# Overcoming
# **the challenges of problem identification**
# in complex systems of urban health

17th WORLD CONGRESS ON PUBLIC HEALTH (WCPH), MAY 3-6, ROME, ITALY
**Workshop – 2:30-3:30pm, May 4th 2023**

**Lead Authors**

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# INTRODUCTION

**OBJECTIVES**

1. The challenge of problem identification (large teams, complex challenges)

2. What constitutes "good" co-production

3. Some key recommendations

**FORMAT**

- 20-25 mins – Presentations:
    1. Project & main challenges
    2. Deeper-dive on problem identification
- 15-25 mins – Group Discussion
- 5-10 mins – Plenary & Final Recommendations

TRUUD

# UK Prevention Research Partnership

is a £50 million multi-funder initiative that supports novel research into the primary prevention of non-communicable diseases to improve population health and reduce health inequalities.

UKPRP
Prevention Research Partnership

British Heart Foundation

CANCER RESEARCH UK

CHIEF SCIENTIST OFFICE

EPSRC
Engineering and Physical Sciences Research Council

E·S·R·C ECONOMIC & SOCIAL RESEARCH COUNCIL

Ymchwil Iechyd a Gofal Cymru
Health and Care Research Wales

HSC Public Health Agency
Research and Development

MRC Medical Research Council

NERC SCIENCE OF THE ENVIRONMENT

NIHR | National Institute for Health Research

The Health Foundation

wellcome

## CALL CRITERIA

- *"New approaches* to population health research" (going *beyond 'traditional'*)

- *Whole* systems

- *Interdisciplinary*

- Multiple *'upstream'* actions

- *Co-creation* with *end users*

- *'Knowledge brokers'* key

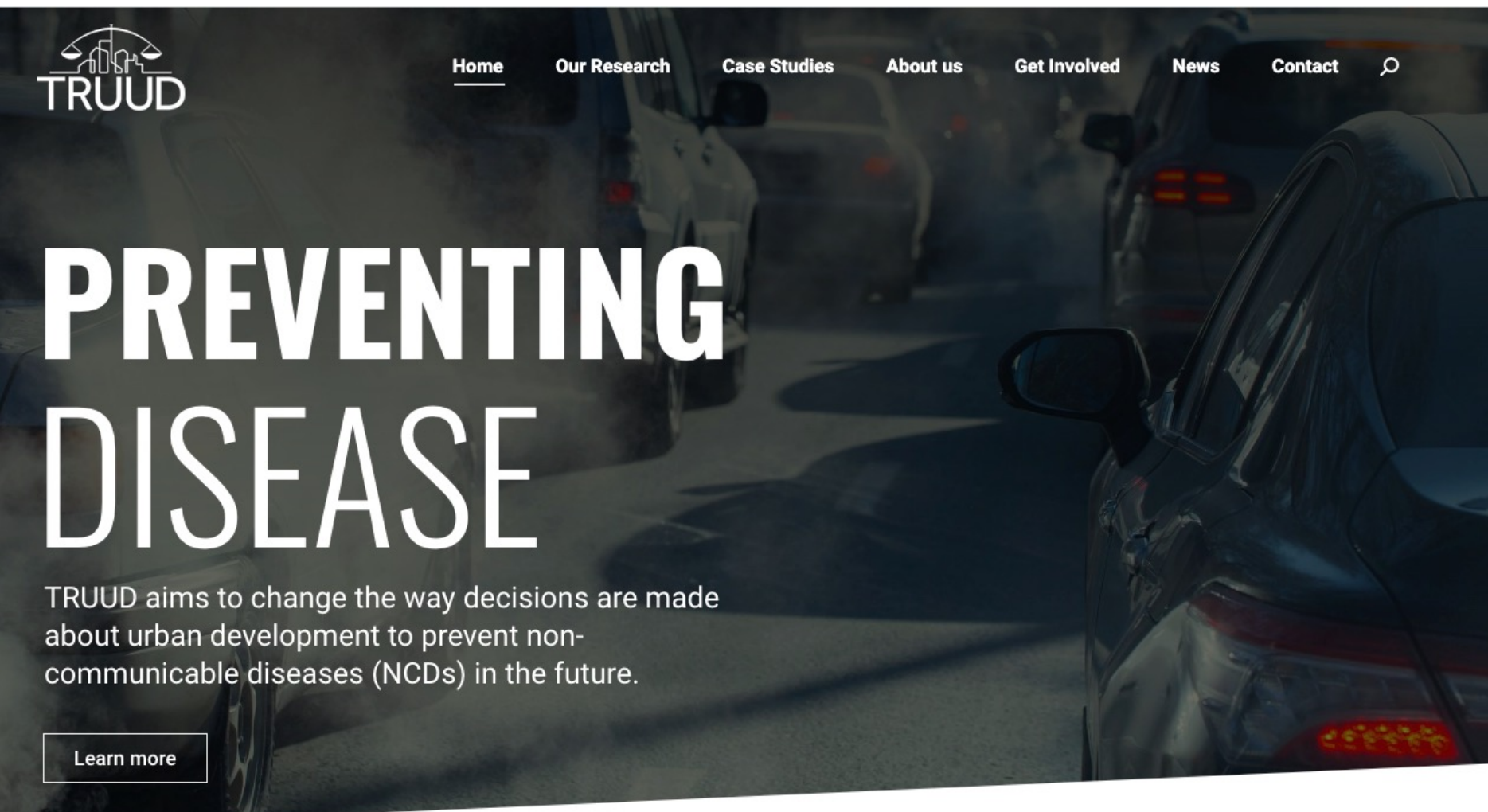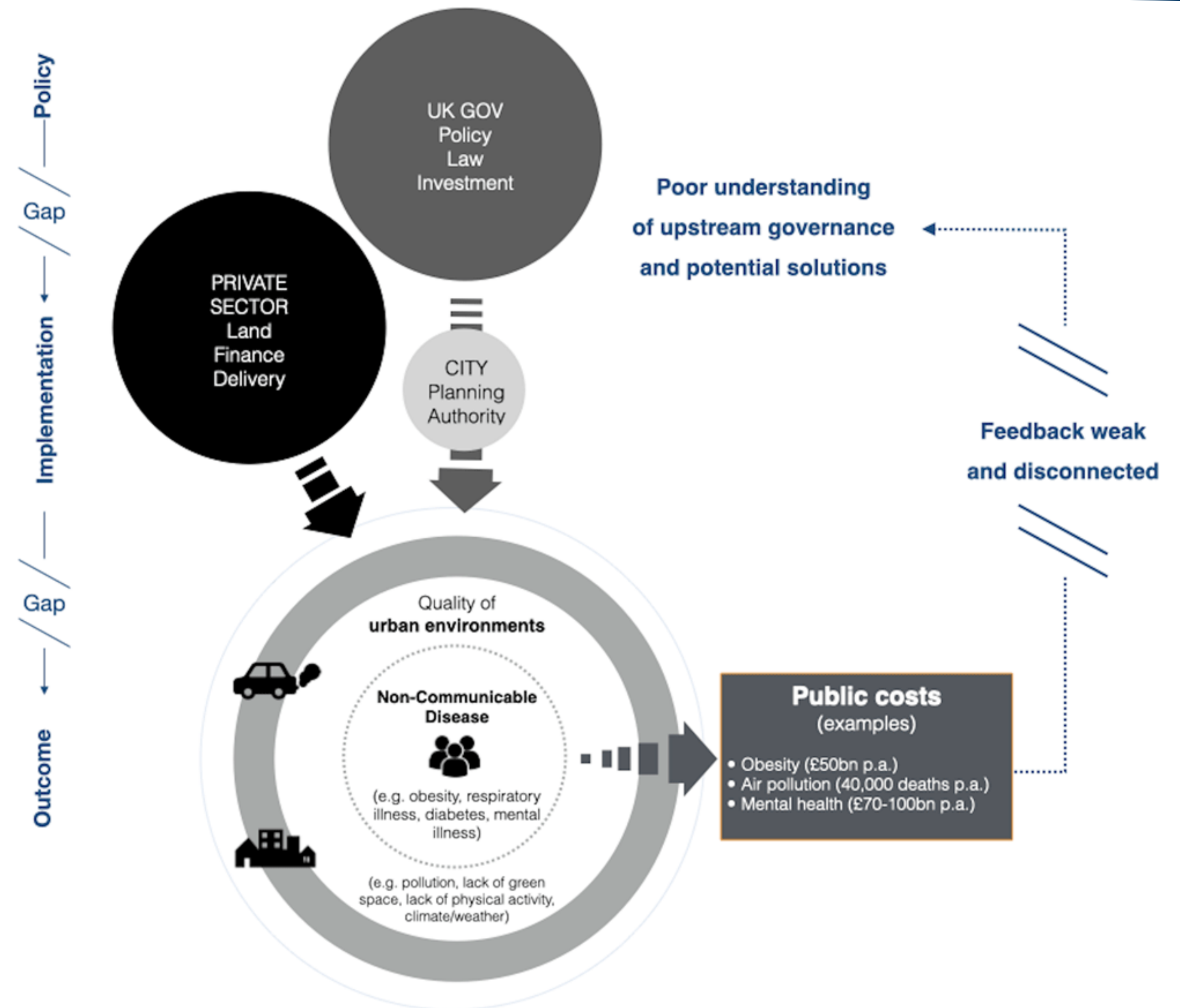- Solutions/societal impact (changes in *policy and practice*)

