



**Llunio Lleoedd**  
ar gyfer Llesiant yng Nghymru  
**Shaping Places**  
for Well-being in Wales

# Applied Systems Thinking Approach

## Guide



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# Contents

**Introduction to this guide** 4

**Navigating this guide** 5

**Context** 6

Why a systems thinking approach? 6

Systemic and systematic thinking 6

Principles in systems approaches 7

Collaborating with your PSB and relevant others 7

Systems thinking approaches and the Well-being of Future Generations (Wales) Act sustainable development principle 8

**Applied Systems Thinking Approach** 9

Themes for learning groups 10

Activity 1: Defining the system-of-interest 10

Activity 2: Mapping the system 12

Activity 3: Exploring the system 13

Ways you can use a systems map 13

Activity 4: Describing the desired change 15

Activity 5: System evaluation 16

**References** 17

**Contact details** 18



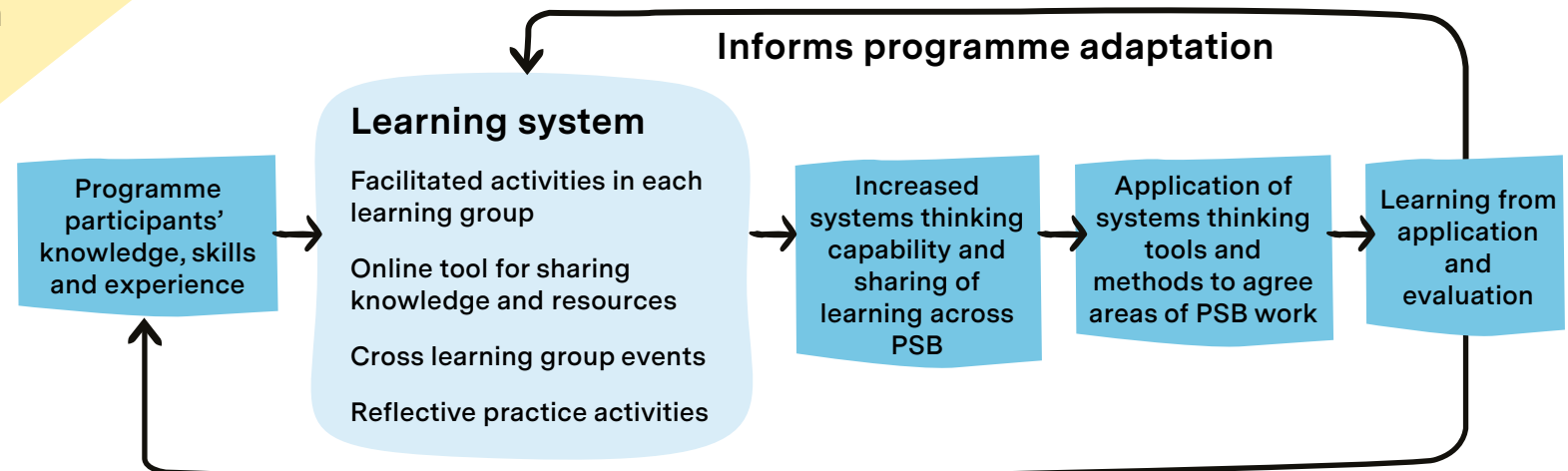
## Introduction to this guide

This guide gives you an overview of the Applied Systems Thinking Approach you will be using in your learning group and to support the work you do with your Public Services Board (PSB). The guide is designed to be used in tandem with the tools and methods guide. There is also a systems approach glossary of terms which will help familiarise you with the language in the programme. By using these guides and working with your learning group colleagues and facilitators you will be creating your own system for learning.

The guide may also be of value to partners who are interested in setting up a learning group to apply a systems thinking approach to a complex challenge.

*“A learning system enables a group of people to come together to share and learn about a particular topic, to build knowledge and speed up improved outcomes” (1)*

### Shaping Places for Well-being in Wales programme as a learning system



## Navigating this guide

We use these icons throughout this guide and other resources and have suggested additional reading if time allows.



