

City Blues NBS model

Bluegreen nature-based solutions for climate
change adaptation and citizen wellbeing

Online seminar | 17.09.2026

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interreg-baltic.eu/project/city-blues



Why?

- Floods have cost the EU an **average of 7.8 billion € per year** between 1980 and 2023, with annual losses peaking at **48.2 billion** in 2021 and 23.9 in 2023.
- Valencia, 2024 – at least 230 casualties, **29 billion €** worth of damage.



Why?

EEA Report No 01/2021 Nature-based solutions in Europe: Policy, knowledge and practice for climate change adaptation and disaster risk reduction

- **Fragmented** governance and insufficient **coordination** between municipal departments, sectors and levels of government.
- **Poor alignment between** climate adaptation, disaster-risk reduction, biodiversity and spatial-planning **policies**.
- Policies are often **voluntary or non-binding** and therefore do not reliably lead to local action.
- Lack of clear **implementation roadmaps**, measurable targets, **assigned responsibilities** and enforcement mechanisms.
- Insufficient **integration** of NbS into municipal strategies, land-use plans, infrastructure planning and flood-risk management.
- Inadequate and fragmented **funding**, particularly for long-term implementation, maintenance and monitoring.
- Insufficient **local evidence, knowledge and awareness** of where NbS can be applied and how it compares with conventional “grey” infrastructure.
- ...

Why?

EEA Report No 01/2021 Nature-based solutions in Europe: Policy, knowledge and practice

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City Blues approach

Step 1: Benchmark report

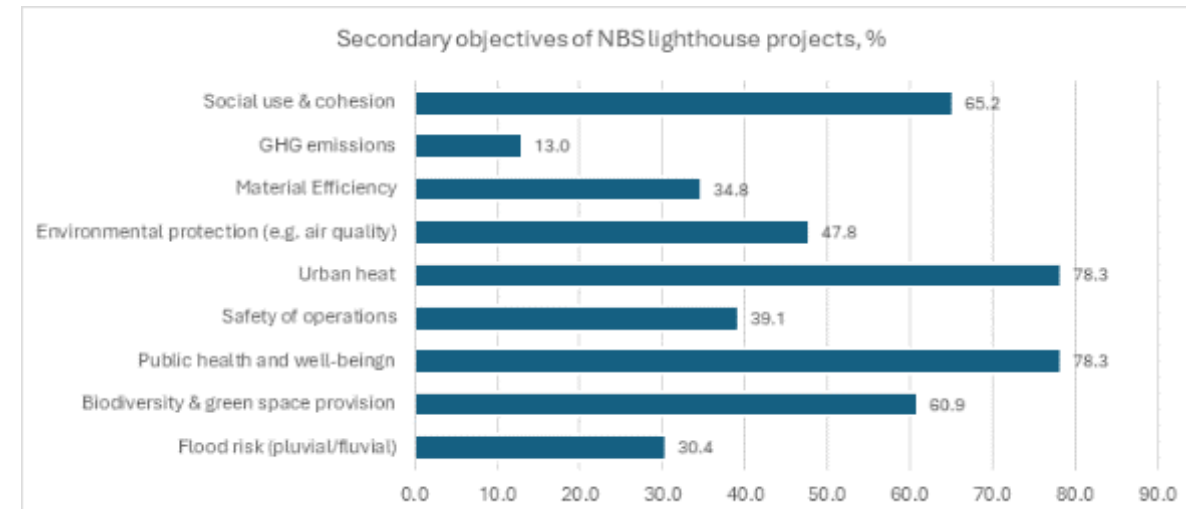
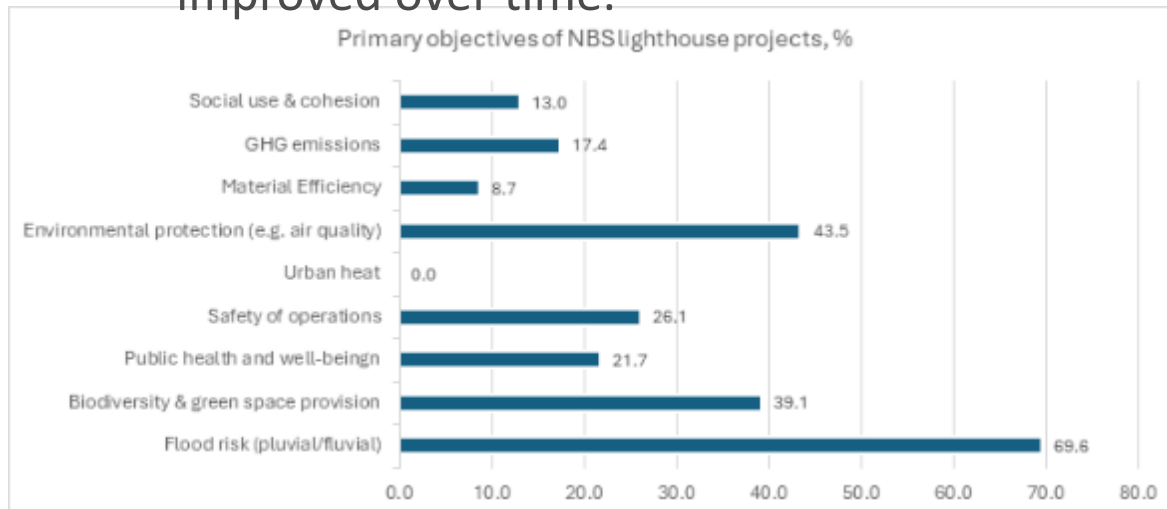
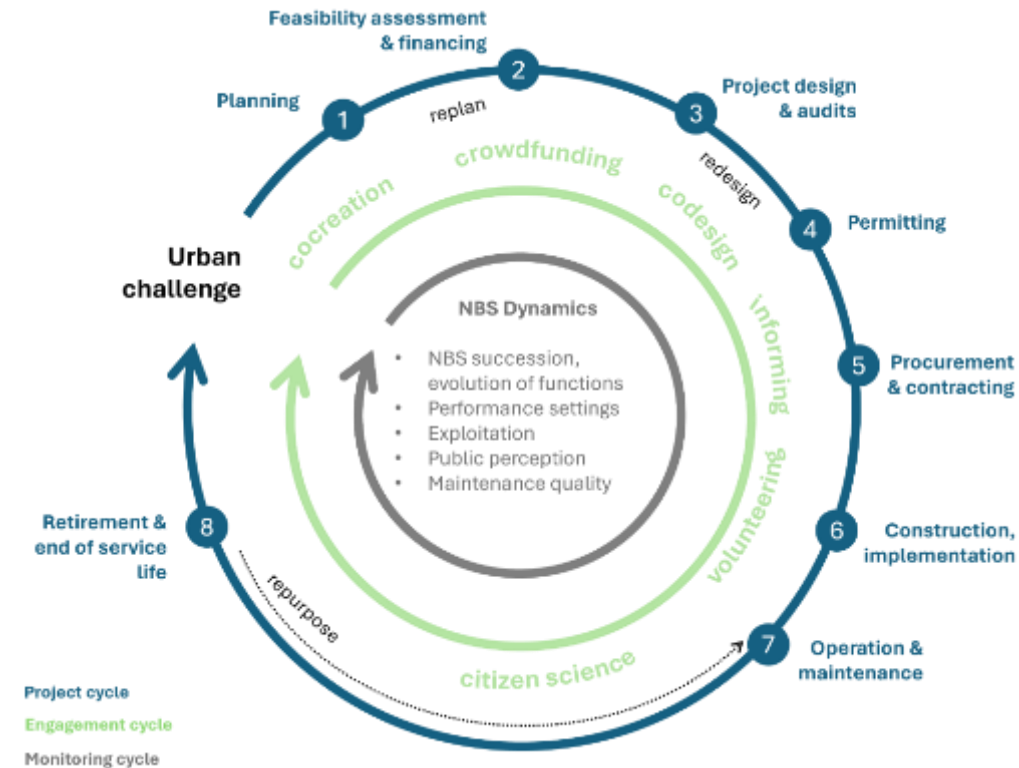
Step 2: Operational KPI report

