

3-5 FEBRUARY 2026 | BRUSSELS INFO PLACE

# FINANCE INNOVATION FESTIVAL

INSURANCE AND INVESTMENT OPPORTUNITIES  
FOR **NATURE-BASED TRANSFORMATIONS**



Funded by  
the European Union



# FESTIVAL AGENDA

[ALL TIMES ARE IN CET]

3 FEBRUARY 2026

12:00		Welcome
13:30		Lunch
13:30		<i>Insurance and Investment Opportunities for Nature-Based Transformations</i>
14:00		<i>EU initiatives for financing nature</i>
15:30		Break
16:00		<i>Private initiatives for financing nature</i>
17:30		Aperitif and Social Dinner

4 FEBRUARY 2026

09:30		<i>From Risk to Resilience: Insurance Solutions</i>
11:00		Break
11:30		<i>Capital for Nature: Investment Solutions</i>
13:00		Lunch
14:30		<i>Communities Connect: Advancing NbS through Insurance and Investment</i>
16:00		Break
16:30		<i>Quantifying the costs and benefits of NbS to inform decision-making</i>
18:00		

5 FEBRUARY 2026

09:00		<i>Collective Insights, lasting impact: Financing and insurance for NbS</i>
10:30		Break
11:00		<i>Seeds of change: Citizens and Cities</i>
12:30		
12:30		<i>Closing Session</i>
13:00		



4 FEBRUARY 2026

09:30  
11:00

## FROM RISK TO RESILIENCE: INSURANCE SOLUTIONS

11:00  
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Break

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*Capital for Nature: Investment Solutions*

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*Quantifying the costs and benefits of NbS to inform decision-making*



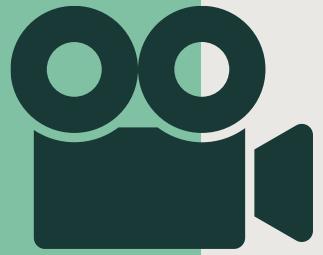
**Jaroslav MYSIAK**  
Euro-Mediterranean Center  
on Climate Change



