptual: *e.g., broad new understanding/ awareness-raising*	· **Communications (bulletins) and media outputs** · **Improved access to evidence** · **Changes to public discourse** · **Submitting evidence to Parliamentary Committee hearings** · **Shifting the way people think**
Capacity-building: *e.g., training of students or professionals, CPD*	· **The development of knowledge and skills** · **Number of PhDs** · **Empowerment of communities** · **Academic career advancement and research expansion**
Attitudinal or cultural: *e.g., increased willingness to engage in new collaborations*	· **Trust and credibility** · **Local leaders "*understanding and engaging*" in the research**
Enduring connectivity: *e.g., follow-on interactions such as joint proposals*	· **The securing of ongoing research funding**

Martin J, Black D, Coggon J (2024) **How societal impact is understood and approached across a newly formed community of researchers with an ambitious 'health of the public' agenda**. Research Evaluation. Oxford Academic. [Accepted with minor revisions]

Impact understandings and approaches

across the UK Prevention Research Community of Practice

Martin J, Black D, Coggon J (2024) **How societal impact is understood and approached across a newly formed community of researchers with an ambitious 'health of the public' agenda**. Research Evaluation. Oxford Academic. [Accepted with minor revisions]

Themes from analysis

1. Defining impact
2. Programme theory & pathways to impact
3. Stakeholder analysis, engagement & co-production
4. Measuring and reporting impact
5. Challenges, structural barriers and lessons learned
6. Funder influence

Implications for research

1. Language, shared understanding and missions
2. Effective co-production and validating theories of change
3. Training in new approaches to research design
4. Development of new approaches to evaluation
5. Properly resourced transdisciplinarity and co-production
6. Support for this new research agenda

4:

How do we define and plan for “impact”?

(Food-Energy-Water Systems)

sustainability

MDPI

Article

Comparing Societal Impact Planning and Evaluation Approaches across Four Urban Living Labs (in Food-Energy-Water Systems)

Daniel Black [1,2,*], Susanne Charlesworth [3], Maria Ester Dal Poz [4], Erika Cristina Francisco [4], Adina Paytan [5], Ian Roderick [6], Timo von Wirth [7,8] and Kevin Winter [9]

