HOW CAN SYSTEMS THINKING HELP LEARNING CITIES OVERCOME HEALTH CHALLENGES?

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3RD INTERNATIONAL CONFERENCE ON LEARNING CITIES

THEMATIC FORUM I: PROMOTING LEARNING FOR GREEN AND HEALTHY CITIES

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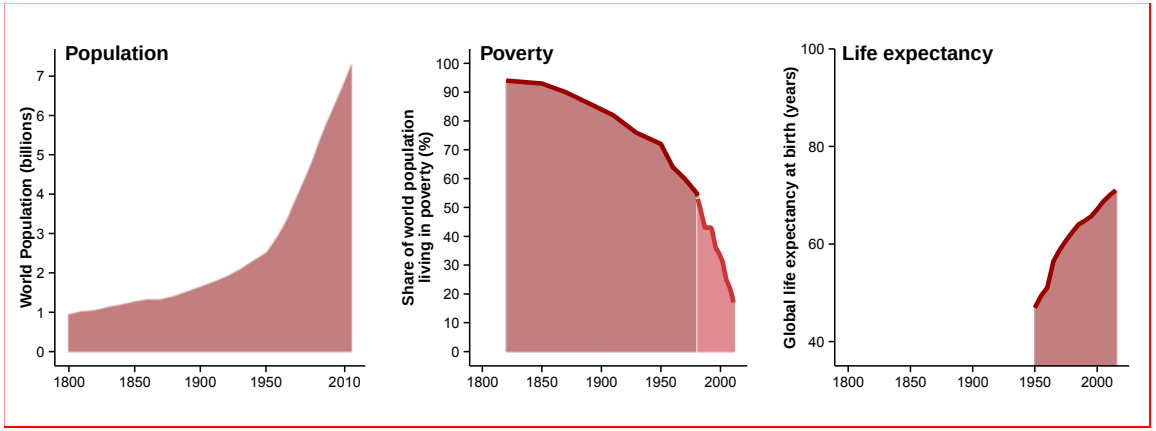
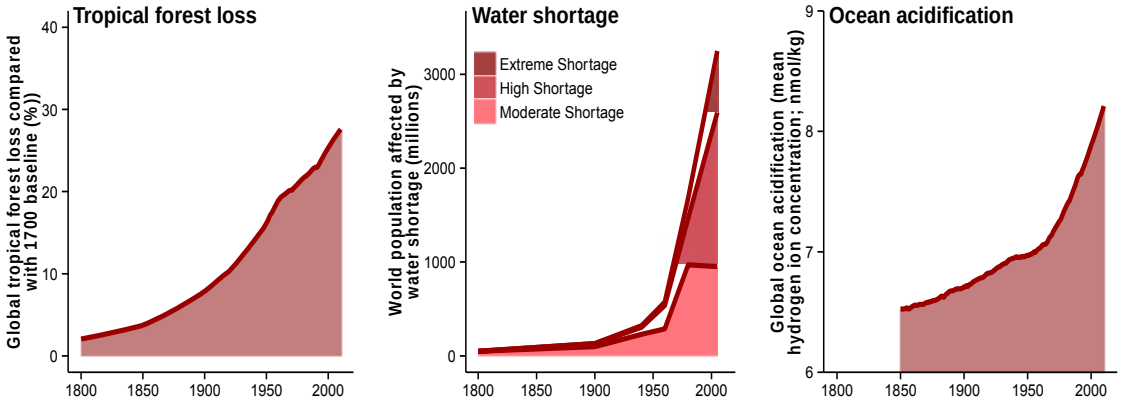
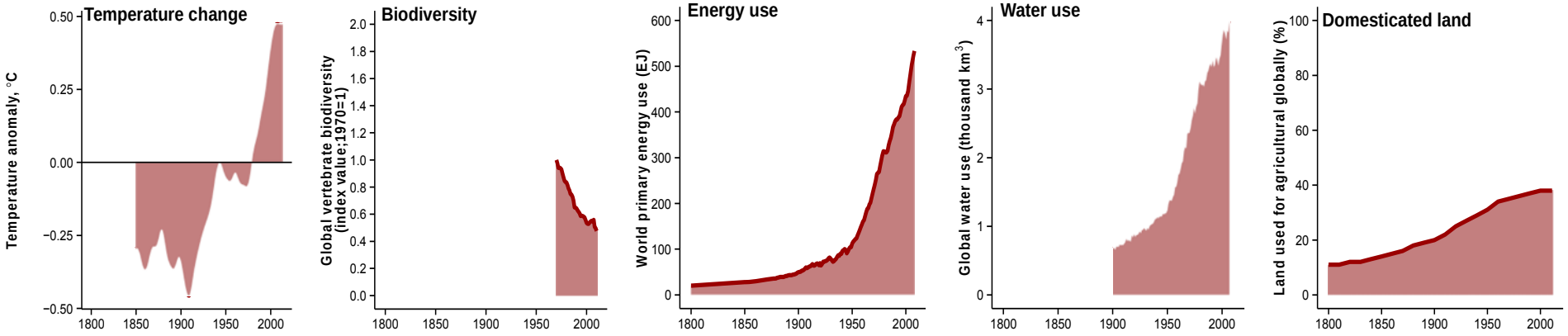
PLANETARY HEALTH