Step 3: Collecting and systemizing best practices

Step 4: Finalizing the NBS model as a web tool. Developing a self-assessment tool to identify relevant guidance

City Blues Benchmark report

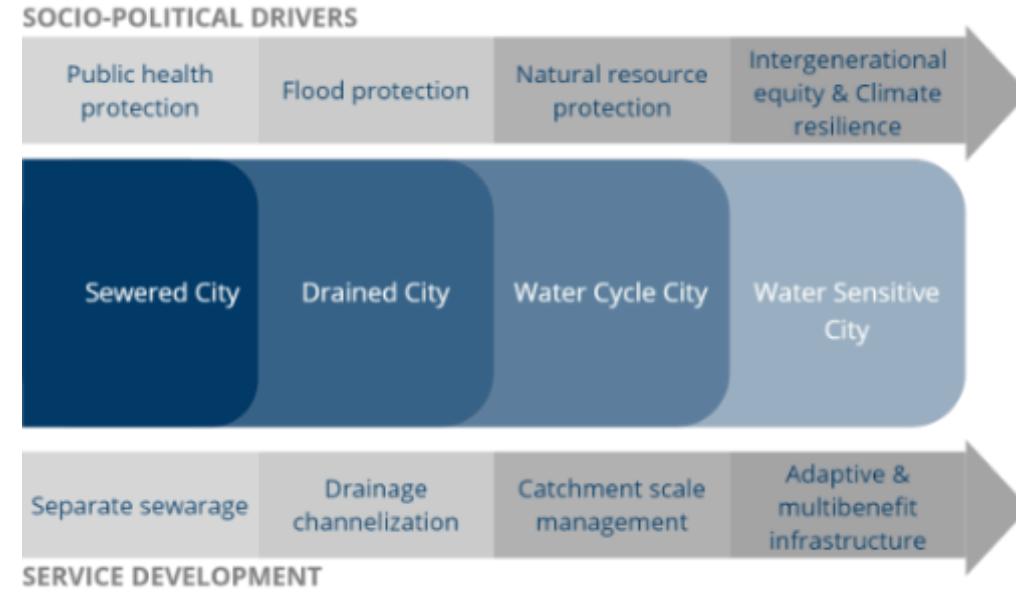
- **NBS attract greater public interest** than underground pipe systems because they require visible urban space and directly affect the living environment.
- **Early co-creation and cooperation** with residents and other stakeholders are therefore essential.
- **Operation, maintenance and monitoring** must be planned for the **entire life cycle**—not only during initial design and construction.
- **Monitoring** results should **feed back into operation** and future planning, allowing solutions to be adapted and improved over time.