sustainability

an Open Access Journal by MDPI

IMPACT FACTOR 3.251

CITESCORE 3.9 SCOPUS

MDPI

Promoting and Sustaining Urban Health: Challenges and Responses

Health, Well-Being and Sustainability

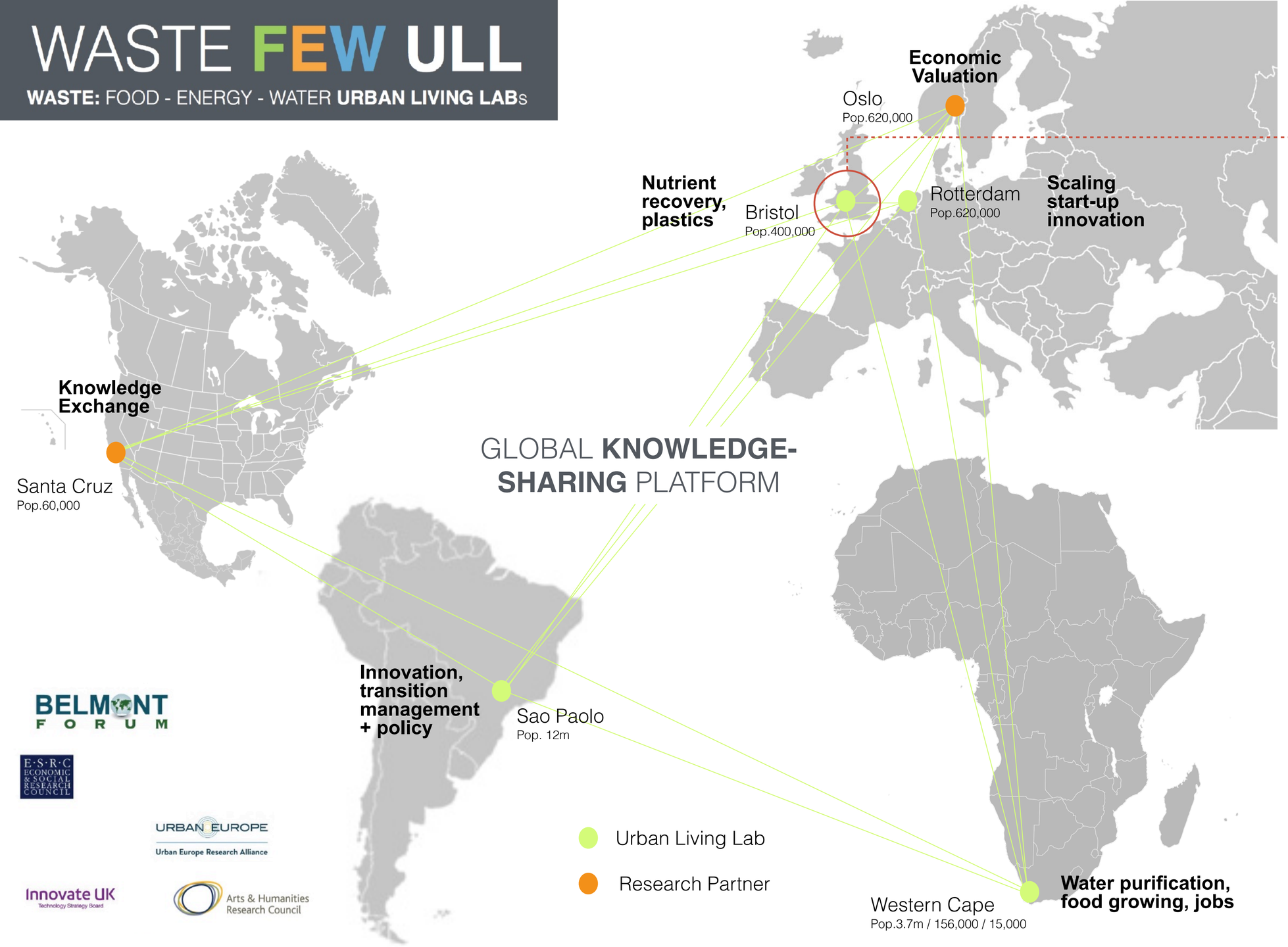
A section of *Sustainability* (ISSN 2071-1050).

Special Issue Editor

Prof. Dr. Roderick J. Lawrence **E-Mail** **Website**
Guest Editor
Geneva School of Social Sciences, University of Geneva, 1211 Geneva 4, Switzerland
Interests: healthy cities; housing, building and planning; human ecology; global sustainability; planetary health; transdisciplinarity; urban health challenges and responses

WASTE FEW ULL

WASTE: FOOD - ENERGY - WATER **URBAN LIVING LABs**



West of England ‘Urban Living Lab’

centre for sustainable energy

Wessex Water YTL GROUP

Research Centre Agroecology, Water and Resilience | Coventry University

Schumacher Institute for Sustainable Systems

GENeco Sustainable Solutions

Bristol Food Network

Bristol waste

CICERO

University of Reading

resourcefutures

University of California Santa Cruz

University of Bath

BELMONT FORUM

E·S·R·C Economic & Social Research Council

URBAN EUROPE Urban Europe Research Alliance

Innovate UK Technology Strategy Board

Arts & Humanities Research Council

Comparing impact planning across Four Urban Living Labs (ULLs)

Black, D.; Charlesworth, S.; Dal Poz, M.E.; Francisco, E.C.; Paytan, A.; Roderick, I.; von Wirth, T.; Winter, K. **Comparing Societal Impact Planning and Evaluation Approaches across Four Urban Living Labs (in Food-Energy-Water Systems).** *Sustainability* **2023**, *15*, 5387. https://doi.org/10.3390/su15065387