**Priscila  
FRANCO STEIER**  
ICLEI Europe



# LOGISTICS



**Plenary sessions** are  
livestreamed and recorded



**In-person and online  
questions** will be addressed  
after each session



A **media corner** is available  
for interviews during breaks

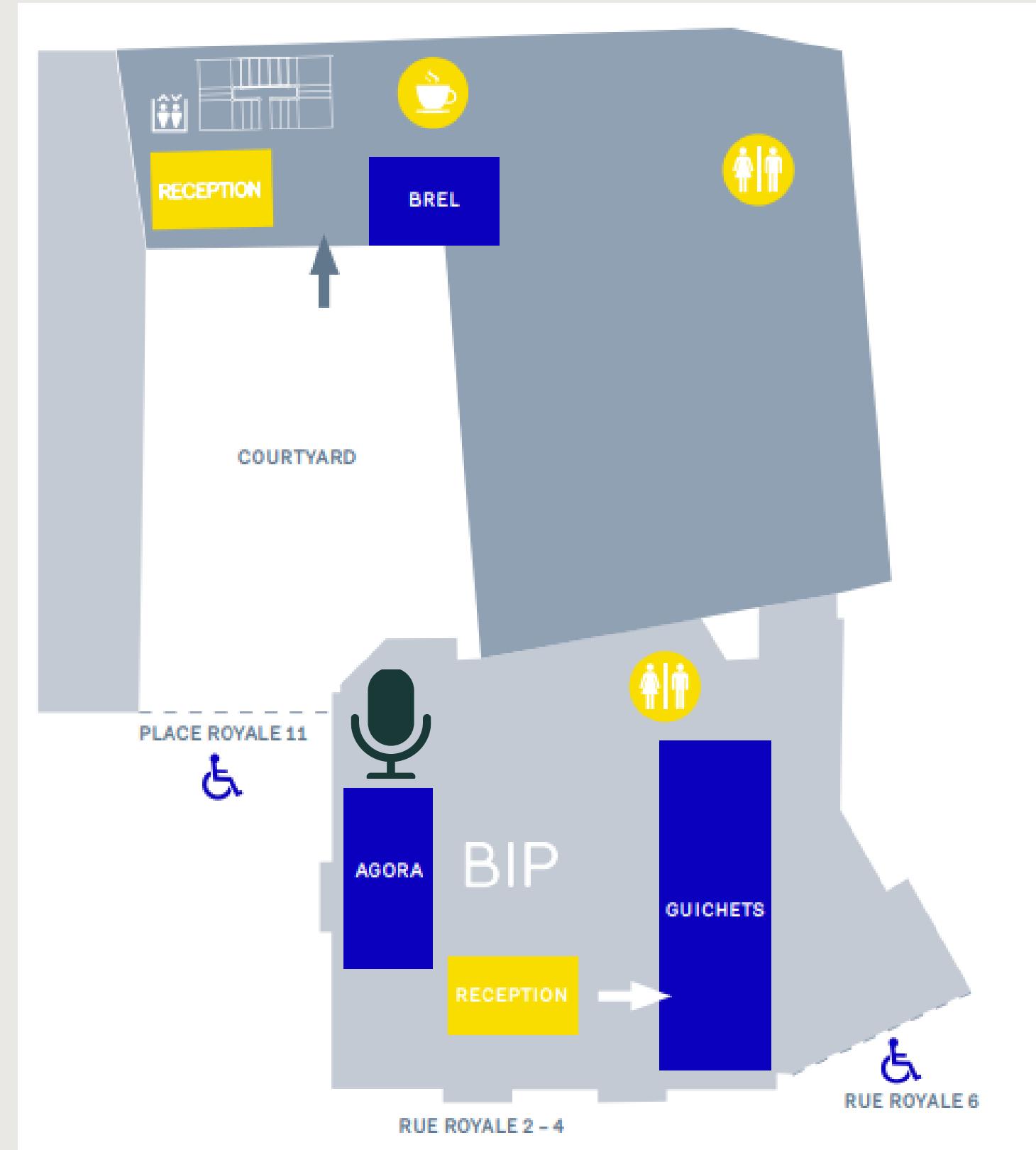


Sign up for the **World  
Café tables** at the  
registration desk

**Lunch** will be hosted at  
the festival venue



# VENUE MAP



4 FEBRUARY 2026

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*Quantifying the costs and benefits of NbS to inform decision-making*

## MODERATOR



**Swenja SURMINSKI**  
Marsh McLennan/  
London School of  
Economics



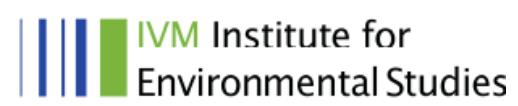
# *From Risk to Resilience: Insurance Solutions*

*Naturance Festival*

# NATURANCE

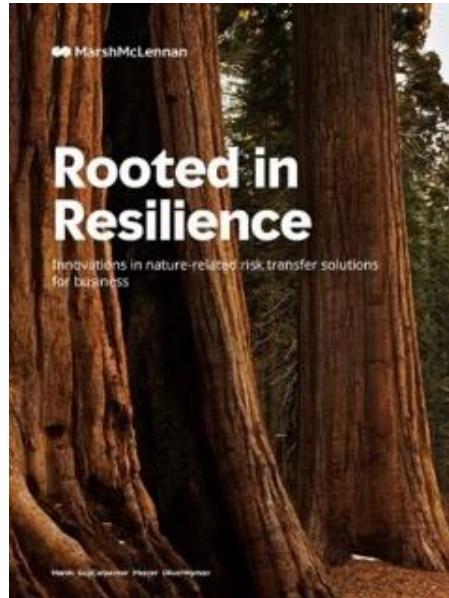


*04 February 2026*



*Opening  
Insurance Solutions*

*Swenja Surminski*  
*Professor in Practice*  
*London School of Economics and  
Political Science (LSE)*