City Blues Operational KPI report

In total 15 KPI-s were defined. Top 4 were:

- Presence of NBS in municipal **policy agendas**: Inclusion of NBS in local policy discussions signals initial steps toward recognizing their value for urban environments.
- **Number of pilot projects** initiated and funded: Political willingness to fund NBS pilot projects is a key indicator of emerging support.
- Percentage **of budget allocated for NBS**: An increased budget allocation for NBS projects indicates a transition from experimental pilots to more formalized funding.
- Number of **comprehensive urban plans integrating NBS**: Endorsement of urban plans that incorporate NBS as a core element demonstrates strong political backing.



A photograph of a person wearing a white helmet and dark clothing, riding a bicycle through a flooded path. The water is calm, reflecting the surrounding trees and streetlights. The path is lined with trees and several tall, modern streetlights. The scene is set in a park-like area with dense foliage.

Princip för placering av luftningsbrunn för träd i sammanhängande värfbild

Princip för placering av luftningsbrunn för ett träd

INSTRUKTION AV UTTÖRANDE

Innan skedet läggs ut, kontrollera byggherrens för kontroll av terrassen.

Hälsan läggs ut i två lager 4 300 mm lager tjocklek, med komprimering av varje lager. Varje lager packas punkt för punkt för att inte skada sig. 100 kg.

Hälsan läggs ut i två lager, därifrån läggs på en komprimeringslag, 50 cm, och varje lager packas punkt för punkt. Packningen genomförs.

Omrättning med kringplockning läggs i två lager.

Luftningsbrunnen sätts ut efter luftningsbrunnen kommer i exakt höjd med det luftiga bärlaget.

Hälsan läggs ut i två lager och komprimeras, därifrån läggs på en komprimeringslag, 50 cm, och varje lager packas punkt för punkt. Packningen genomförs.

Trädgrönsfundamentet sätts ut efter luftningsbrunnen kommer i exakt höjd med det luftiga bärlaget.

Luftigt bärläge läggs ut och komprimeras, därifrån läggs på en jämningslag och komprimeras. Varje lager packas enligt RF.

Om möjligt läggs ut över hela värfbildens och viks upp med fundamentet. Brunnen med ner till att luftningsbrunnen kommer ut i luftigt bärläge. Kontrollera inte grundens kvalitet.

Varje lager förberett ska förberett.

Hulevesiohjelman 2023–2030

Kaupungeissa suuri osa maa-alasta on vettä läpäisemätöntä pintaa kuten kattoja ja asfalttia. Mitä tiiviimmin rakennettu alue on ja mitä suurempi osa valuma-alueen pinnoista on vettä läpäisemätöntä, sitä enemmän ja nopeammin pintavaluntaa muodostuu. Perinteisesti hulevedet on johdettu hulevesiviemäreillä sita ojissa lähimpiin vesistöihin tai maastoon. Tulvahaittojen pienentämiseksi ja hulevesien laadun parantamiseksi hulevesiä viivytetään mahdollisuuksien

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CityBlues NBS model...

...**joint operational framework** that supports cities of different sizes and capacities in planning, implementing, and maintaining **NBS that deliver measurable impacts at the catchment scale.**



In the **NBS model** we focus on planning and implementing NBS that are designed as catchment-fit

NBS model: joint operational model to implement MULTI-SCALE, MULTI-STAKEHOLDER, MULTI- OBJECTIVE MISSION for catchment-fit NBS