**TRUUD 'grand mission'**
**To enable a paradigm shift in how health is valued and integrated at root-cause decision-making points in the urban planning and development sectors**

**Mechanism**
**By developing and testing a multi-action intervention in two main sub-sectors: transport and property**

TRUUD



**PREVENTING DISEASE**

TRUUD aims to change the way decisions are made about urban development to prevent non-communicable diseases (NCDs) in the future.

Learn more

www.truud.ac.uk

Credit: Steve Melia





Policy

Gap

Implementation

Gap

Outcome

UK GOV
Policy
Law
Investment

PRIVATE
SECTOR
Land
Finance
Delivery

CITY
Planning
Authority

Quality of
**urban environments**

**Non-Communicable Disease**

(e.g. obesity, respiratory illness, diabetes, mental illness)

(e.g. pollution, lack of green space, lack of physical activity, climate/weather)

**Poor understanding of upstream governance and potential solutions**

**Feedback weak and disconnected**

**Public costs**
(examples)

• Obesity (£50bn p.a.)
• Air pollution (40,000 deaths p.a.)
• Mental health (£70-100bn p.a.)

Black D et al (2022) **Study Protocol | Tackling Root Causes Upstream of Unhealthy Urban Development (TRUUD): Protocol of a five-year prevention research consortium.** Wellcome Open Access. https://wellcomeopenresearch.org/articles/6-30

# Current advisors, stakeholders – recruitment ongoing…

**TRUUD**

## Advisory Panel

**Julia Goldsworthy (Chair)**
Director of Strategy
West Midlands Combined Authority
Read more ›

**Stephen Aldridge**
Director for Analysis & Data
Ministry of Housing Development & Local Government
Read more ›

**Dan Bristow**
Director of Policy & Practice
Wales Centre for Public Policy
Read more ›

**Nancy Edwards**
Professor Emeritus School of Nursing University of Ottawa
Read more ›

**Nicola Kane**
Head of Strategic Planning, Insight and Innovation Transport for Greater Manchester
Read more ›

**Halima Khan**
Executive Director Communities & Skills Mayor of London/London Assembly
Read more ›

**Richard Meier**
Co-Founder & CEO Stories
Read more ›

**Victoria Ofovbe**
Public Contributor
Read more ›

**Sunand Prasad**
Principal Penoyre & Prasad Architects
Read more ›

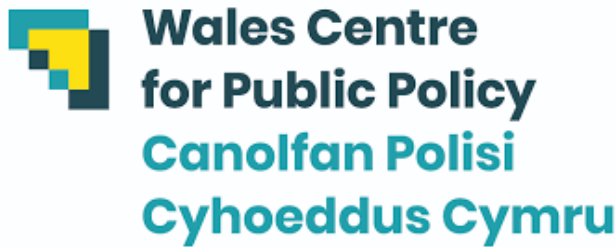**Mark Sandford**
Senior Research Analyst House of Commons
Read more ›

**Abigail Stratford**
Head of Regeneration Bristol City Council
Read more ›

**Richard Upton**
Chief Development Officer U+I
Read more ›

## LOCAL GOVERMENT
- Bristol City Council
- Transport for Greater Manchester
- GMCA – Greater Manchester Combined Authority

## NATIONAL GOVERMENT
- Department for Levelling Up, Housing & Communities
- House of Commons
- Office for Health Improvement & Disparities

## DEVOLVED / REGIONAL GOVERMENT
- Wales Centre for Public Policy / Canolfan Polisi Cyhoeddus Cymru
- West Midlands Combined Authority