ULL: Main Components
Main Geographic Focal Point
ULL Boundary
Wider Population (City/Region)
Main theme/domain
Types (strategic, civic, grassroots/organic)
Funding scheme
Convening Funders
National Funders
Budget (EUR)
Duration
Research Leads
Associate Researchers
Role of municipalities
Commercial partners
Other funded partners
Other main partners (actively involved)
Wider stakeholder groups
Citizen Engagement
Core Resource
Additional Resource

Impacts
Change processes
Sustainable innovations
Societal challenges
Granularity of impact

Purpose
Main Aim / Vision / Rationale / Motivation
Key strategies
Potential for change – types
Embedding, Scaling, Translating
Academic Methodologies
Main deliverables
Main outcomes sought
Theory of change - explicit in proposal?
Types of top-level impact sought
Evidence produced
Theory of change - validated by partners?

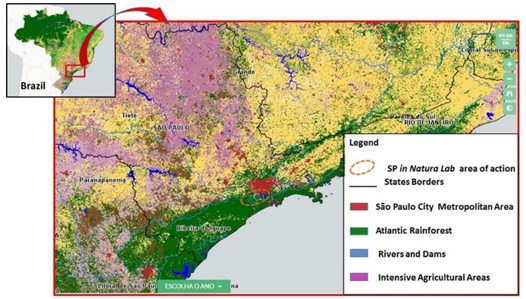
Evaluation and Outcomes
Purpose of evaluation and main question(s)
Summative, formative or interactive
Data requirements
Methods (interviews, surveys, observations)
Timeframes
Ethics

Dan Green
Wessex Water

Gwen Frost
Bristol Waste

Ian Roderick
Schumacher Institute

Kevin Winter
Urban Water Management



Ester Dal Poz
Innovation Policy

Sue Charlesworth
Principal Investigator

Daniel Black
db+a

Adina Paytan
Biochemistry & Communications

Timo von Wirth
Sustainability & Innovation

Comparing impact planning across Four Urban Living Labs (ULLs)

Reed (2016) [8]		UKRI (2020) [1]	Stryer et al. (1999) [10]
Categories	**Examples Impacts**	**Academic/Societal**	**Hierarchy of Research Impact**
Instrumental	"Actual" changes in policy or practice	Societal	Policies/Practice
Conceptual	Broad new understanding/awareness-raising	Academic/societal	N/A
Capacity-building	Training of students or professionals, CPD	Academic/societal	Further Research
Attitudinal or cultural	Increased willingness in general to engage in new collaborations	Academic/societal	Further Research
Attitudinal or cultural	Willingness to change (e.g., agriculture practices/drinking or eating habits)	Academic/societal	Further Research
Enduring connectivity	Follow-on interactions (e.g., joint proposals, reciprocal visits, workshops, relationships)	Academic	Further Research

M. Reed, *Research Impact Handbook*, Fast Track Impact, United Kingdom 2016, **http://www.fasttrackimpact.com/research-impact-book**.

Stryer, D.; Tunis, S.; Hubbard, H.; Clancy, C. The Outcomes of Outcomes and Effectiveness Research: Impacts and Lessons from the First Decade. *Health Services Research* **2000**, *35 Pt 1*, 977–993.

Instrumental

- WASTE FEW ULL contributed "*most definitely*" (BFN) to Bristol winning Going for Gold
- Bristol Waste using non-market valuation in its campaign (2022)

Conceptual

- The macro-economic/scenario model "*helps shape directions of solutions…walk* you through that complexity'" (RF)
- It is "*fascinating…makes you think about things differently…needs a bigger conversation*" (Bristol Waste)
- "*very helpful for us taking a look at the One City Plan goals*" (BFN)

Attitudinal or cultural* (research)

- "*Very useful in bringing key actors together, wouldn't have happened otherwise…empowering with key people on the Food Waste Action Group*" (BFN)
- *"The project forged close ties among the ULL participants…plans and initiatives involving the FEW nexus will be smoother and more likely to succeed."* (TSI)

Enduring connectivity

Presentation scheduled with the Food Waste Action Group, with potential for follow on meetings with Bristol CC at Cabinet level and the One City Team.