Source: Report of the Lancet Commission on Planetary Health



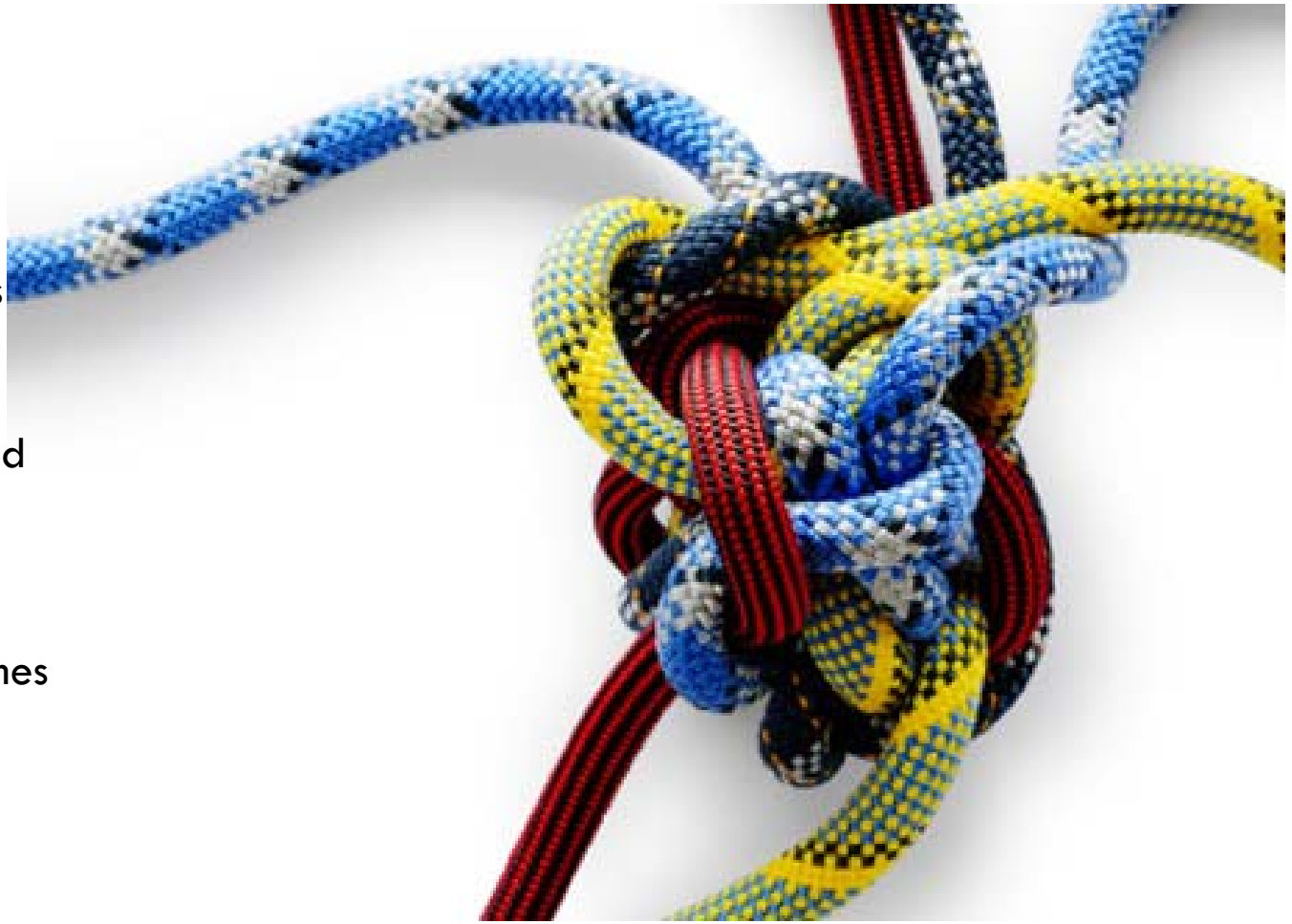
(UN)HEALTHY CITIES?