## ACADEMIC
- uOttawa

## INDUSTRY MEMBERSHIP / THIRD SECTOR
- ULI Urban Land Institute
- UK GBC
- RTPI Royal Town Planning Institute
- tcpa

## INDUSTRY (developers, architect)
- stories
- u+i
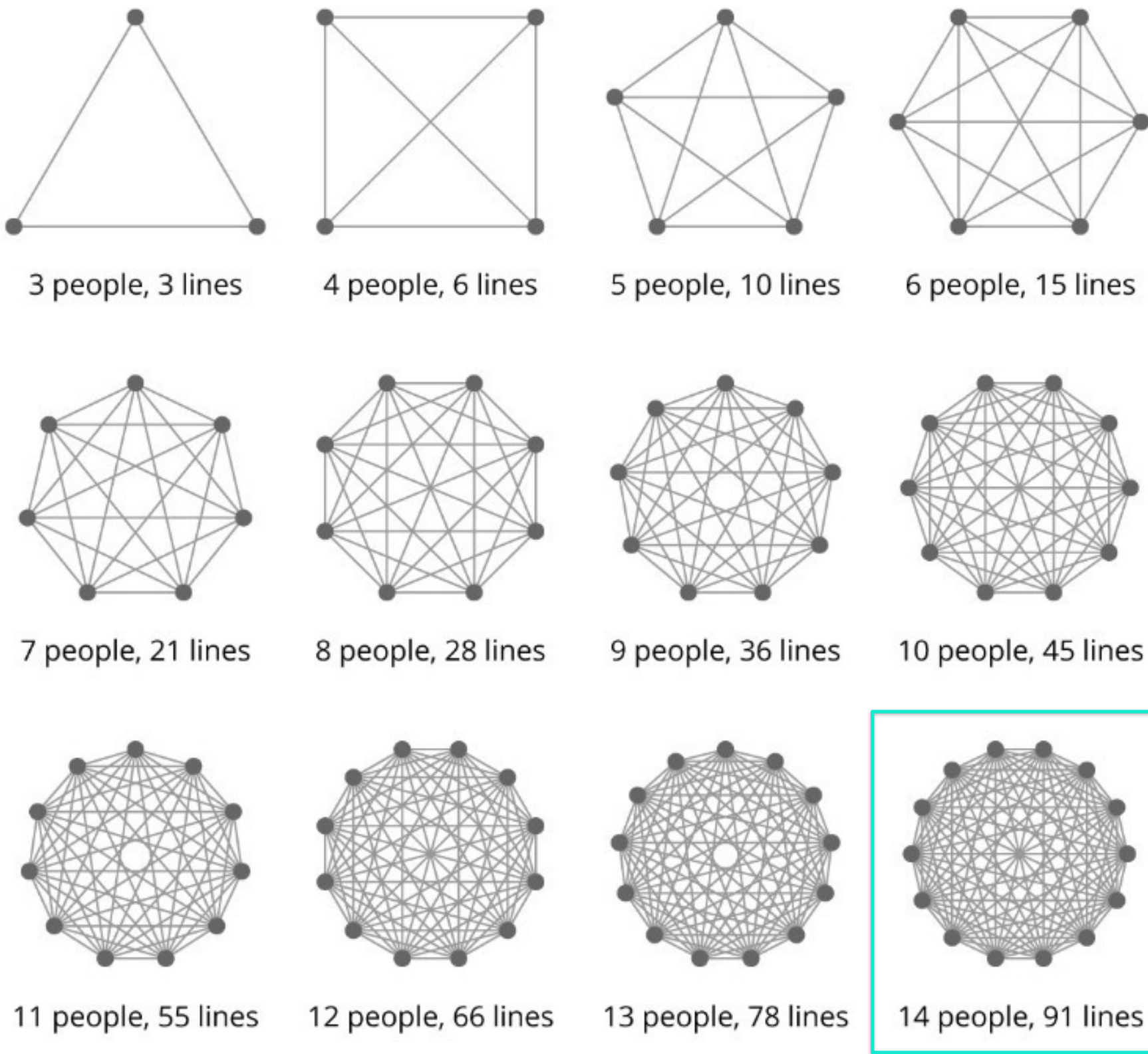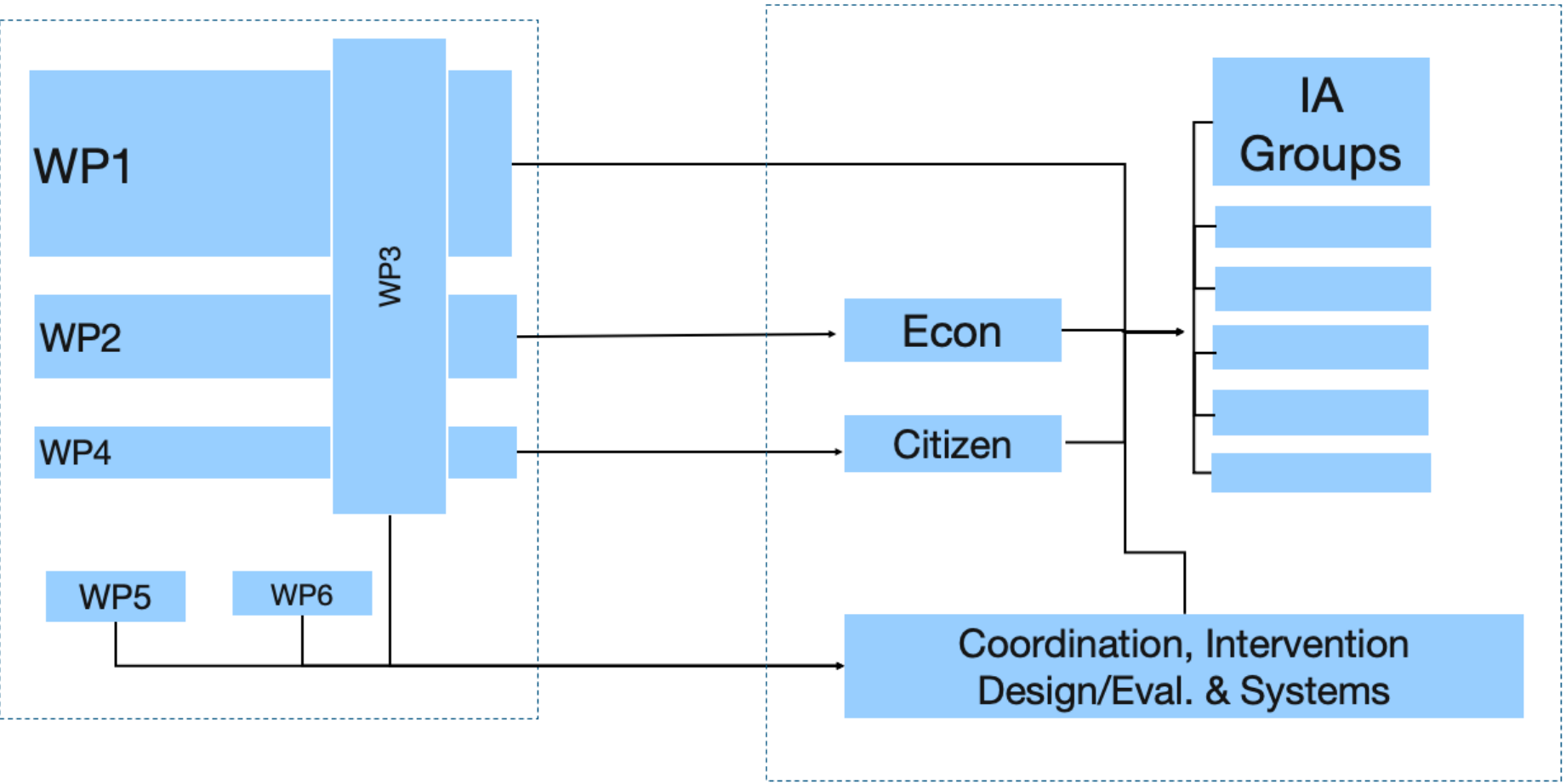- Penoyre & Prasad

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

## Phase I

## Re-structuring for Phase II





3 people, 3 lines    4 people, 6 lines    5 people, 10 lines    6 people, 15 lines

7 people, 21 lines    8 people, 28 lines    9 people, 36 lines    10 people, 45 lines

11 people, 55 lines    12 people, 66 lines    13 people, 78 lines    14 people, 91 lines

**What do we mean by 'health'?**

| | | |
|---|---|---|
| Healthcare | < > | Public Health |
| Individual | < > | Population |
| General | < > | Inequalities |
| Biomedical | < > | Wellbeing |
| Physical | < > | Mental |
| Opportunities | < > | Outcomes |
| Right to | < > | No right to |
| Human | < > | Planetary |

Coggon J et al. (2022) **Early conceptualisation work: 8 'dimensions' of health?** [Unpublished]

Numerous language issues
*(even those for whom it's a first language)*

- *Inter*disciplinary / *trans*disciplinary (ID/TD)
- Co-production (co-design? co-create?)
- Impact
- Knowledge broker
- Etc.