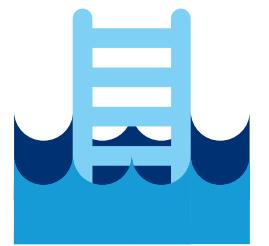
# Nature Risk Transfer Applications

Insurance solutions can help address nature loss.  
Innovations are emerging across three categories:



## Protecting nature to de-risk decarbonization efforts

A new class of risk transfer products aim to de-risk investments in nature-based solutions and carbon offsets



## Restoring nature to build resilience against physical climate risks

Incentivize nature restoration while reducing the impacts of climate extremes, and helping organizations prepare for chronic climate trends like sea level rise



## Building resilience against nature loss and reducing it

Help organizations protect their assets and operations from a growing range of nature impacts, and support their business efforts to reduce impacts on nature

Please contribute to the NATURANCE Compendium of nature insurance case studies here:

[https://ec.europa.eu/eusurvey/runner/NATURANCE\\_Compndium\\_Case\\_Studies](https://ec.europa.eu/eusurvey/runner/NATURANCE_Compndium_Case_Studies)



**1: Methods to quantify flood risk reduction and co-benefits of NbS in the Netherlands (VU-IVM)**

**2: Harnessing insurance to promote nature-based solutions for wildfire risk management (IIASA)**

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**5: Financing for heat action plans at city-level in Europe (WTW)**

**6: Boosting flood resilience in Italy through controlled flooding, community insurance and nature-based solutions (CMCC)**

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**9: Wetland restoration for protection against floods and drought (SU)**

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*Quantifying the costs and benefits of NbS to inform decision-making*



**Swenja SURMINSKI**

*Marsh McLennan/London School  
of Economics*



**Stefano CEOLOTTO**

*Euro-Mediterranean Center on  
Climate Change*



**Max TESSELAAR**

*Institute for Environmental  
Studies - VU*



**Joanne LINNEROOTH-BAYER**

*IIASA*



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**Stefano CEOLOTTO**

*Euro-Mediterranean Center on  
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# NATURANCE



