



Applying a systems approach to sustainable living places: 6 lessons learned

There are many ways (techniques, models, tools) of applying systems approaches. The choice of approach should always start with a consideration of the **needs or purpose being addressed and the nature of the problem** (what is known, what is not, the diversity of perspectives and so on).

The Sustainable living places (SLP) project applied the Acumen+ systems approach, which is based on techniques for qualitative, participatory mapping of systems, to the housing and infrastructure system. The process has brought into focus interactions between the current system for planning and funding at national level, the context for local planning, the role of residents and developers, and the potential role that a shared sustainability agenda might play in driving change across all levels of government. Lessons from this work may have broader application to other complex policy problems. The full report is available here

The study identified several leverage points that serve as starting points for improving the system to deliver SLP.

- a. Encouraging the development of a sustainability agenda around net-zero.
- b. Facilitating support for local planning and better master planning.
- c. Providing a flexible funding model to enable holistic business cases for place.
- d. Providing technical and financial support to planners in local authorities to address internal barriers to good master planning and delivery.
- e. Harnessing the power of data sharing.

Leverage points draw attention to areas in the system where interventions would strongly influence different parts of the system. These are starting points for exploring where interventions might have greatest impact and where unintended benefits and consequences could result.

The nature of complex problems means that they are not amenable to simple solutions and may require legitimate power to enact systemic change. Systems approaches do not provide a 'silver bullet': They do not provide a quick answer to fix the problem, or a simple solution. They provide a process for synthesis of multiple perspectives situated within a system and the dynamics by which system-level properties and behaviours emerge.

Systems approaches therefore provide a means of probing, learning and honing in on potential solutions in a way that gives due attention to the relevant perspectives and emergent, system-level properties of the system. It is also important to note that perspectives would need to be appropriately weighted. Nevertheless, several challenges in deploying a participatory systems approach emerged from this project. These are outlined below.

The participatory process is fairly resource intensive: A successful systems approach to inform policy development requires continued and iterative engagement with stakeholders. Managing these expectations and planning with stakeholders is important for maintaining long-term stamina, interest and participation. This includes the process of scoping, developing an understanding of the system, identifying leverage points, and understanding unintended benefits and consequences. This is an important consideration where quick policy solutions are required or where there is pressure to deliver. Engagement and planning at early stages can enable faster delivery.



Qualitative system dynamics mapping is not a predictive tool: The approach presented in this paper can be used to inform a common articulation of the system but cannot be used for forecasting or predicting impact. Following on from development of the system map, further work can identify the strength of the linkages and their relative importance to inform prioritisation. At this stage, this would be useful for testing the potential leverage points through scenario analyses as opposed to generating predictions.



The range of stakeholders involved at a given point in time limits the scope: The perspectives reflect a view of the system from a select (albeit diverse) group of stakeholders and provide a snapshot at a given point in time from a specific context. The map's output reflects the diversity of stakeholders at that point in time. The focus on the planning and governance aspects skewed the map to focus on the early stage of new developments (pre-planning approval) rather than focusing on financing and delivering through the infrastructure financing and construction phases.

There was also evidence in the early discussions that the description of developers as being homogenous defies the inherent diversity in the types of developers, their scale, business models and the levels of influence they may or may not have. These lessons learned and limitations are documented for further exploration in future work.

The focus is on causal relationships, rather than other dynamics of the system: The mapping exercise focuses on causal relationships where there may be illustrations that reflect the relationships more astutely. For the report, care has been taken to develop and include a narrative that describes how these relationships operate and could be developed further through qualitative methods to discuss the context around each relationship. There are other types of relationships that could be explored.



The process of change required is not obvious: This descriptive approach to the system provides the big picture dynamics from which the policy challenge emerges. However, it may not always provide the interim steps for how change could be implemented. There are other diagnostic methodologies that can provide a process for change. This is where an innovation process for problem-solving for example, theory of change, that frames the problem in the context of systems thinking, would be particularly complementary. There are several options and the choice should reflect the ultimate objective.

In creating a big picture view, detailed representations of sub-systems may not emerge: While the approach applied in this project provides a big picture view of the system, this case did not delve deeply into the systemic issues facing specific sub-sectors (such as transport, electricity, water). While there were representatives from across these different sectors and other stakeholder groups (such as ageing, placemaking, design), the detail of the dynamics of these sub-systems is less visible. This is partly a reflection of the main themes arising from workshop participants and partly a reflection of the aspects of the system that were prioritised for discussion and/or where there was consensus. Exploring these subsystems in more detail and/or with a policy question specific to that sector would help to explore these subsystems more fully.

The document draws extensively from the final report *Sustainable Living Places – a systems* perspective on planning, housing and infrastructure that was released July 2020.

The full report is available here.

If you have questions, comments and/or want to get involved, please direct enquiries to nepc@raeng.org.uk





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