**What do we mean by 'upstream'?**

National policy-making

International governance, global competition, flows of finance

Policy

Governance
City
Private

Controls
Land
Finance
Delivery

Key decisions

**Upstream**

?

Planning, architecture, engineering, urban design

Public Health & Sustainability Specialists

Planning Permission

Commonly understood definition

Urban environments

*Midstream*

Human and **planetary health** outcomes

*Downstream*

Scally G, Black D, Pilkington P et al (2021) **The Application of 'Elite Interviewing' Methodology in Transdisciplinary Research: a Record of Process and Lessons Learned during a 3-Year Pilot in Urban Planetary Health Research.** Journal of Urban Health. Springer. Open Access.

| | 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 | | |

**Management/admin support needed:**

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

**And all need time (i.e. funding)**

# Foundational understandings

**TRUUD**
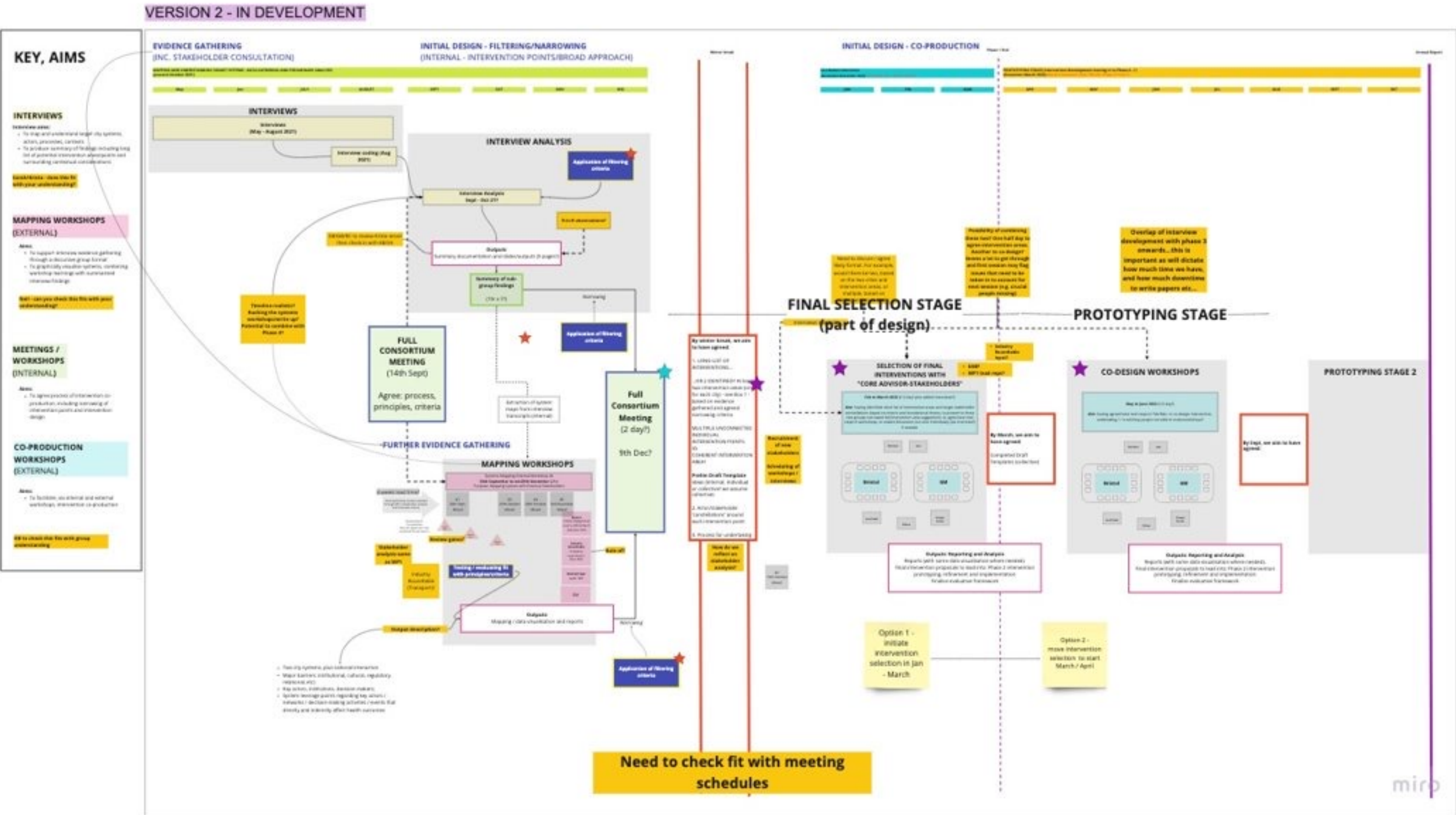
"despite its promise and many excellent individual examples, **most interdisciplinary research remains at the academic margins,** largely because understanding about such investigations is fragmented"
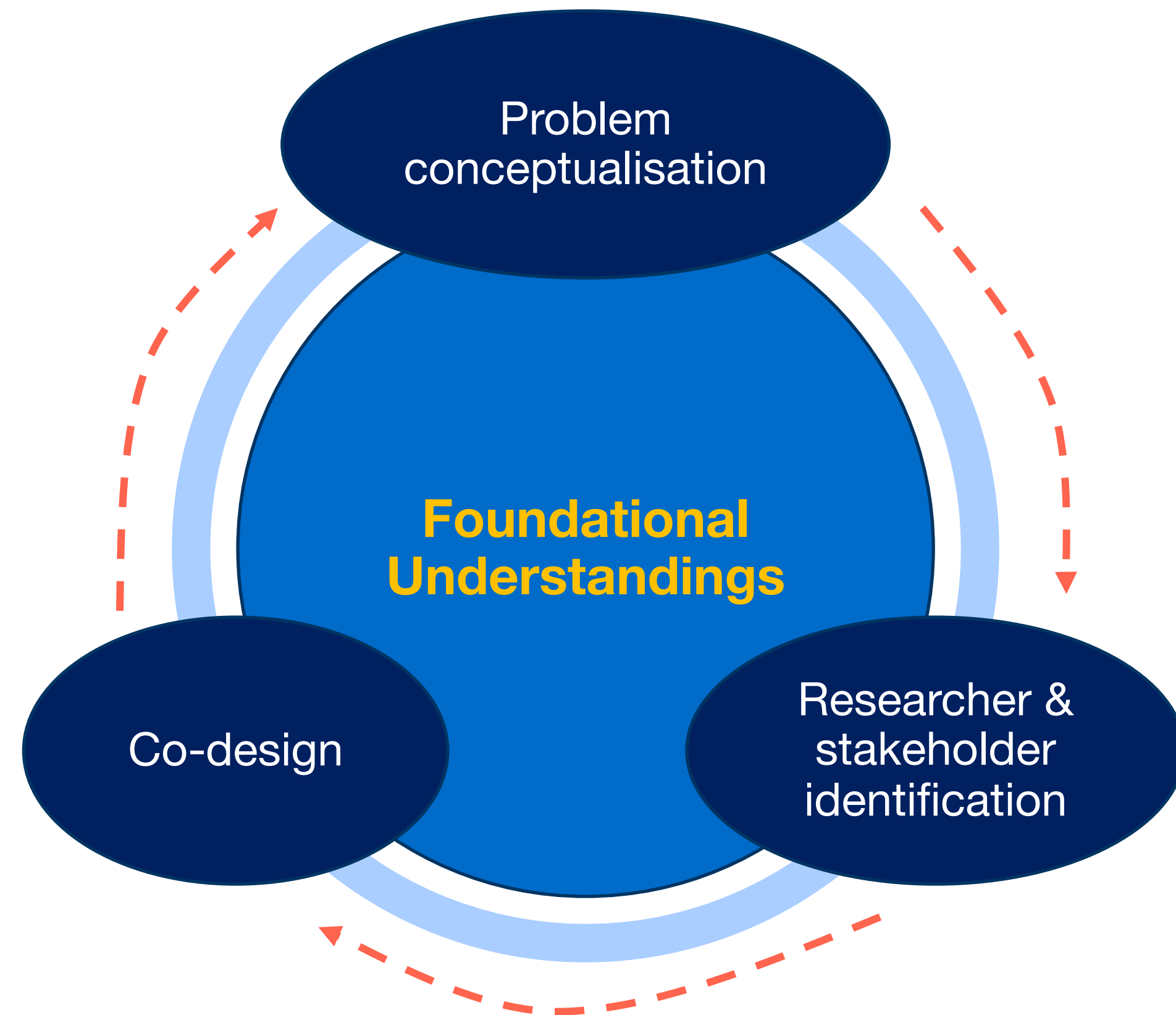
*(Bammer G, 2013)*