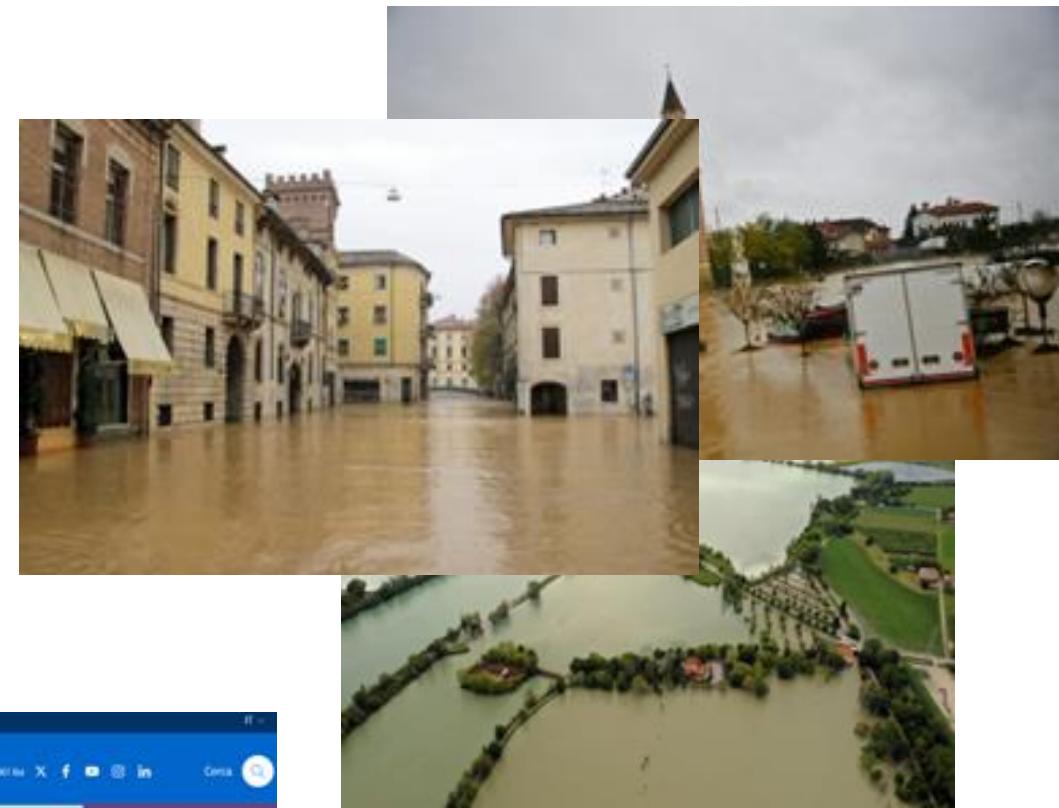
# CMCC Innovation Lab

Boosting flood resilience  
through controlled flooding,  
community insurance and  
nature-based solutions

**Stefano Ceolotto**  
**Lab Lead, CMCC**

# Context, aim and scope

**High flood risk, exacerbated by climate change**  
→ Po river basin, Emilia-Romagna floods (2023-2024)



**Low insurance coverage**  
→ Recent legislation mandating climate coverage for businesses



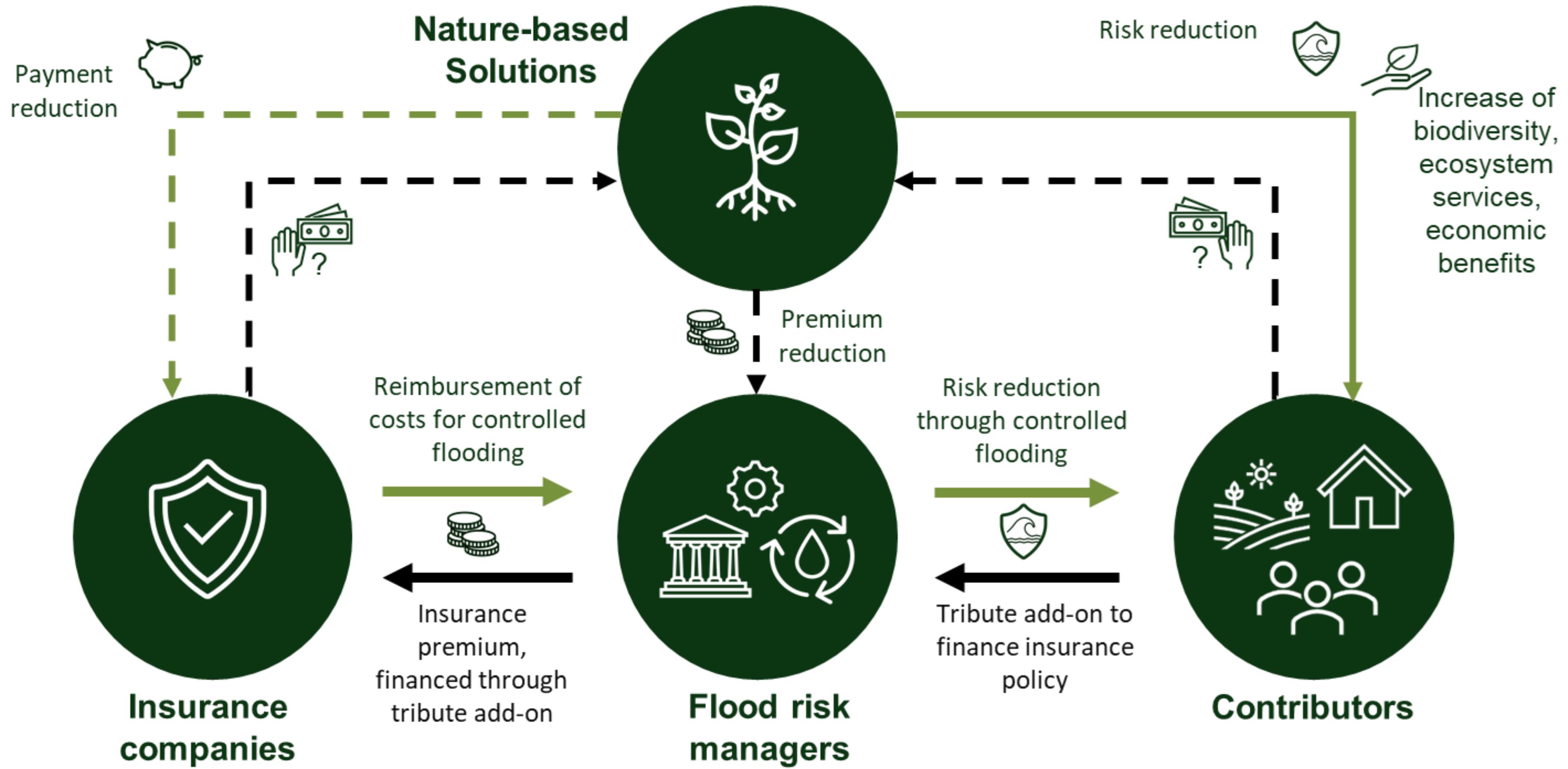
Test how **flood risk managers** and **insurance sector** can **join forces** to reduce flood risk and increase resilience → Scheme that links **controlled flooding**, a **community insurance policy** and **NBS**