FLOOD PREVENTION



Country



City



CATCHMENT

FLOOD MITIGATION



Development area

WATER QUALITY IMPROVEMENT



Building plot



Nature Based Solution

Political
support

Financing
model

Catchment
integration

Design of
NBS

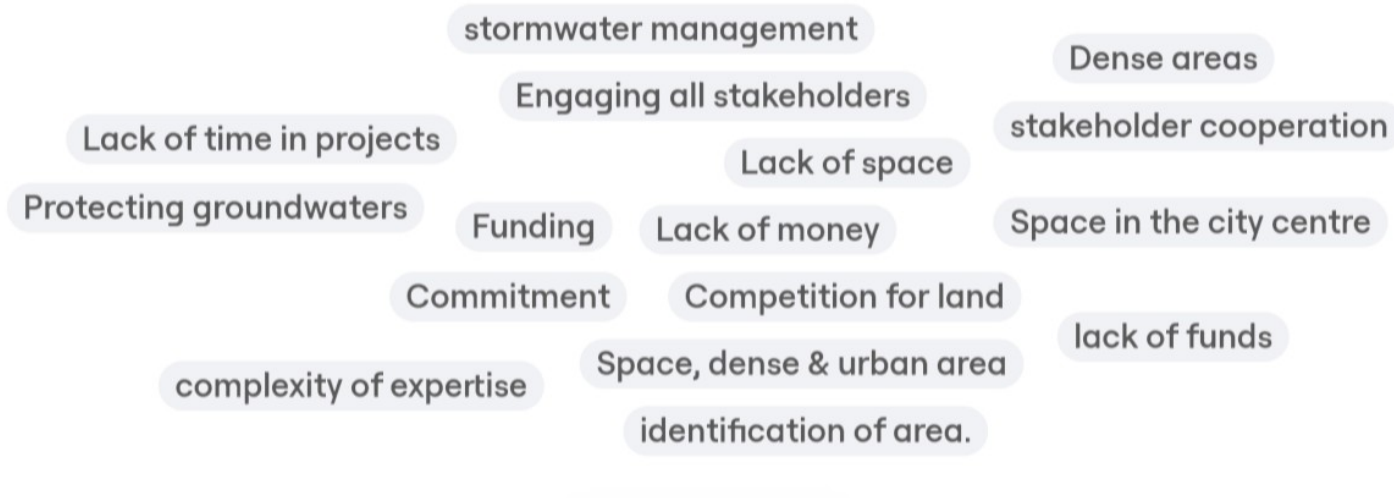
Construction
of NBS

Maintenance
of NBS

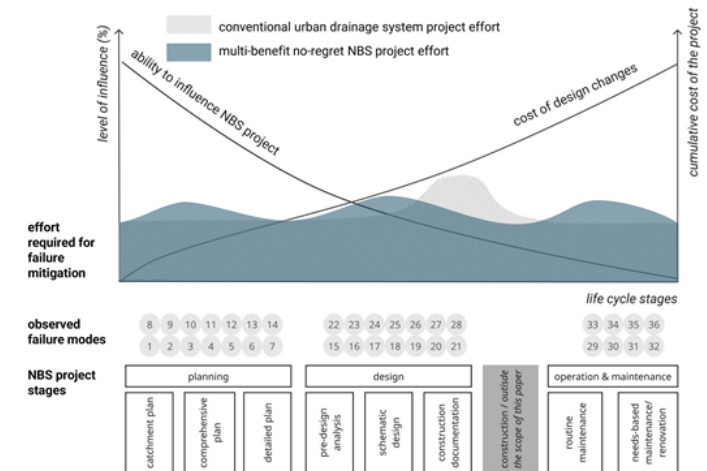
Evaluation &
learning

Where catchment objectives are lost and mission continuity is at risk?

Main barriers that hinder implementing catchment-fit NBS in cities



Failure modes across the life cycle of nature-based stormwater solutions: a systematic review of planning, design, and maintenance challenges