"**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)*

Problem conceptualisation

Foundational Understandings

Co-design

Researcher & stakeholder identification

# PROBLEM IDENTIFICATION IN A COMPLEX SYSTEM

TRUUD

Tackling Root Causes Upstream of
Unhealthy Urban Development

UK Prevention Research Partnership

UKPRP
Prevention Research Partnership

**'Understanding the problem'** is a common and important part of most guidance on intervention development. It:
- is often the first stage in research,
- ensures that we have a thorough understanding
- helps researchers to be specific about the problem they want to change,



In traditional health research projects, the problem space researchers start in is likely to be fairly narrow and well-defined (but often very challenging!)
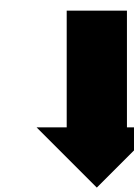
*Consensus in the research team:*

| | |
|---|---|
| What the problem is (roughly) | √ |
| How to investigate it | √ |
| Which stakeholders to engage | √ |

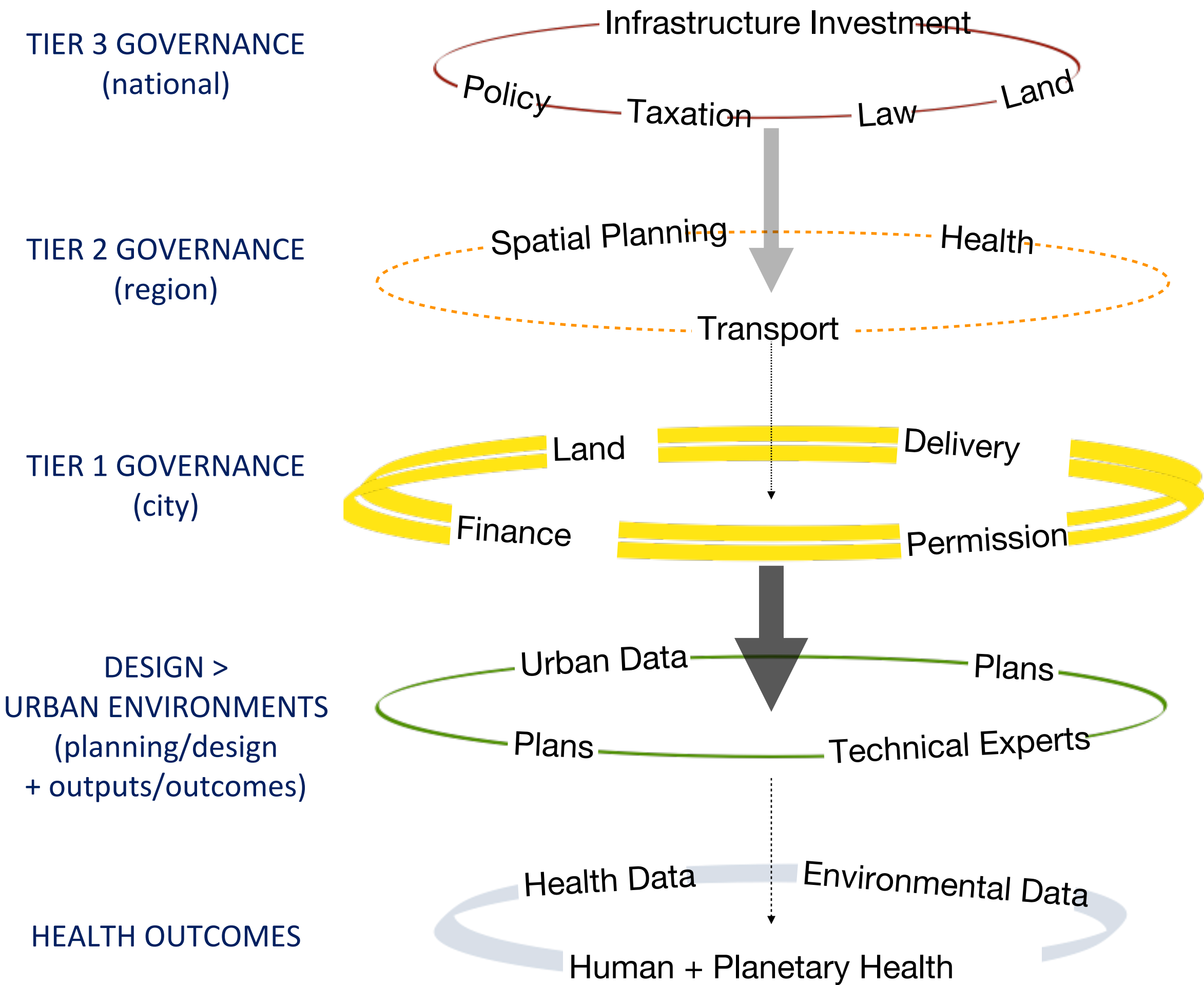**Challenges for problem identification in a large system**

As the scale of the problem space increases, so does:

- The number of specific problems the team could address,
- The potential directions that research could go in,
- The stakeholder groups involved,
- The expertise needed on the team,
- Research management challenges.