# Process

	Session 1: 25 October 2024	Session 2: 12 December 2024	Session 3: 3 February 2025
Group	Academics and adaptation experts	Water boards, flood risk managers, public administrations	Insurance companies, financial regulator, insurance regulator
Organizations	Aarhus University, International Institute for Sustainable Development, Global Infrastructure Basel Foundation   	ADBPO, ANBI Veneto, ANBI Emilia-Romagna, ANBI Lombardia, Regione Lombardia     	Assicurazioni Generali, Banca d'Italia, IVASS   
No. of participants	4	10	8
Focus	Explore the key elements and functioning of the proposed scheme to establish scientific basis	Discuss the normative, administrative and governance aspects of the proposed scheme to identify feasibility and acceptability challenges and gaps	Explore the technical and financial aspects of the proposed scheme, with a focus on the insurance policy

# Proposed scheme



# Results and insights

- Facilitated cross-sectoral collaboration and helped break down institutional silos
- **Identified relevant governance and technical aspects for implementation and scale-up**
  - ✓ Multiple actors need to be involved, parametric policy can ensure meeting insurability criteria
- **Highlighted the importance of ensuring the application of principles of justice and fairness**
  - ✓ Fair compensation to landowners for controlled flooding, purchase of insurance policy financed mostly by downstream community
- **Shown the potential new role water boards can perform in the future**
  - ✓ No longer simply managers of water resources, but managers of the territory and the ecosystem services this provides
- Limitations in NbS financing and quantification
  - ✓ Regulatory changes and standardised practices can facilitate in private financing of NbS and inclusion in insurance pricing



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**Max TESSELAAR**  
Institute for Environmental  
Studies - VU