- Better health in cities & yet…
  - Obesity/overweight & NCDs
  - Climate-related risks
  - Mental health issues
  - Pollution-related illness
  - Tobacco/substance use
  - Road traffic accidents
  - Crime and safety
  - Antibiotic resistance
  - Dengue
  - Influenza and others…
  - Inequities

Source: Fredrik Rubensson, http://commons.wikimedia .org/wiki/File:HarbinChinaSmog_121226.

SYSTEMS PROBLEMS

- Characteristics
  - Detail and dynamic complexity
  - Multiple stakeholders
  - Multiple scales
  - Cross-sectoral/related to other problems
  - Resistance to change
  - Unanticipated outcomes



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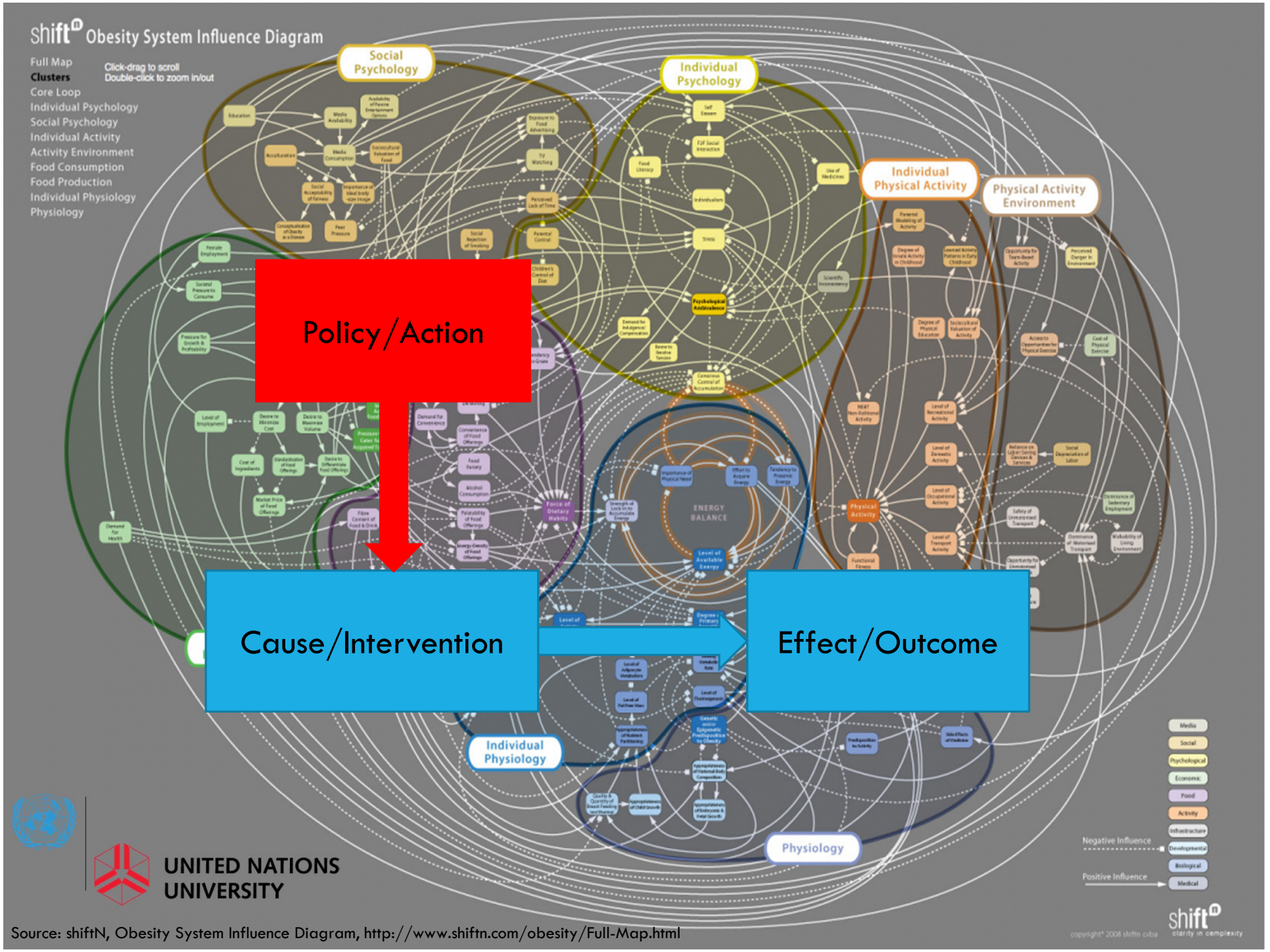
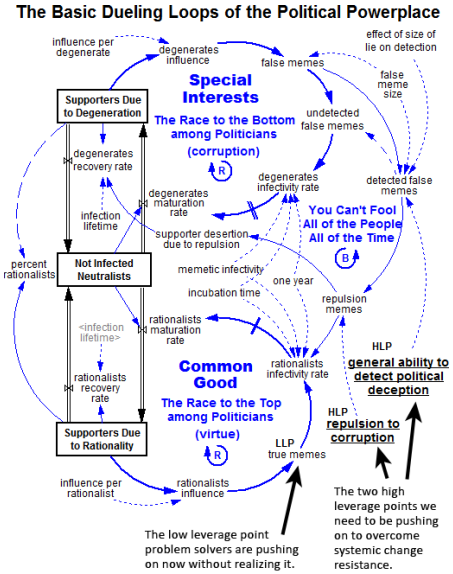
Source: http://www.innovationmanagement.se/2010/06/14/complexity-science-and-innovation/

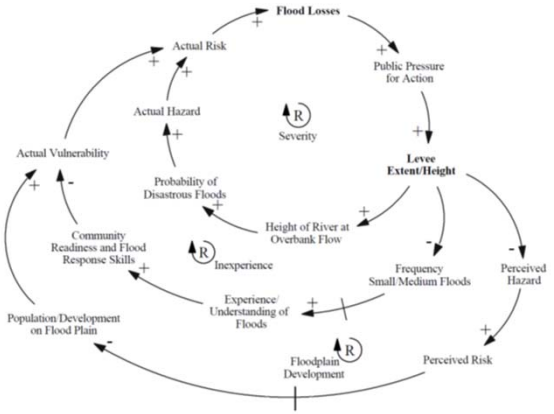


Source: shiftN, Obesity System Influence Diagram, http://www.shiftn.com/obesity/Full-Map.html