**The challenge**

The urban development system includes many subsystems and lots of problems that we could tackle to reduce non-communicable diseases.

*Representation of the UK urban development system*



TIER 3 GOVERNANCE
(national)

Infrastructure Investment
Policy    Taxation    Law    Land

TIER 2 GOVERNANCE
(region)

Spatial Planning    Health
Transport

TIER 1 GOVERNANCE
(city)

Land    Delivery
Finance    Permission

DESIGN >
URBAN ENVIRONMENTS
(planning/design
+ outputs/outcomes)

Urban Data    Plans
Plans    Technical Experts

HEALTH OUTCOMES

Health Data    Environmental Data
Human + Planetary Health

# More disciplines = more perspectives and ideas
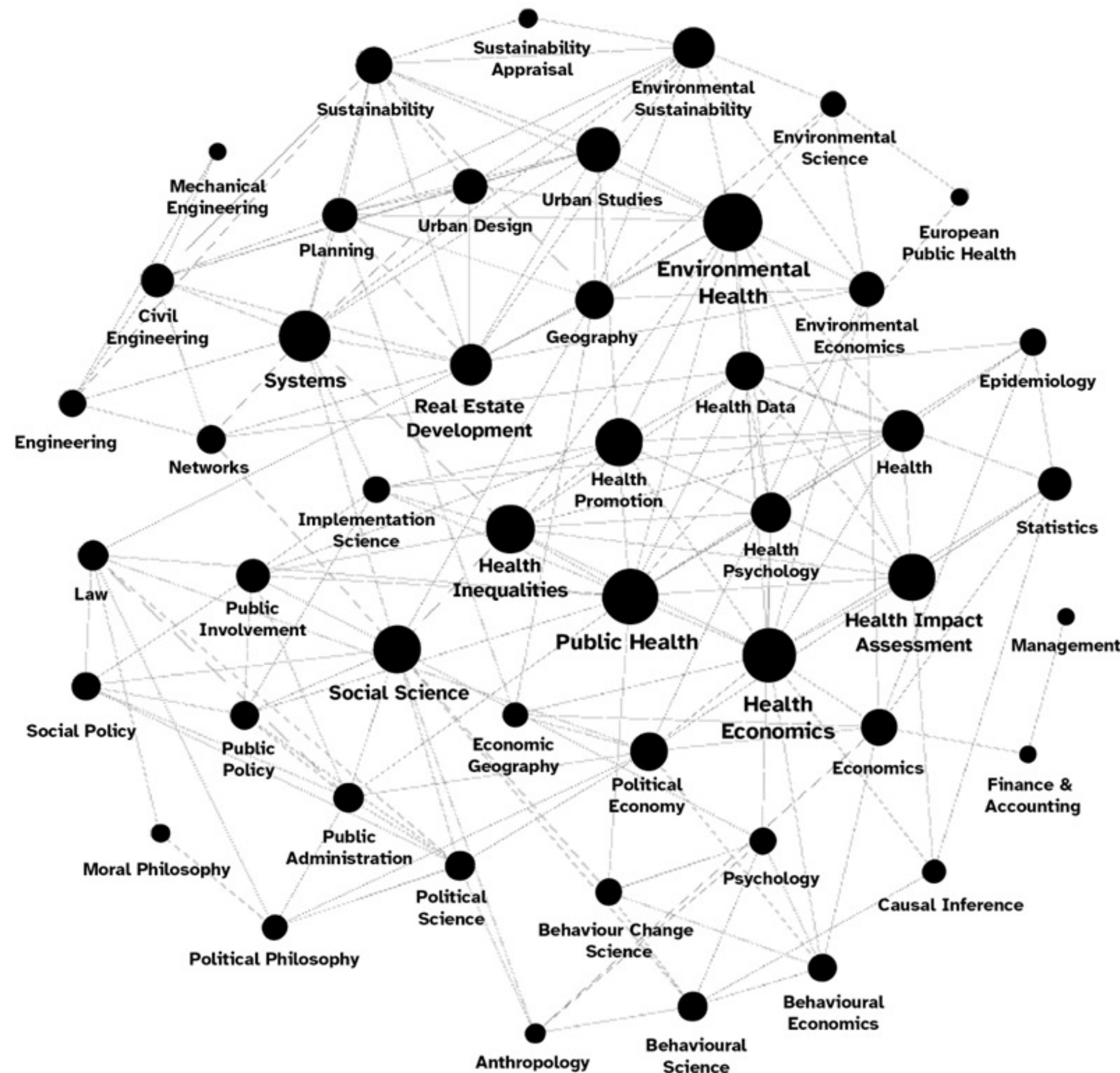


**Different backgrounds:** areas of expertise across the TRUUD team

From: Black D, Bates G, Ayres S, Bondy K, Callway R, Carhart N, Coggon J, Gibson A, Hunt A (2022) **Operationalising a large research programme tackling complex urban and planetary health problems: a case study approach to critical reflection.** Sustainability Science.

**What is 'good' co-production... and how best to do this when working in a complex system?**

- Stakeholders (those affecting, and those affected, by research) can and should shape research
- Good practice: including stakeholders from the start