# NATURANCE



# IVM Innovation Lab

Methods to quantify NbS-benefits to inform investment decisions

Max Tesselaar

Lab Lead, IVM

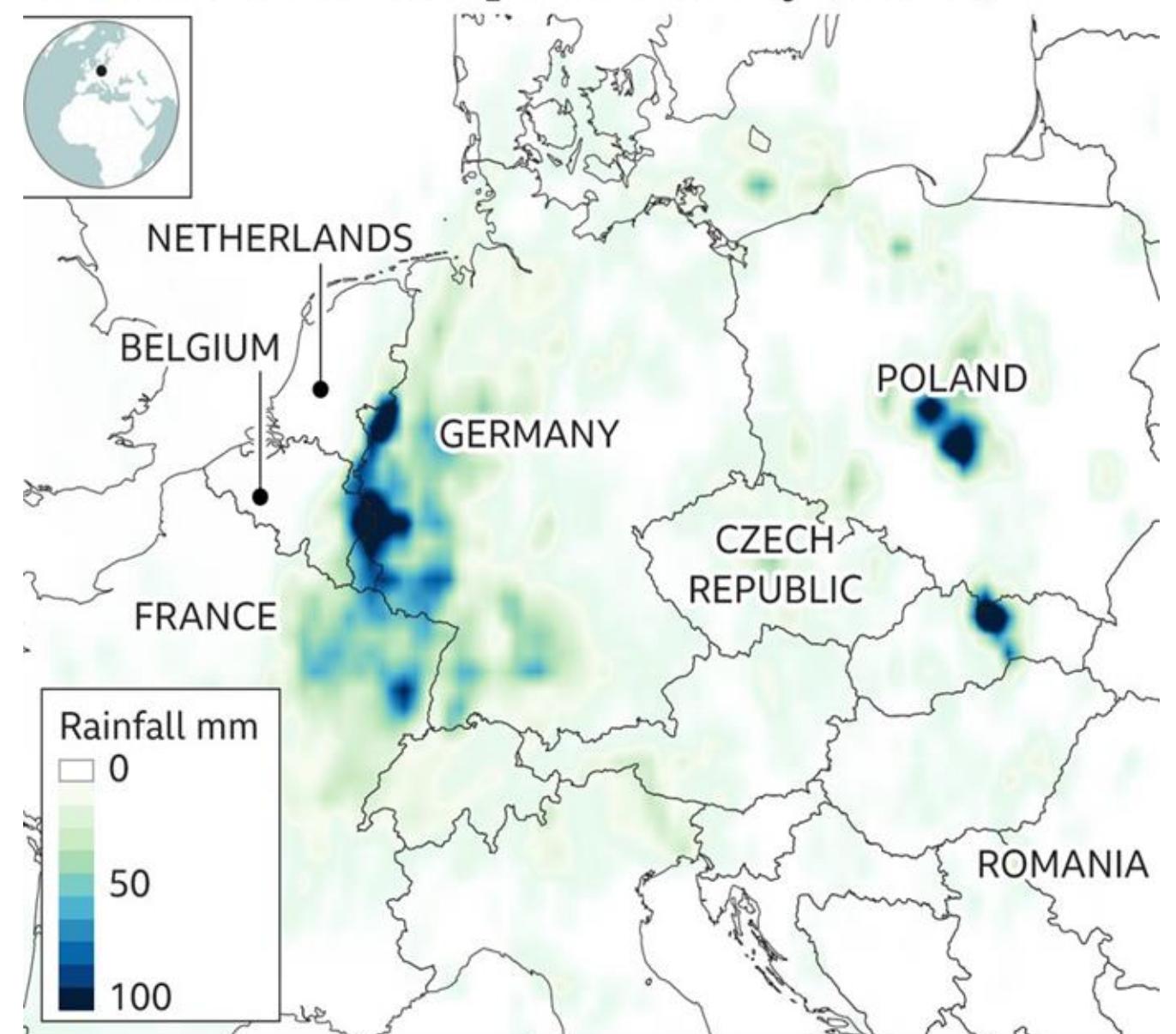
# Case study: The European floods of 2021