<https://doi.org/10.2166/bgs.2025.122>

Institutional

Financial

Regulatory

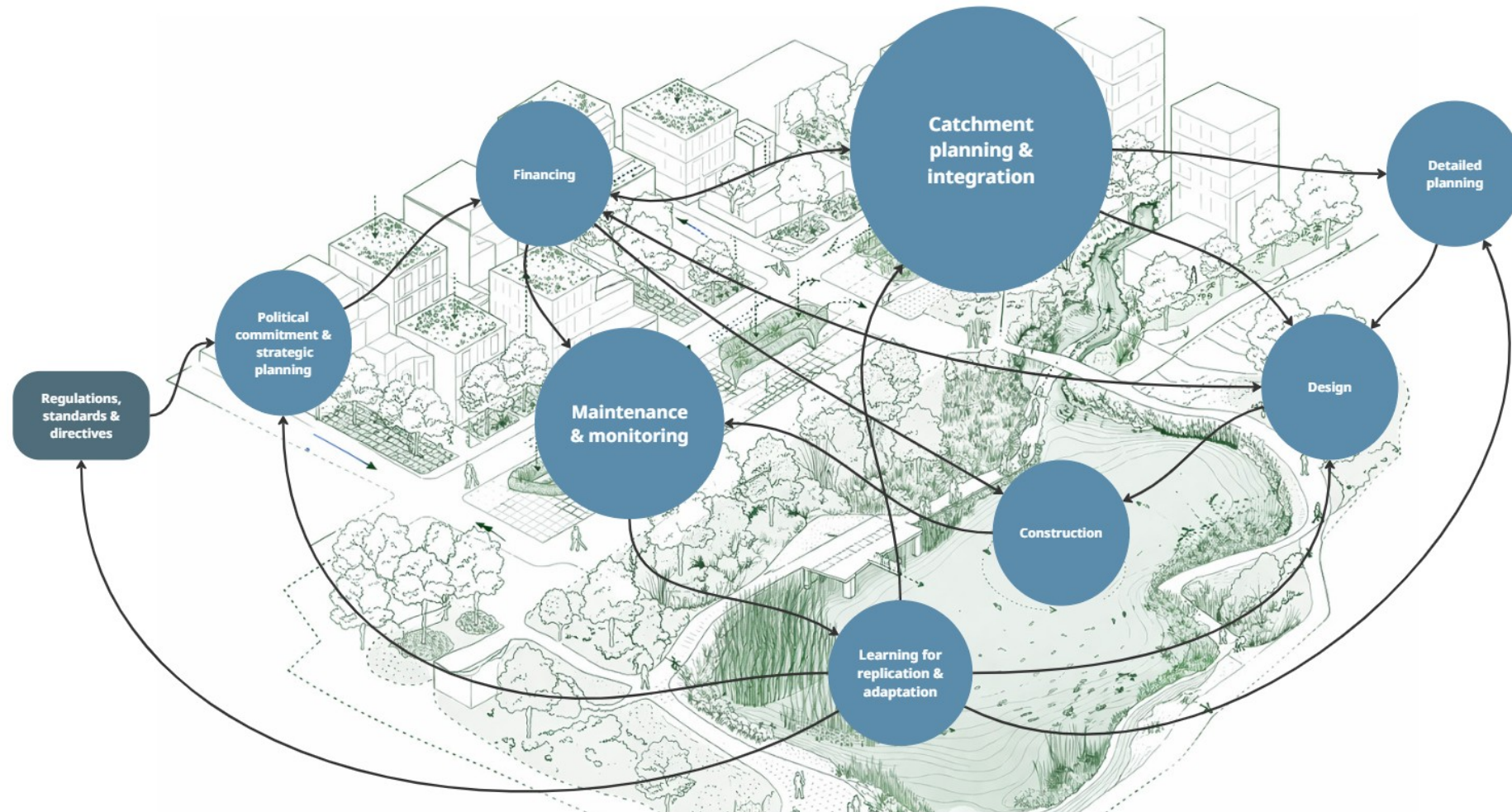
Technical

Biophysical

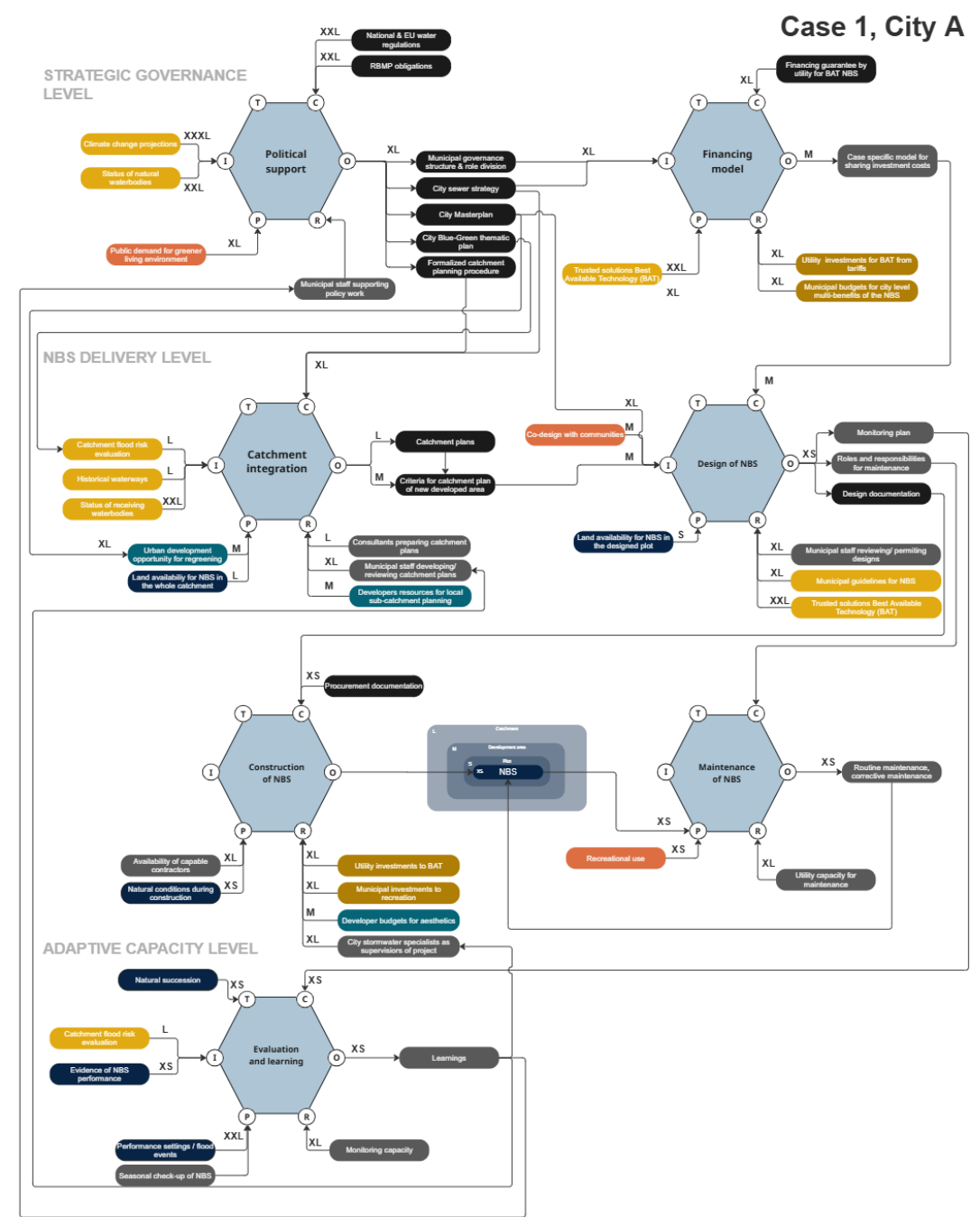
Socio-cultural

>50 types of barriers
identified by literature

What governance functions need to be operationalized for implementing catchment-fit NBS?