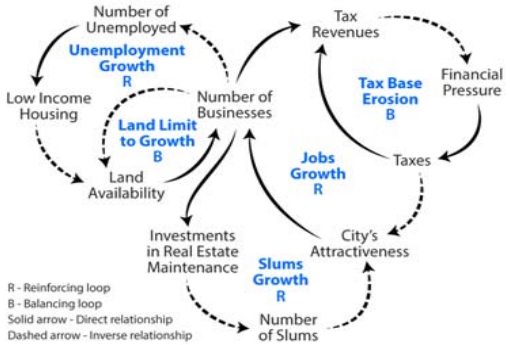
FEEDBACK



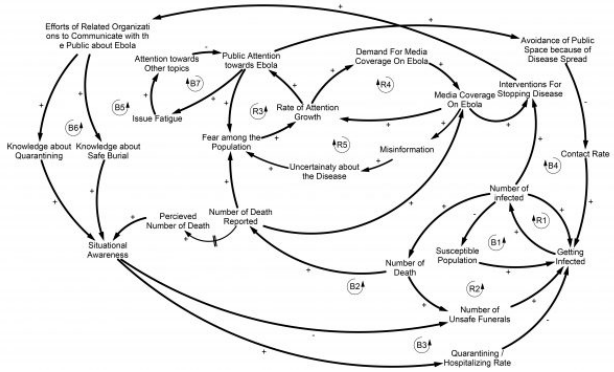
Source: Harich, 2012, http://www.thwink.org/sustain/articles/005/DuelingLoops.pdf



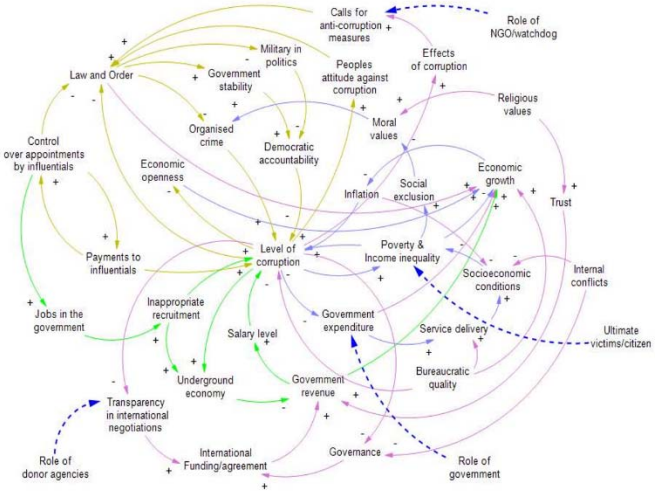
Source: Newell and Wasson (2002), Social System vs Solar System: Why Policy Makers Need History.



Source: http://www.thwink.org/sustain/glossary/SystemDynamics.htm, originally published in *The Systems Thinkier*, v4 (7), 1993, drawing on work from Forrester, *Urban Dynamics*, 1969.



Source: Sharareh et al., http://currents.plos.org/outbreaks/article/the-ebola-crisis-and-the-corresponding-public-behavior-a-system-dynamics-approach/



Source, Ullah et al., https://www.semanticscholar.org/paper/Enhancing-the-Understanding-of-Corruption-through-Ullah-Arthanari/251fd59ba9ff371a46f6d749a5c148647eb5c918