**Participant activity**



**Tools and methods guide**



**Participant reflective learning activities**



**Additional reading and resources**



**Conversations and sharing learning**

## Context

### Why a systems thinking approach?

There has been a growing interest in the application of systems thinking approaches for understanding and making improvements to many of the challenges in society today (2). This is because challenges such as climate change adaptation, poverty and reducing vehicle emissions are complex, interrelated and involve uncertainty. Defining the nature of these challenges and their solutions involves understanding and managing diverse perspectives. Traditional ways of understanding and managing these challenges such as project or programme management and setting targets has not proved to be a particularly effective way of responding to complex challenges (3).

### Systemic and systematic thinking

Through participating in a learning group, this is an opportunity for you to strengthen your ability to think and act both systemically and systematically.

**Systemic thinking** is the ability to think relationally – that is to put things into a context and to consider their

relationships (4). Through your education and work experiences you will have become skilled at systematic thinking. In contrast to systemic thinking, **systematic thinking** focuses on looking at parts and is associated with a step-by-step linear approach.

In systems thinking practice the skill is to be able to move back and forth from systemic thinking to systematic thinking. A useful metaphor for thinking about this is when you use a zoom lens on a camera. If you want to look at the scene as a whole you zoom out, whereas if you want to look a part of the image in detail you can zoom in.

### Systematic thinking



By zooming in we can see the detail of a part of the picture. In this example the person taking a picture but we cannot see the context.

### Systemic thinking



By zooming out we can see what the person is taking a picture of and the relationships between parts of the image.

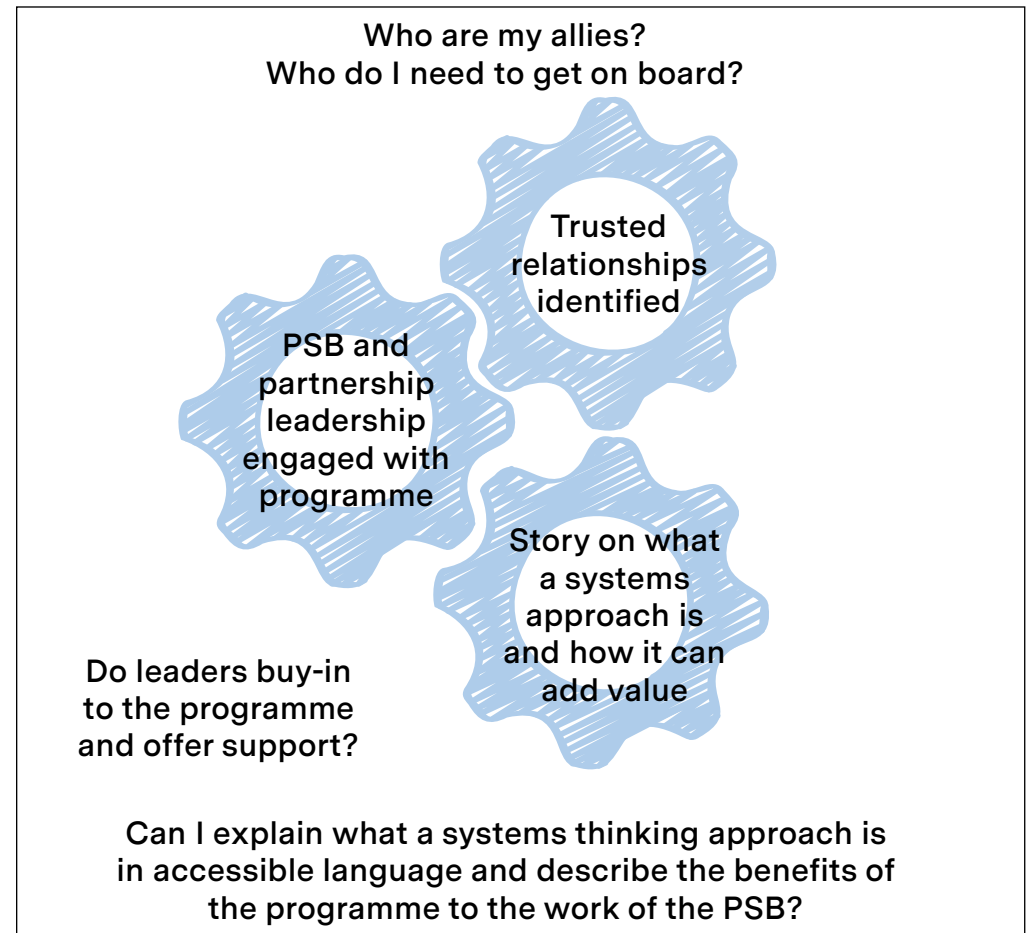
### Principles in systems thinking approaches