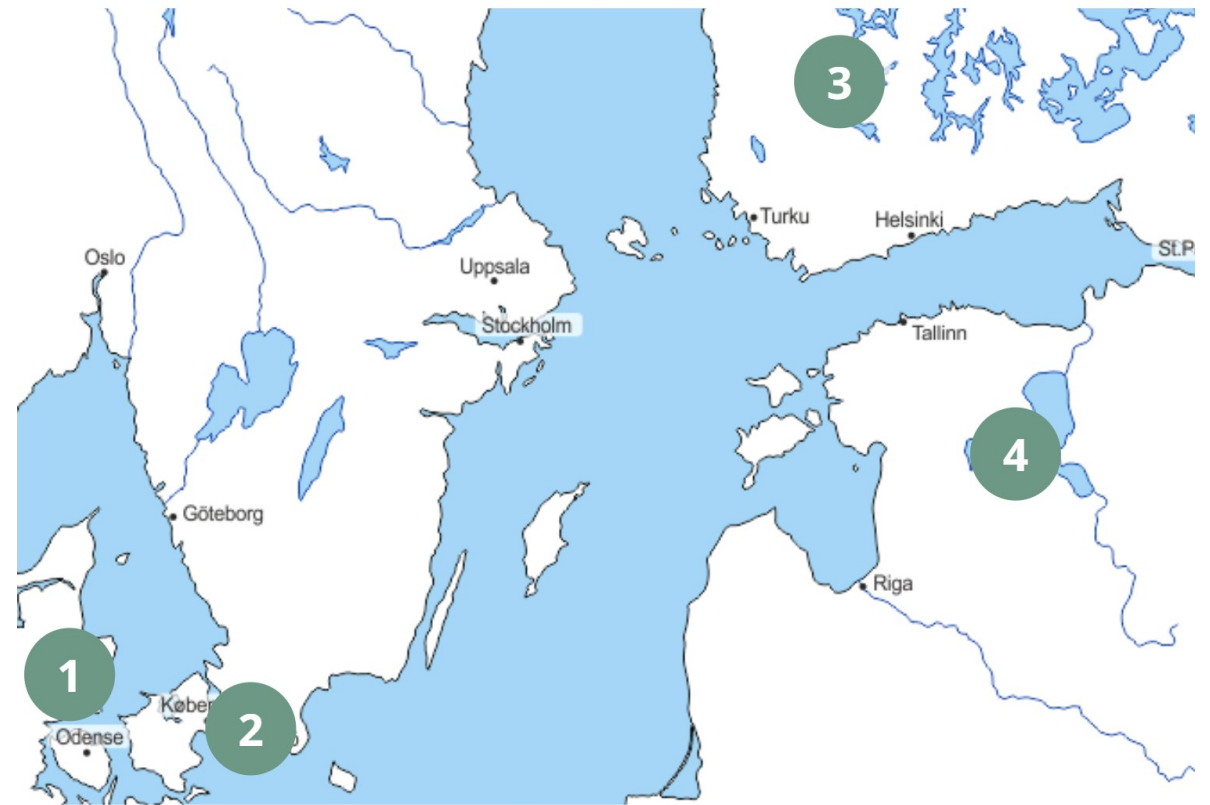
How to reach the JOINT in complex & varying operational settings?



What we observed?