## In the Netherlands:

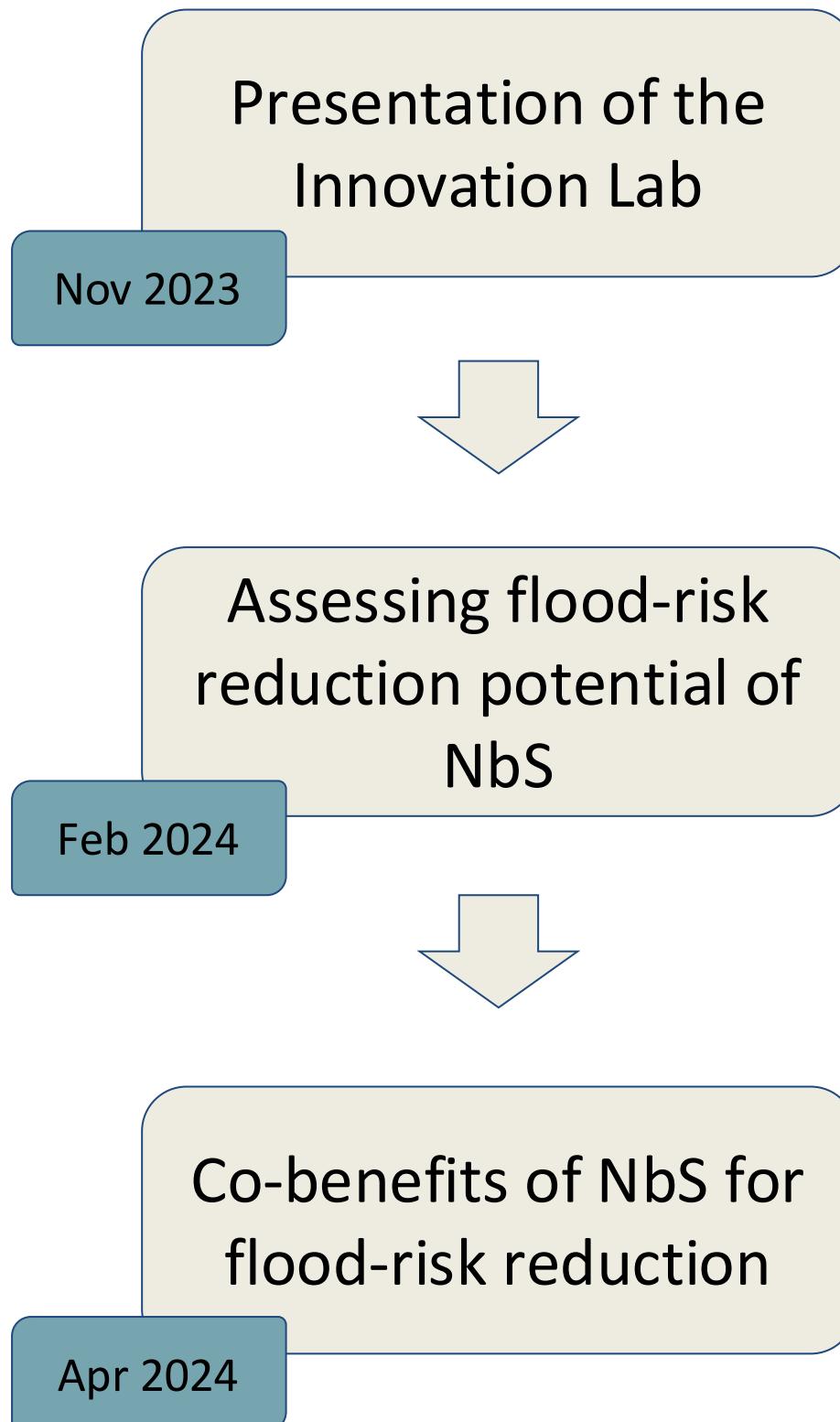
- Total damage: €350 - €600 million (Kok et al., 2023)
- Insured damage: €224 million (Kok et al., 2023)

## Rainfall over Europe on 14 July (24hrs)



Source: NOAA Global Forecast System (GFS), July 14 2021

# Structure of the Innovation Lab



Over **50 stakeholders** from both the public and private sector participated in our Innovation Lab.



# Valuing the co-benefits of NbS: What's the challenge?

- NbS are often overlooked in investment decisions (Raymond et al, 2017), which can lead to underinvestment of NbS.
- Co-benefits can still be valuable for governments, investors and local communities.