Although there are many systems thinking approaches in the literature, there are three broad principles which underscore most approaches – interrelationships, diverse perspectives and boundary judgements. The programme draws on these principles and aspects of systems dynamics, soft systems methodology and critical systems heuristics.

Interrelationships	Diverse perspectives	Boundary judgements
Understanding relationships and dependencies between factors in an observed system	Actively engaging with diverse perspectives on a situation or issue	Decisions made on factors to include or exclude in a defined system  Decisions made on who to include or exclude in defined system. These include those affecting and affected by a change in the system

### Collaborating with your PSB and relevant others

The diagram shows the conditions which are important when working with others to embed a systems thinking approach. The programme recognises that PSB are at different levels of maturity, and that some have already started using systems thinking approaches to understand and act on objectives in their well-being plans.



## Systems thinking approaches and the Well-being of Future Generations (Wales) Act sustainable development principle

Taking a systems thinking approach can support your PSB to apply the 5 Ways of Working

### Ways of working How a systems thinking approach contributes

#### Integration



By focusing on the relationships between factors in a defined system, a systems thinking approach can support PSB to take an integrated approach.

#### Prevention



Systems thinking approaches can help to determine the root causes of complex issues which can help with prevention by addressing the cause of an issue, not the symptom.

#### Collaboration



Systems thinking approaches support collaborative efforts in navigating complex issues through using tools which help organisations understand their place in the system and how by working with others they can make positive changes to health and well-being outcomes.

#### Long-term



Systems thinking approaches focus on the dynamics in a system over time and how intervening in a system can have intended and unintended consequences for current and future generations.

#### Involvement



Using a systems thinking approach focuses on seeking diverse perspectives to understanding and taking action on complex social, economic and environmental issues.



Participant reflective learning activities



Programme glossary



Speak to colleagues about their understanding of the programme and systems approaches

## Applied Systems Thinking Approach

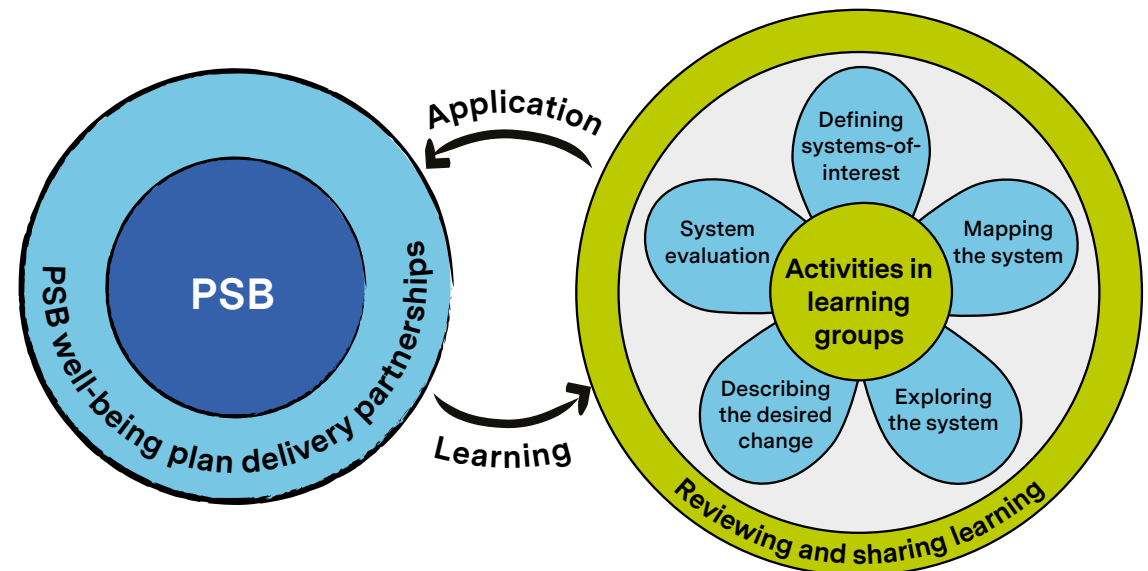
The Applied Systems Thinking Approach supports the application of systems thinking in practice. Your facilitators will guide you through the activities and work with you to adapt your approach to meet the needs of your PSB. The approach should be used in conjunction with the tools and methods guide, which will go into more detail. Your facilitators will also encourage you to reflect on your learning as you progress through the activities in the approach.