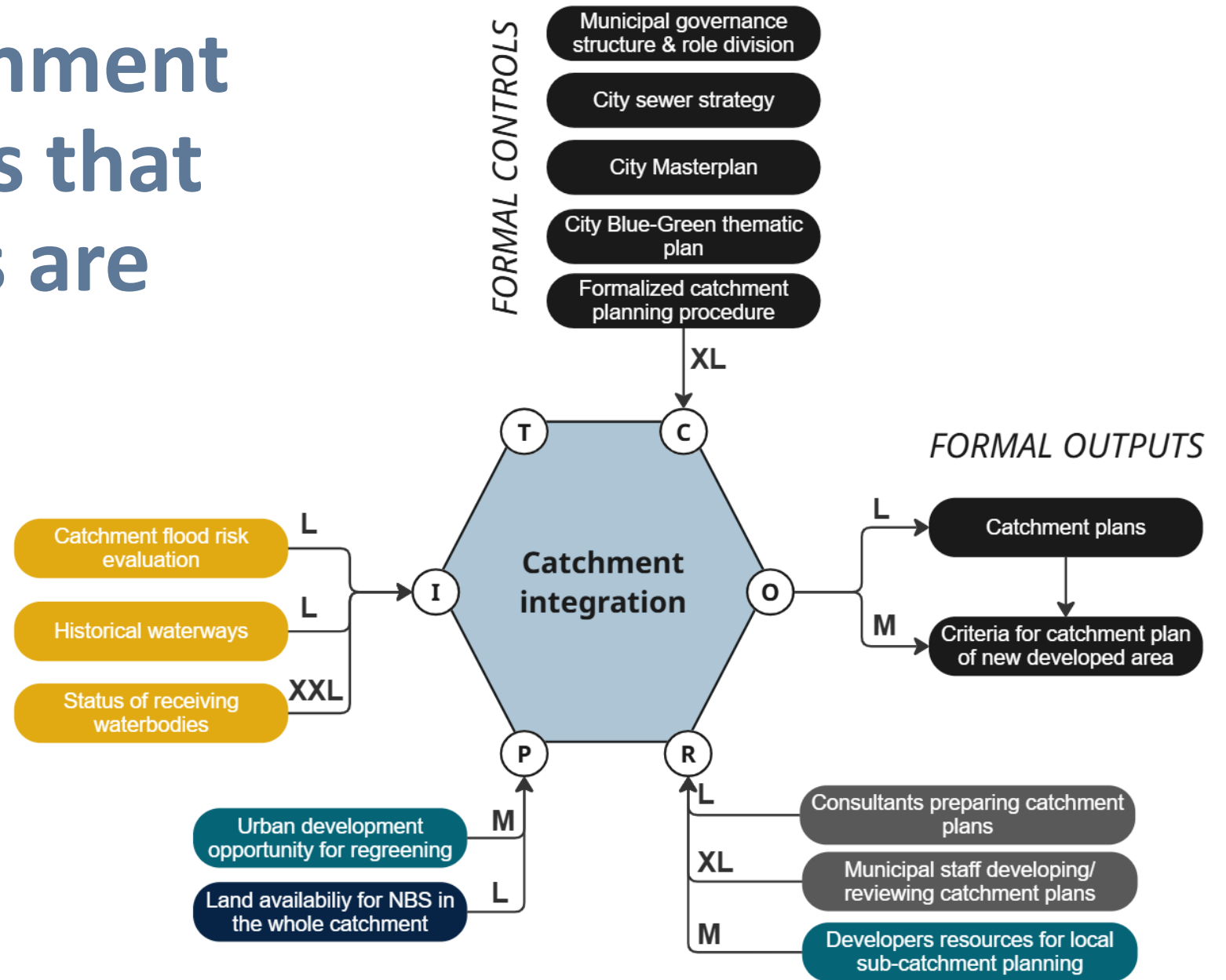
Where models fail?

- Loss of catchment objectives during governance transitions;
- Misalignment between strategic objectives and local implementation;
- Dependency on temporary pilots or individual expertise.