But...
- Many stakeholders in a large system
- Equality in representation to avoid missing critical views (?)
- Narrow focus and limited understanding of the whole system
- Challenge in bringing together large numbers of busy people
- Limited opportunities – what is best use of engagement?
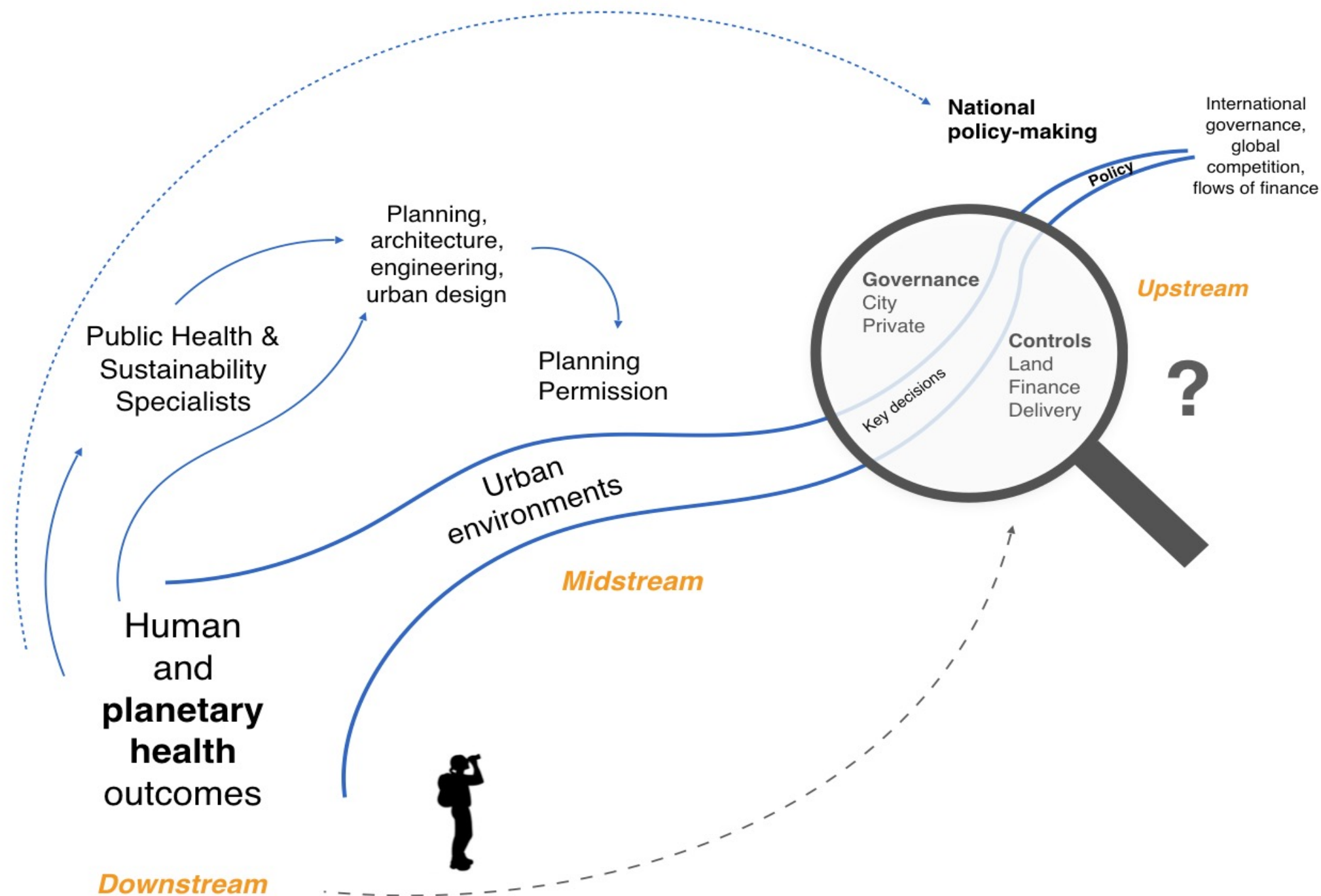
# Stakeholder identification & engagement

TRUUD



Scally G, Black D, Pilkington P et al (2021) **The Application of 'Elite Interviewing' Methodology in Transdisciplinary Research: a Record of Process and Lessons Learned during a 3-Year Pilot in Urban Planetary Health Research.** Journal of Urban Health. Springer. Open Access.

Many potential stakeholder groups across subsystems who could contribute to understanding the problem space

Extensive stakeholder mapping exercise undertaken

Knowing **who** to talk to and **when** to talk to them were significant challenges

*Research participants in TRUUD phase 1 interviews*

| Stakeholder primary role | Local/ Regional government | National government | Private sector | Third sector | Total |
|---|---|---|---|---|---|
| Property development | 5 | 2 | 24 | 0 | **31** |
| Urban planning | 15 | 3 | 5 | 3 | **26** |
| Finance | 0 | 3 | 18 | 0 | **21** |
| Transport | 6 | 3 | 3 | 1 | **13** |
| Public health | 7 | 2 | 0 | 2 | **11** |
| Politician | 8 | 1 | 0 | 0 | **9** |
| Environment/ Sustainability | 3 | 2 | 1 | 1 | **7** |
| Other | 5 | 4 | 2 | 3 | **14** |
| **Total** | **49** | **20** | **53** | **10** | **132** |

Table from: Bates G, Barnfield A, Ayres S, Larkin C (2023) What types of health evidence persuade policy actors in a complex system? Policy & Politics, *in press*

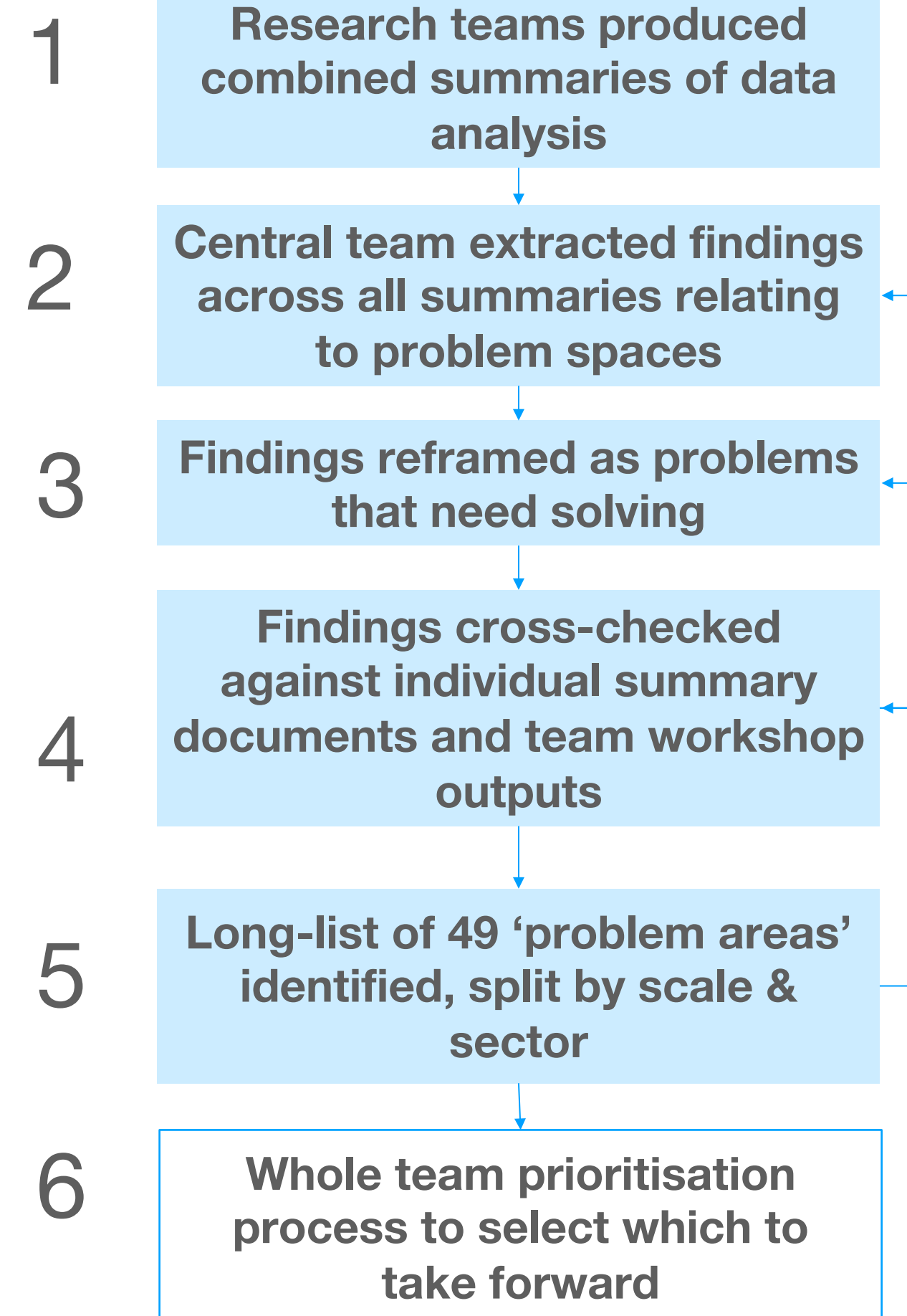How could we identify specific problems to address in the large and complex urban development system?