Black, D.; Charlesworth, S.; Dal Poz, M.E.; Francisco, E.C.; Paytan, A.; Roderick, I.; von Wirth, T.; Winter, K. **Comparing Societal Impact Planning and Evaluation Approaches across Four Urban Living Labs (in Food-Energy-Water Systems).** *Sustainability* **2023**, *15*, 5387. https://doi.org/10.3390/su15065387

5:

What about co-production…

…in the context of planetary health?

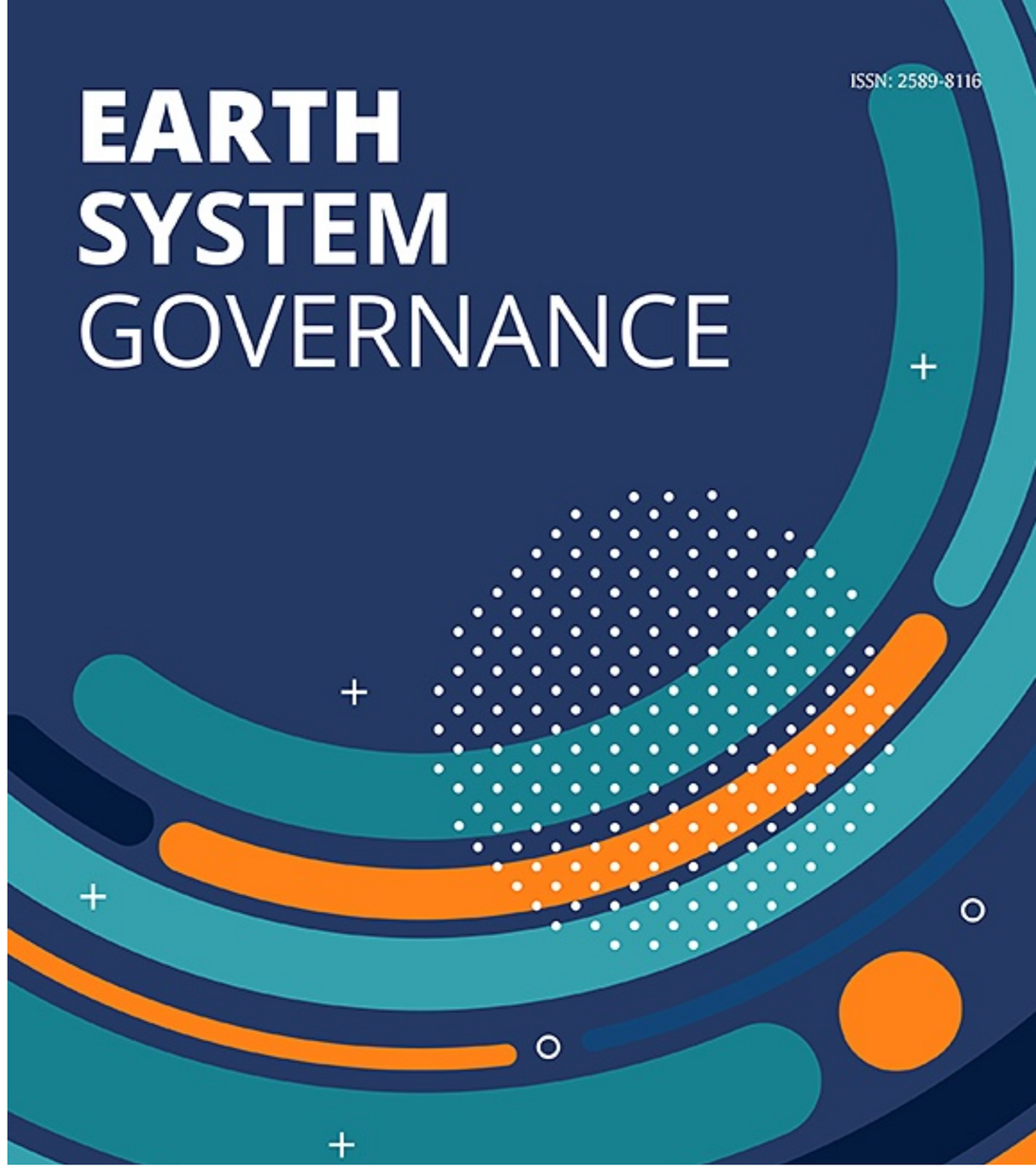
ELSEVIER

Earth System Governance

Volume 23, January 2025, 100229

What is “good” co-production in the context of planetary health research, and how is it enabled?