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HEALTH IS CENTRAL TO SUSTAINABLE DEVELOPMENT

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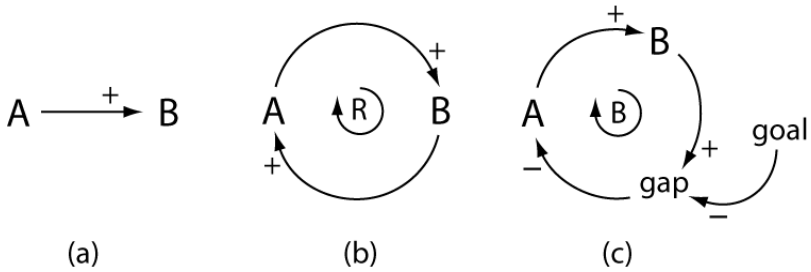
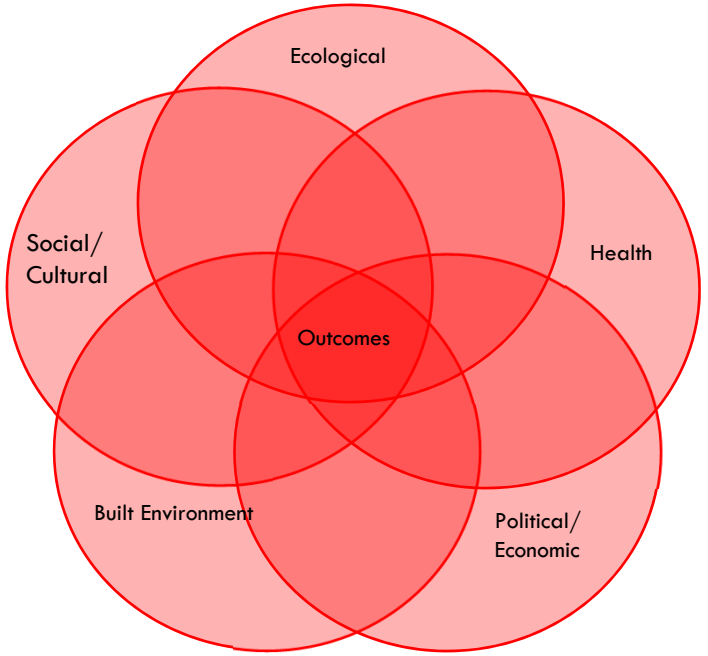
SYSTEMS APPROACHES



- Systems methods to:
  - Characterize and measure feedback
  - Identify leverage points for action
  - Forecast likely outcomes and compare policy scenarios
- Broad engagement to:
  - Improve communication
  - Provide more complete understanding of systems
  - Assess feasibility of actions
  - Promote stakeholder ownership



Based on Batterman et al (2009). Sustainable Control of Water-Related Infectious Diseases: A Review and Proposal for Interdisciplinary Health-Based Systems Research

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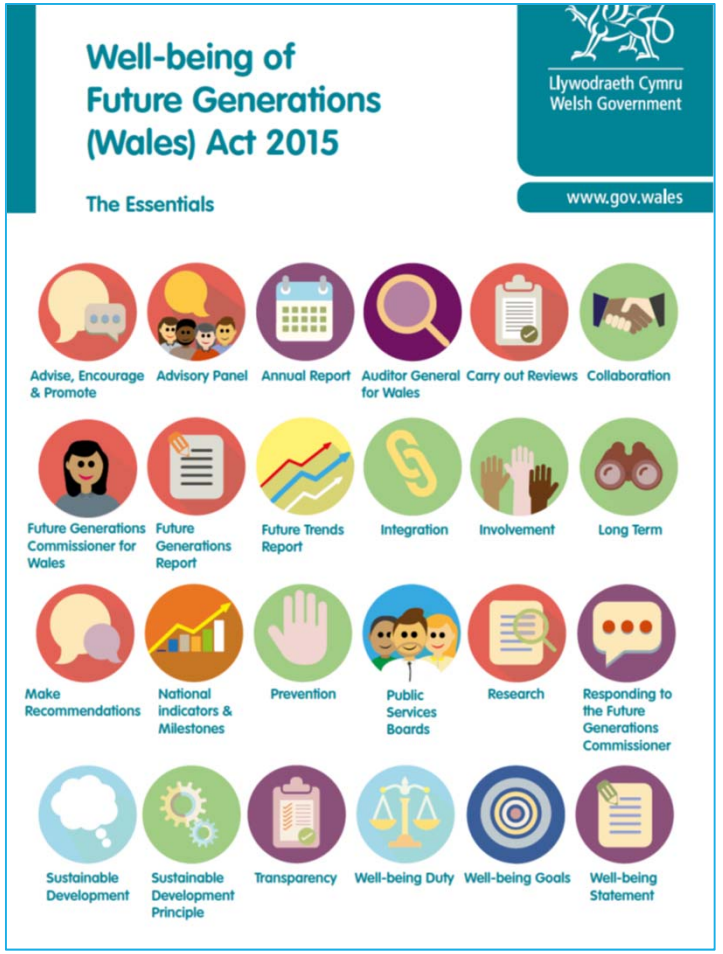
HOW CAN LEARNING CITIES OVERCOME HEALTH AND SUSTAINABILITY CHALLENGES?