**Time**

**"All on the table"**

**Should**

**Could**

**Can**

## 123 interviews (main research)

- CAR CENTRIC CULTURE
- LOCAL AUTHORITY INFLUENCE
- PLANNING CLARITY/RESPONSIBILITY
- POLICY ALIGNMENT/COORDINATION
- PERIPHERAL ROLE OF HEALTH
- DIVERSITY & INCLUSION
- UNDERSTANDING HEALTH IMPACTS
- SHORT-TERM PROFITABILITY

## 30 interviews (pilot)

- VALUATION MECHANISMS
- FINANCE CONTROL
- LAND CONTROL
- PARTNERSHIP WORKING
- POLITICAL HORIZONS
- PUBLIC REALM
- POLICY/LEGISLATION
- CAPACITY (PUBLIC)

## 4 Systems Workshops

Categories of drivers affecting the consideration of health in urban development decision-making:

- COST AND VALUE
- STAKEHOLDERS/ IMPLICATIONS
- SKILLS & KNOWLEDGE
- HOUSING REQUIREMENTS
- PUBLIC ENGAGEMENT
- GOVERNANCE
- CHANGE
- HEALTH
- COLLABORATION
- REGS & REQUIREMENTS
- WIDER CONTEXTUAL FACTORS

## Researcher Integration Workshop

Highlighted need to focus on, e.g.:

- UNDERLYING CAUSES
- SHORT-TERMISM
- COMMUNICATION
- DECISION TOOLS/PROCESSES
- OPPORTUNITIES, NOT JUST PROBLEMS
- DOMINANT NARRATIVES (CLIMATE, LEVELLING UP, COVID)

1. Research teams produced combined summaries of data analysis

2. Central team extracted findings across all summaries relating to problem spaces

3. Findings reframed as problems that need solving

4. Findings cross-checked against individual summary documents and team workshop outputs

5. Long-list of 49 'problem areas' identified, split by scale & sector

6. Whole team prioritisation process to select which to take forward

Selection based on many factors:
- our evidence
- relevance to our 'mission'
- 'fit' with our team's expertise capacity & resources
- timeliness and opportunity
- potential for impact

| Intervention Area grouping | Intervention Areas (Included in the 'top ten' out of the long list within each sector/scalar group) | National - City (Property) | City - Project (Frome Gateway) | National – Combined Authority (Transport) | Combined Authority – Plan (Streets for All) |
|---|---|---|---|---|---|
| Awareness/ data | Health not sufficiently prioritised in national funding | | | 🟡 | |
| | Lack of understanding about what form healthy urban development should take | 🟢 | | | |
| | Lack of data on local residents' perceptions and experiences | | | | 🟢 |
| | Lack of health data linked to different forms of development (e.g. JSNA) | | 🟢 | | 🟢 |
| | Lack of legal confidence/ expertise of local authorities | | 🟡 | | |
| | Lack of awareness of health 'premium' and affordability impact | | 🟡 | | |
| Mechanisms & Standards | Urban development standards ineffective | 🟡 | | 🟡 | |
| | Lack of tool/ mechanism for valuing health | | 🟢 | 🟡 | 🟡 |
| | Health not sufficiently represented in KPIs | | | 🟢 | 🟡 |
| | Health insufficiently accounted for in transport appraisal | | | 🟢 | 🟡 |
| Policy (public) | Lack of leadership, culture, and ambition to prioritise health | 🟢 | | 🟡 | |
| | Health is not prioritised by senior decision makers (to ensure wider co-benefits) | | 🟢 | 🟡 | |
| | Use of health evidence in policymaking | | | 🟡 | |
| | Centre-local relationship, imbalance of power, and resources in local government | 🟡 | | | |
| | Lack of systems thinking in policymaking | 🟡 | | | |
| | Health not sufficiently prioritised across all (local gov) plans | | 🟢 | | 🟡 |
| | Differences in interpretations of planning policy & health amongst local partners | | | | 🟡 |
| Policy (private) | Viability locks in bare minimum | 🟢 | 🟡 | | |
| | Lack of incentives for private sector to prioritise health outcomes | | 🟢 | | |
| Public engagement | Lack of public engagement with national policymaking | | | 🟡 | |
| | Community engagement not valued; communities disempowered | | 🟡 | | 🟡 |
| | Lack of public understanding and trust | | 🟡 | | |
| | Consultation not early or deliberative enough | | 🟡 | | |
| | Lack of understanding about what 'good' public engagement looks like | | 🟢 | | |
| Regulations | Lack of regulatory requirement for valuing health | 🟡 | | 🟡 | |
| | Health is not prioritised in urban development regulation/ policy | | | 🟡 | |

# QUESTIONS FOR YOU

Given research challenges (large team, complex 'systems of systems', management, etc.)...

**How can problem identification be optimised through stakeholder engagement?**

**Example prompts**:

- How do you agree, collectively, on the problem?

- How do you know if you've identified the right people?

- How do you manage limitations of engagement?

- How do you know your system boundary setting is optimal?

- How important is this whole area?

**'Meta'**:

- How relevant / important is this whole area?

# RECOMMENDATIONS

# Critical Reflections:
## Our 10 'bespoke' criteria

**TRUUD**

## 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

## OUR HEADLINE RECOMMENDATIONS FOR MANAGING PROBLEM IDENTIFICATION IN LARGE TEAMS:

1. Factor in (far) more time than you would expect
2. Seek out funders who understand
3. Build confidence in working with uncertainties and unknowns
4. Invest substantially in coordination and communications
5. Ensure a 'psychologically safe' environment
6. Engage in rigorous and (constructively) critical reflection

Black D, Bates G, Ayres S, Bondy K, Callway R, Carhart N, Coggon J, Gibson A, Hunt A (2022) **Operationalising a large research programme tackling complex urban and planetary health problems: a case study approach to critical reflection.** Sustainability Science.

# Acknowledgements