### Activities in the Applied Systems Thinking Approach

The next sections will guide you through the activities in the Applied Systems Thinking Approach. At different points in time, you will move back and forth between activities in the approach. This will happen both in the learning group and when you work with your PSB colleagues to apply these activities and integrate systems thinking to drive action into your PSB.

As this is an iterative approach it will be expected that participants will share learning and review progress on any agreed indicators both for the learning group and their participating PSB.

### Relationship between learning groups, Applied Systems Thinking Approach activities and application in local PSB contexts



## Themes for learning groups

Conversations with PSB have identified three themes for the learning groups to consider. Each learning group will consider one theme. These were selected based on commonality found across the well-being plans, and through a series of discussions on current activities and where there is evidence on actions which are likely improve health, well-being and equity outcomes.

### Themes identified from well-being plans

#### Theme one

**Climate and nature emergency**



#### Theme two

**Poverty and inequalities**



#### Theme three

**Neighbourhood well-being**



## Activity 1: Defining the system-of-interest

The themes identified by PSB are broad and contain many complex issues. To manage complexity, and to understand these issues better and how to respond, we can define a system-of-interest.

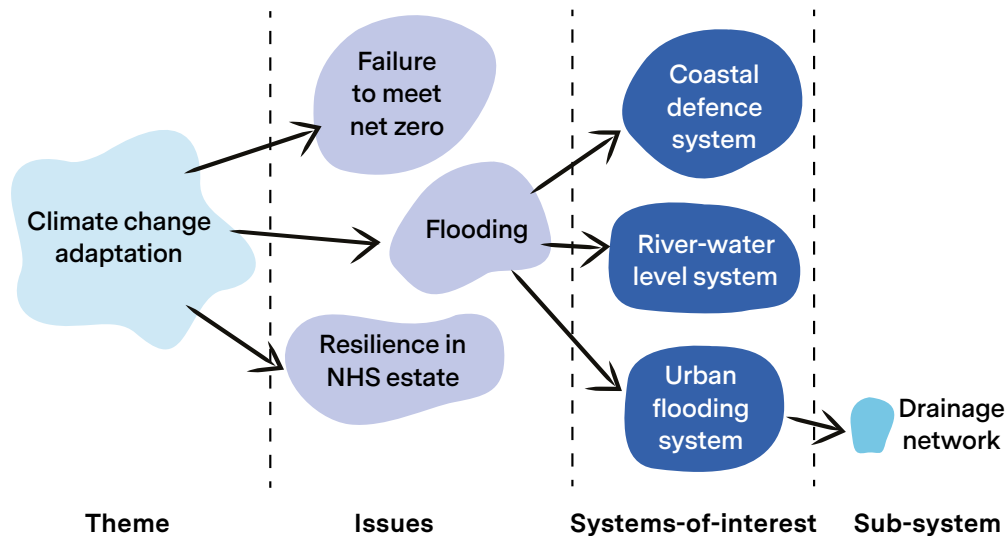
The diagram on page 11 shows a worked example of moving from a theme to situations of concern to a system-of-interest.

It is important that you consider what is in and out of your system-of-interest. With your learning group, you will decide where to assign system boundaries, depending on what the purpose of the system is. Your learning group may decide to keep the boundaries wide but after discussions with your PSB you might want to narrow the focus by focusing on one part of the system-of-interest (a subsystem). For example, in Figure 1, if your system-of-interest was a system to reduce urban flooding, one PSB might want to consider focussing on drainage networks, while another might focus on town planning and development. This might depend on the existing priorities of the PSB.

