

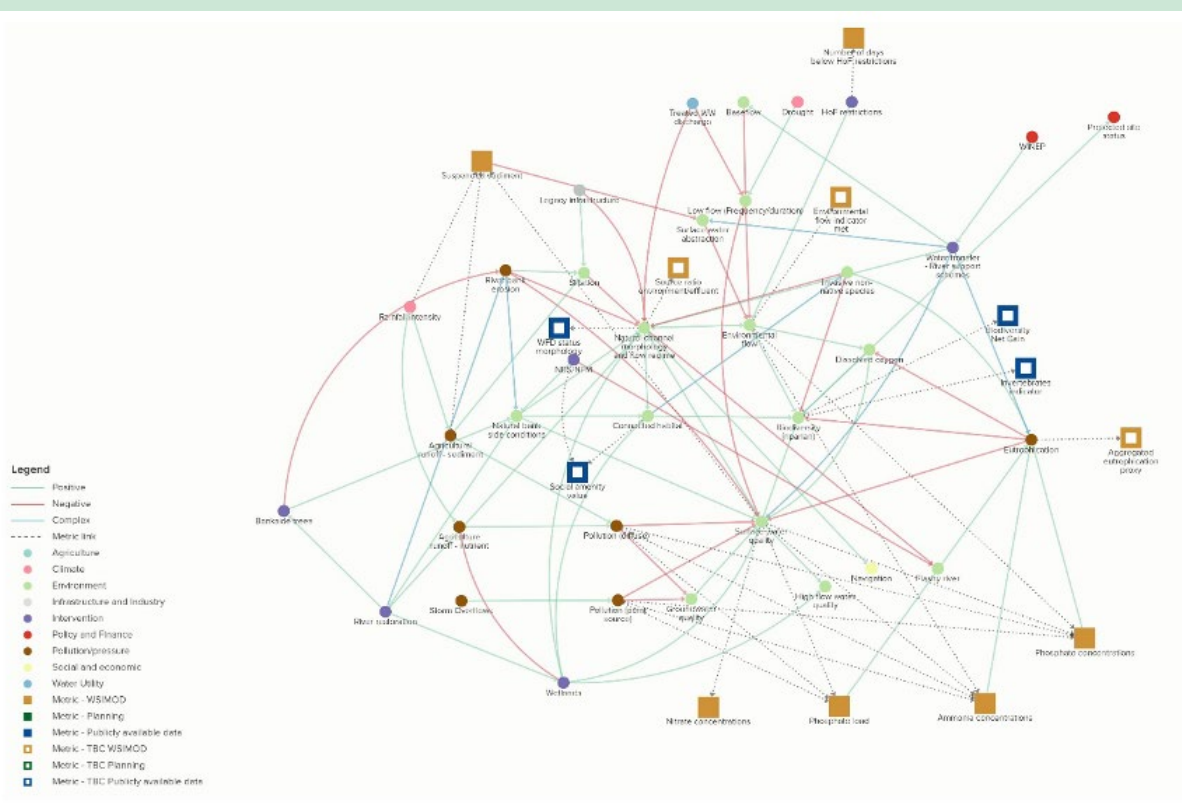
Participatory Systems Mapping



Overview

A Participatory Systems Mapping (PSM) approach is used to identify interlinkages and interdependencies across a complex system. Its use in understanding a system and

to engage with stakeholders has been increasing over the past few years. We used it to set our foundation for considering integrated water management.



Extract of our system Map: River Health

Understanding a systems map

Nodes

Shown as circles or squares.

These are representing system attributes:

- **Factors:**

Important variables in the system that can meaningfully increase or decrease

- **Functions:**

Outcomes, outputs, or services that the system provides

Links

- Shown as arrows/connecting lines
- These represent causal influences, showing positive, negative, or complex relationships

How we used Participatory Systems Mapping in Approach 1 and Approach 2

PSM, was chosen for use as part of both approaches, we trailed in the IWMF Rethinking Water Planning project, this was due to its stakeholder-driven nature and ability to explain links in complex systems.

The process is based on expert knowledge and experience. We asked stakeholders to focus on their own catchment areas, helping up to create system

maps representing their specific areas, providing their understanding and perspectives. Through the process we were able to qualitatively analyse the causality around points of interest. The lack of a strict requirement for quantitative representation allowed all functions and causal influences (factors) in the system to be included.

Approach 1

- Identify system metrics
- Select priority metrics

Approach 2

- Group interventions
- Inform the basis of multi criteria analysis
- Develop intervention scoring
- Metric selection

The outcomes and outputs we received from using the process included:

1. Identification of relationships

The mapping helped identify the interconnections between different aspects of the water system and the influential factors.

2. Option categorisation and benefits

It outlined various option types/interventions that provide multiple benefits. Validating the theory of the multi beneficial nature of investment options.

3. Integration potential

The mapping has demonstrated the potential for integrated planning to achieve synergies across urban and water planning.

4. Stakeholder collaboration

The approach fostered improved collaboration and participation, building relationships and generating shared insights and stakeholder buy-in.

Suggested applications

1. Statutory water planning

Using the PSM approach would help create a clearer understanding of the interconnected systems involved in water planning.

2. Knowledge repository

The 'maps' could act as a repository for knowledge about how to categorise options and where their benefits (and impacts) will be felt. They could then be used to inform future option categorisation and criteria selection for multi-criteria analysis (MCA).

3. Creation of a shared vision

Creating a shared understanding which provides a foundation for a vision of the system - so everyone is working from the same information.

4. Collaboration

The process is particularly relevant and beneficial for promoting integrated thinking in related fields.

5. Collaboration

Systems mapping can help to identify linchpins or points of leverage in complex environments.

What are the benefits of Participatory Systems Mapping?

- The systems approach has demonstrated its ability to support holistic understanding and management of complex water and environmental systems.
- The approach fosters collaboration by integrating diverse perspectives to create a collective understanding. This shared understanding and collaboration will be able to support more effective planning and joined up intervention strategies.
- Very easy to do – can be enhanced with programs such as [Kumu](#).
- Gives a focus for discussions and allows all expertise, experience and knowledge to be drawn out.
- Allows identification of the full impact of changes.

What are the dis-benefits of Participatory Systems Mapping?

- Resource intensive on stakeholder's time.
- Some views are subjective rather than factual.
- It is only part of an approach. It needs follow on work to exploit the potential benefits.
- Not all stakeholders feel comfortable contributing in group sessions and so will need to be facilitated in other ways to allow for all thoughts/opinions to be given equal weighting.

The project

Project background and purpose



Project background, purpose,
approach and conclusions



Techniques applied in the trials



Integrated Modelling summary



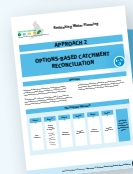
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Trialling ways to achieve the ambition



Approach 1: Systems
Approach to Integrated Water
Management (SIWM)



Approach 2: Options-Based
Catchment Reconciliation