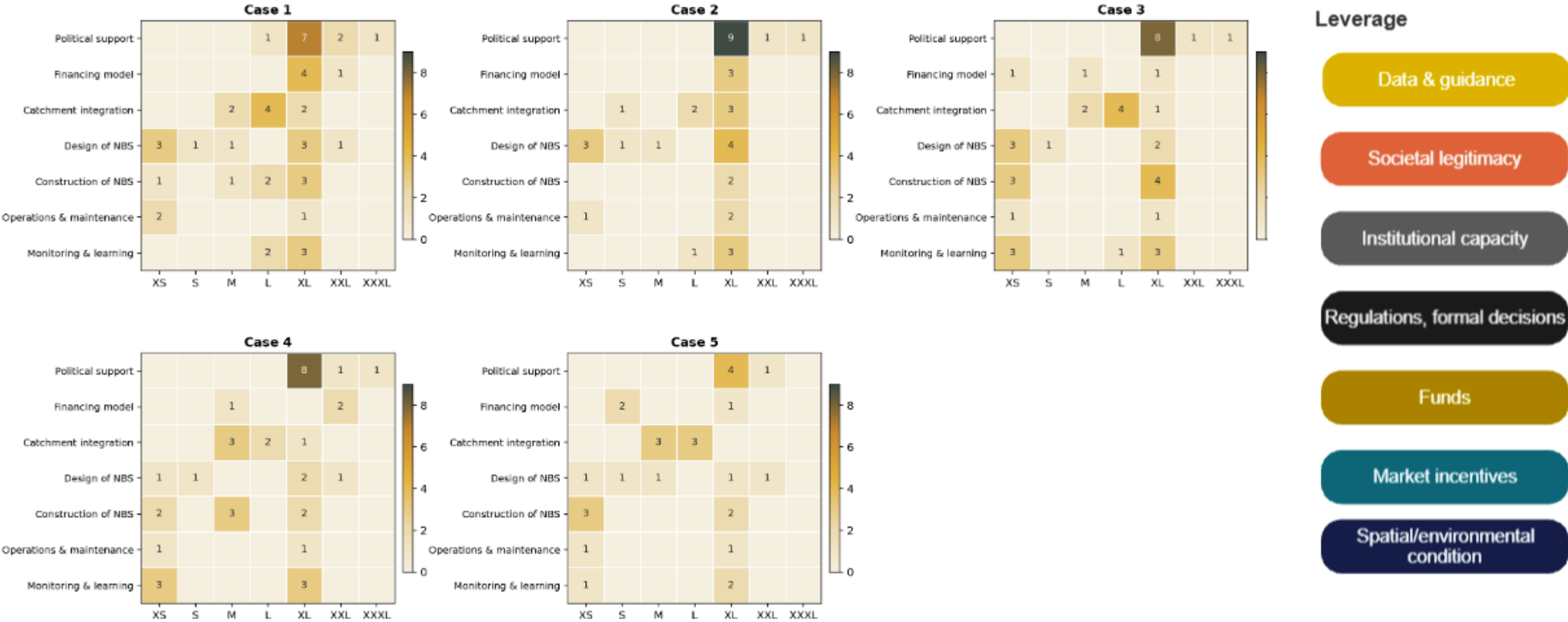


Case scope	Case 1	Case 2	Case 3	Case 4	Case 5
Total leverages	48	39	42	39	29
Functions covered	7	7	7	7	7
Scales covered	7	7	7	7	6
Leverages with mission keeper	48	39	42	36	23
Distinct mission keepers	5	3	7	5	2

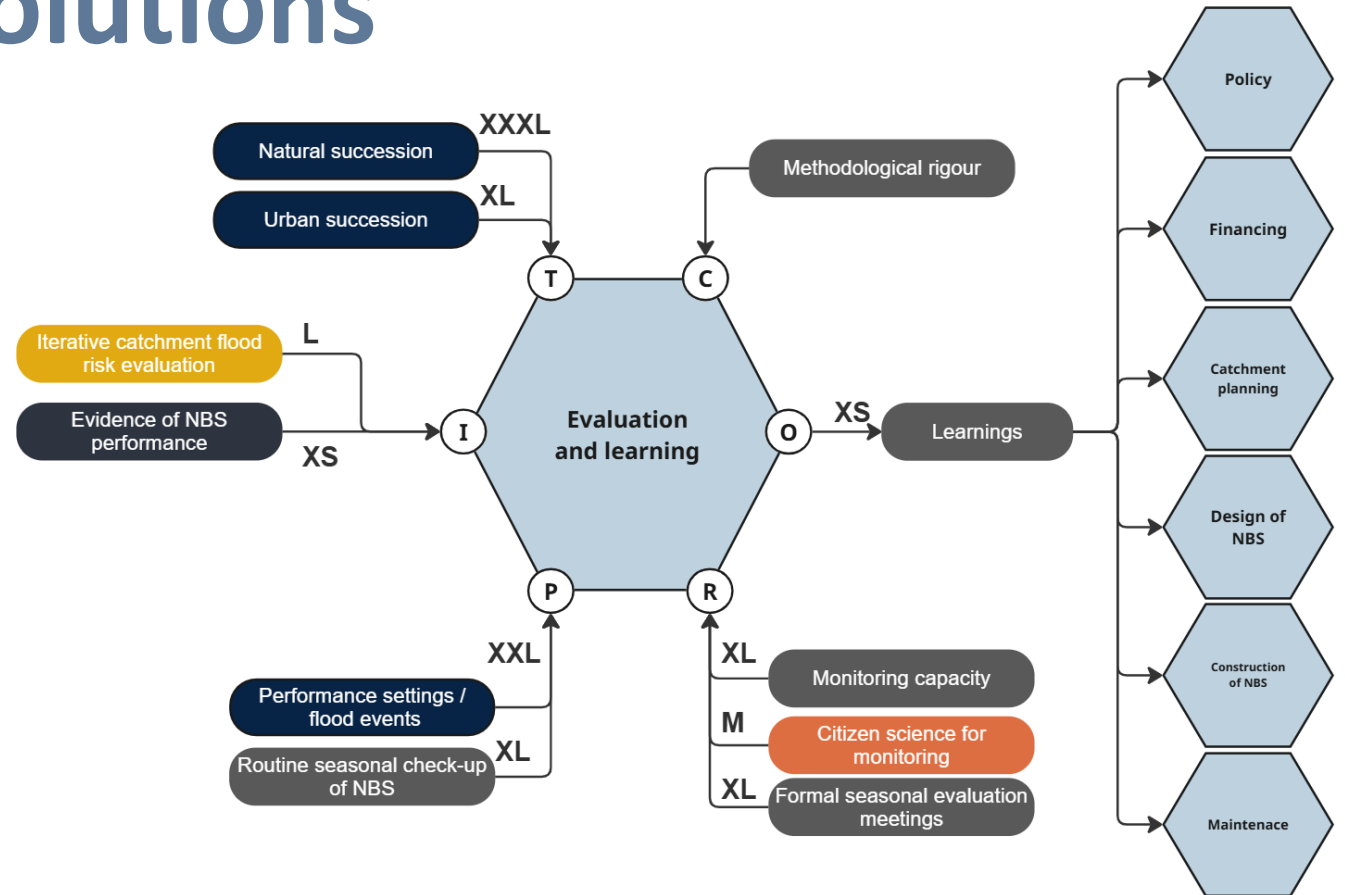
Formalized catchment planning secures that catchment goals are integrated and implemented



Diversity of supporting mechanisms strengthens the model



Continuous learning and adapting builds the capacity and creates the creative toolset for inventing solutions in complex contexts



Integration, diversity of methods, continuous learning across contexts, urban scales and governance areas requires mission keepers!



NBS model in the web

[Home](#) > Catalogue of practices

Catalogue of practices



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Project has received funding from the EU's Interreg Baltic Sea Region programme.