A key consideration is that you want to consider actionable complexity. If your boundaries are very wide – e.g. your system-of-interest was climate change adaptation in Wales, you may find you end up with a system map that contains hundreds of factors. This would make it very difficult to interpret map to identify areas for action and may leave partners you collaborate with feeling disempowered.

One tool that can help you when consider the boundary for your system-of-interest is context mapping. Context mapping will help you to consider what is in the sphere of influence within the work of your PSB and through collaborating with others.

### Example of defining a system-of-interest



		Context mapping Pig model
		Participant reflective learning activities
		See SPWW Microsoft Teams channel for additional reading
		Facilitated learning group session(s) Conversations with PSB colleagues

## Activity 2: Mapping the system

Systems mapping with relevant partners is an established method for providing a starting point for understanding different perspectives on the system-of-interest. Systems mapping is an umbrella term for a range of tools which allow you to look at the factors within your system-of-interest and the relationships between factors. The mapping exercise should be carried out by people with experience in facilitation and ideally undertaken face-to-face.

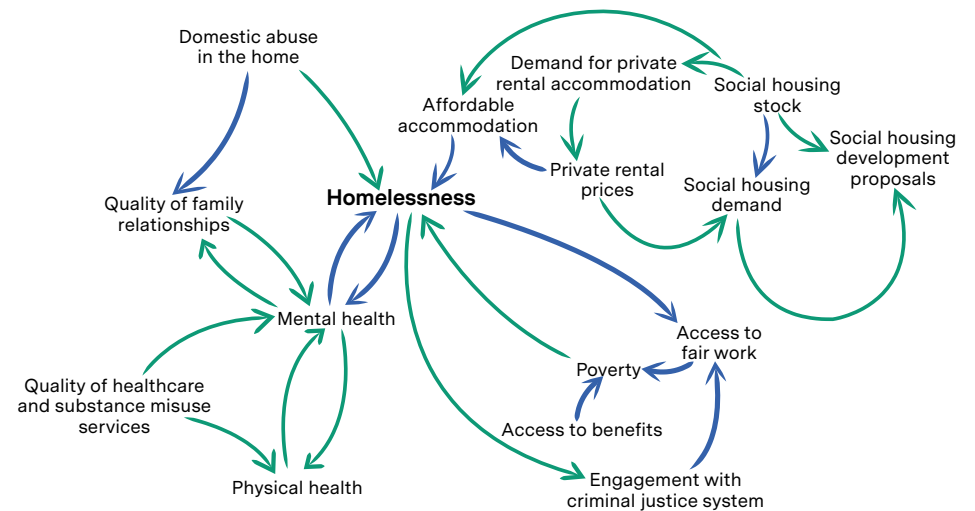
The systems map will act as a key touchstone for all ongoing activities in the programme and can be updated as the work progresses. It is ideally done with a wide range of partners, even those only tangentially related to the topic, to produce – in the first instance – a broad, informative picture of the many factors and actors involved.

The process of working to develop a map with others brings its own value. Stakeholders in mapping sessions will be able to see their role within the system-of-interest, how they connect to others, who else they could connect with, and how actions they take may have impacts across the system-of-interest.

The example shows a systems map illustrating factors affecting homelessness and the relationships between factors. You will notice the map is not exhaustive and you might feel there are other important factors missing.

The important point is that a systems map reflects the perceptions of those who created it. Choices will need to be made about the level of detail you need to work with your PSB colleagues.

### Example of a systems map to illustrate factors affecting homelessness



Participatory system mapping



Participant reflective learning activities



See SPWW Microsoft Teams channel for additional reading





Facilitated learning group session(s)

### Activity 3: Exploring the system

A systems map can be used with your PSB and the partners they collaborate with in several ways to identify potential actions and interventions which support health, well-being and equity. The map also provides a stimulus for collaboration opportunities and as a basis for ongoing work.