Daniel Black [a b 1], Geoff Bates [c 1], Andy Gibson [d], Kathy Pain [e], Ges Rosenberg [f], Jo White [d]



Special issue

Exploring ‘Planetary Health’ in the Context of Earth System Governance

“Good” co-production in planetary health research?

Six headline themes from the literature

1. Clarity of mission
2. Language
3. Co-production for societal impact
4. Co-production in complex contexts
5. New approaches: optimising co-production*
6. Limits of involvement

***New approaches**

1. *Were approaches to working across disciplines and sectors, with key stakeholders (those affecting as well as those affected), effective?*
2. *Were funders and other influential leaders on side?*
3. *Were learnings being captured through effective reflection, evaluation and post hoc analysis?*
4. *How were power dynamics identified and power shared appropriately?*
5. *Were programme theory, theory of change and research design strategies developed iteratively and with the appropriate stakeholders?*
6. *Was there scope for change following new information/strategy?*
7. *Were individual values identified and accommodated?*
8. *Were all the various components brought together to the satisfaction of those designing the co-produced research?*
9. *Were systems approaches employed and to what extent?*
10. *What approach to (research) team working has been employed and was it successful?*

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“Good” co-production in planetary health research?

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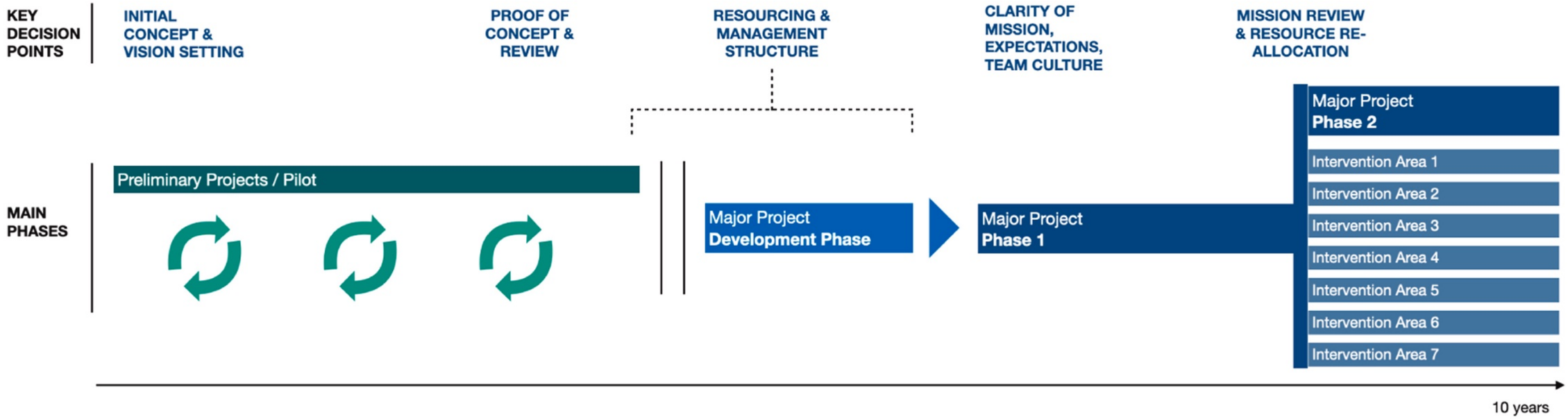
Suggested principles of ‘good’ co-production

1. Broad contextual awareness
2. Validated mission-orientation
3. Smart, flexible resourcing
4. Power is balanced
5. Core values are made explicit
6. Shared language
7. Make space for innovation
8. Transdisciplinary working knowledge

Five main decision points



6:

How do we know we have the right people involved?

7:

How do we know what's changed as a result of this work?

Thank you

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