- Adopt a systems thinking framework for decision-making
  - Consider feedbacks/complexity
  - Foster connections
- Improve the data
  - Conduct health impact assessments
  - Seek knowledge from all stakeholders
  - Experiment and document rationale/outcomes



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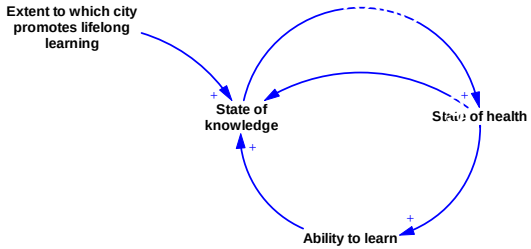
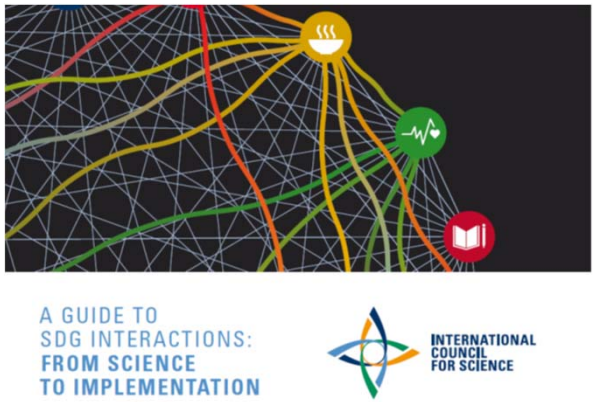
HOW CAN LEARNING CITIES OVERCOME HEALTH AND SUSTAINABILITY CHALLENGES?

- Identify important local linkages
- Disseminate insights through lifelong learning
  - Teach learners to conceptualize simple feedback
  - Promote complementary learning
  - Develop interdisciplinary ambassadors
- Ensure that learning loops work
  - Evaluate cross-sectoral engagement and transdisciplinary processes
  - Evidence of adaptation





https://www.icsu.org/publications/a-guide-to-sdg-interactions-from-science-to-implementation

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HOW CAN LEARNING CITIES OVERCOME HEALTH AND SUSTAINABILITY CHALLENGES?

- Implement well-understood interventions
  - Green/public space
  - Public/active transport
  - Mixed use development
  - Renewable energy
  - Participatory governance

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SOME BENEFITS OF SYSTEMS THINKING

- Can **improve accuracy** of policy models
- Provides for **assessment where data is limited** or in new contexts
- Allows for **evaluation of simultaneous interventions** by many actors
- Illuminates **long-term outcomes** which are otherwise invisible
- Fosters **relationships** between policy-makers and researchers, allowing simpler and more effective communication
- Builds **linkages across sectors,** allowing more relevant expertise to be applied
- Ensures that research addresses **real problems, feasible interventions**
- Generates **accountability** among involved decision-makers
- Makes for **good narratives**

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