#### Ways you can use a systems map

 <b>Understanding</b>	 <b>Managing and responding</b>
Looking at the relationships between factors in a system	Identify areas ripe for change
Identifying feedback loops	Looking at where changes in one part of the system can have the greatest positive impact on other factors in the system
Agreeing feedback loops which need disrupting and those that need amplifying	Deciding where the focus for further action should be, e.g. breaking negative cycles and amplify virtuous cycles
Identifying problematic areas in the system	Considering how changes in the system now might affect future outcomes
Consider existing action in the system	Contributing to evaluating change efforts
Considering how the wider environment affects factors within the system	

An important potential use of a systems map is to help identify the ‘levels’ of the system where action is already taking place, and where it could be introduced. A system-level framework can be used to determine if current action focuses at an event level (requiring ‘high-agency’ from individuals in a community) or at the level of changing the goals or paradigm of a system (requiring ‘low-agency’ from individuals in a community).

The pictures below give an example in the context of supporting people to maintain a healthy weight. The picture on the left is an example of factors requiring high-agency and the picture on the right low-agency as the environment is made more conducive to achieving a healthy weight.



#### High-agency

Attending a weight management group or providing information on healthy eating and physical activity



#### Low-agency

Restructuring the environment to provide dedicated cycleways and walkways connecting residential areas and areas of work

In some ways, the work identifying the level at which action is happening is the crux of the role of PSB. A great deal of work aiming to reduce health inequalities and much of the evidence on doing so, is based on more individual-level action. These kinds of interventions often require high levels of personal agency, but people facing disadvantage may have constraints that reduce their agency below that of the general population.

There is also disproportionately more evidence on treating health problems through the healthcare system than on the systems that can reduce people's risk of needing such care in the first place. Intervening after health problems have developed not only fails to reduce inequalities (health or otherwise) but also, may increase them.

Exploring the systems map in the learning groups and with PSB and collaborative partnerships is where the programme has the most potential to make a difference. By thinking and working systemically and systematically participants in the learning groups and their PSB could identify and act on high leverage points in the system-of-interest. These levers may be harder to shift but are likely to have a greater impact on prevention through influencing the wider determinants of health and require the least of those for whom 'health inequality' is part of their individual experience. Seeking higher system levers does not mean failing to engage and involve communities in shaping and

realising change; rather it means that the change does not rely on individuals having to change their behaviours through individual low-level interventions.

Similarly, it will be important to consider a population approach. For example, we know that targeting efforts to the extremes can miss the bulk of the population need; and so universal approaches delivered at a scale and intensity relative to need (proportionate universalism) can be considered.

The systematic analysis of a systems map is an important step to identify what change is needed and where this can happen. Other types of mapping might support this, for example, by undertaking actor mapping to look at relationships, interactions and influence in different parts of the system.



Points of leverage analysis  
Actor mapping  
Analysing your mapping



Participant reflective learning activities



See SPWW Microsoft Teams channel for additional reading



Facilitated learning group session(s)

## Activity 4: Describing the desired change

Design and implementation of any identified actions/ interventions are likely to benefit from their own theory of change to help your PSB and their partners to articulate and test their theories and assumptions about how an impact might happen.

Drawing on the insights from developing and exploring the system mapping, a theory of change can harness the opportunities to use levers of greatest impact, and consider relationships across the system, including risks of unintended consequences.

This is the point where the evidence base can be further considered, from well-being assessments, published literature, and insights from communities and partners.



3-horizons  
Backcasting  
Theory of change



Participant reflective learning activities



See SPWW Microsoft Teams channel for additional reading



Facilitated learning group session(s)  
Facilitated sessions with your PSB and stakeholders

## Activity 5: System evaluation

As the programme aims to support PSB to manage complexity and take action to improve outcomes within a defined system-of-interest, it will be important to evaluate PSB readiness to integrate a systems thinking approach, what level action is happening in the defined system-of-interest and evidence of where systems thinking and working is informing future strategic planning.

Changes to outcomes in complex systems often takes time to be realised, and, due to the range of interconnected factors influencing a complex issue, cannot be attributed to a single intervention.

It is however important to understand if your intervention or change is being delivered as you expected, or if your actions are having unintended consequences. Having a process of testing, learning and adapting is important.

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