## Challenges

- Identifying beneficiaries
- Monetizing non-market benefits

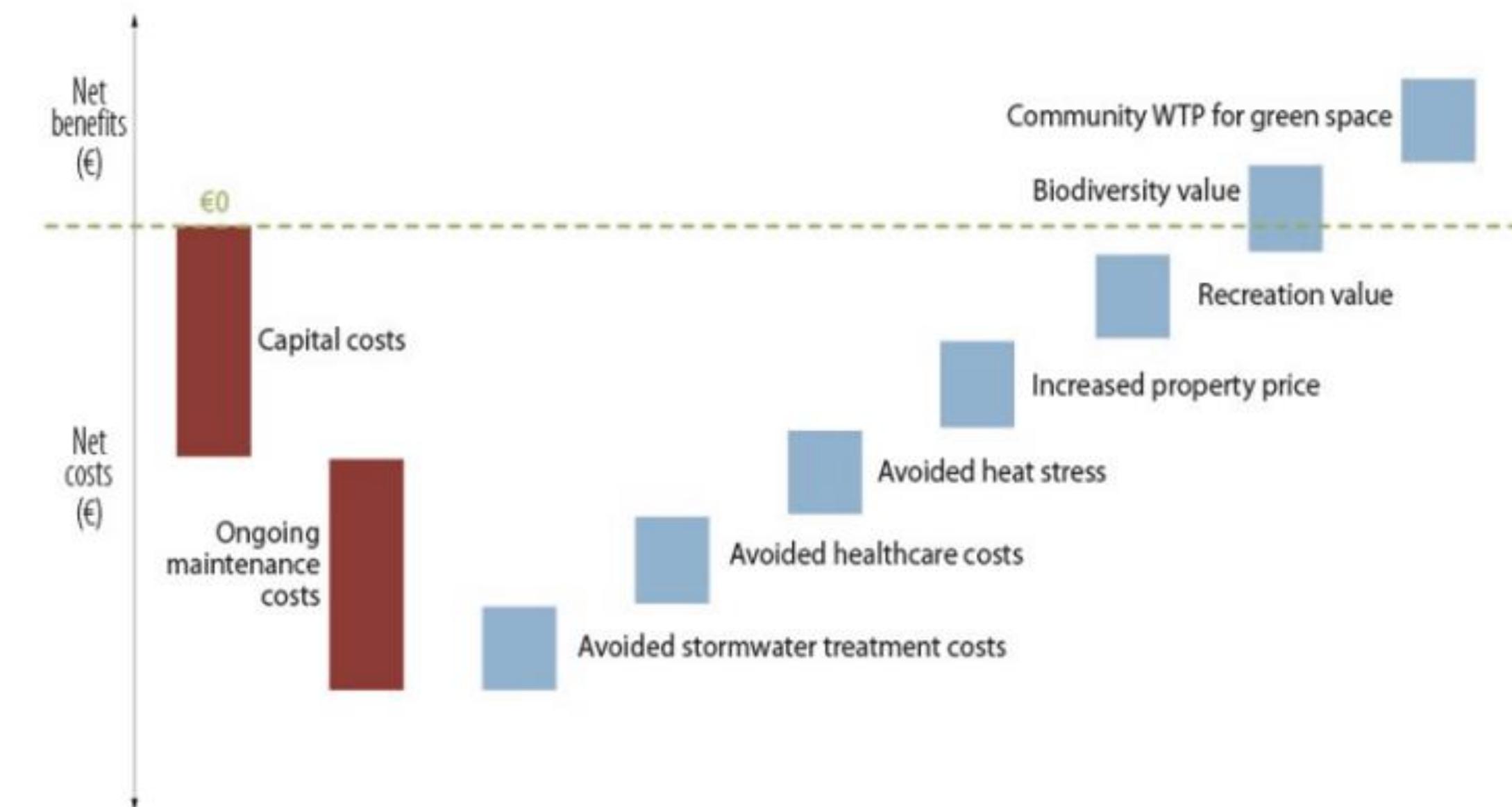
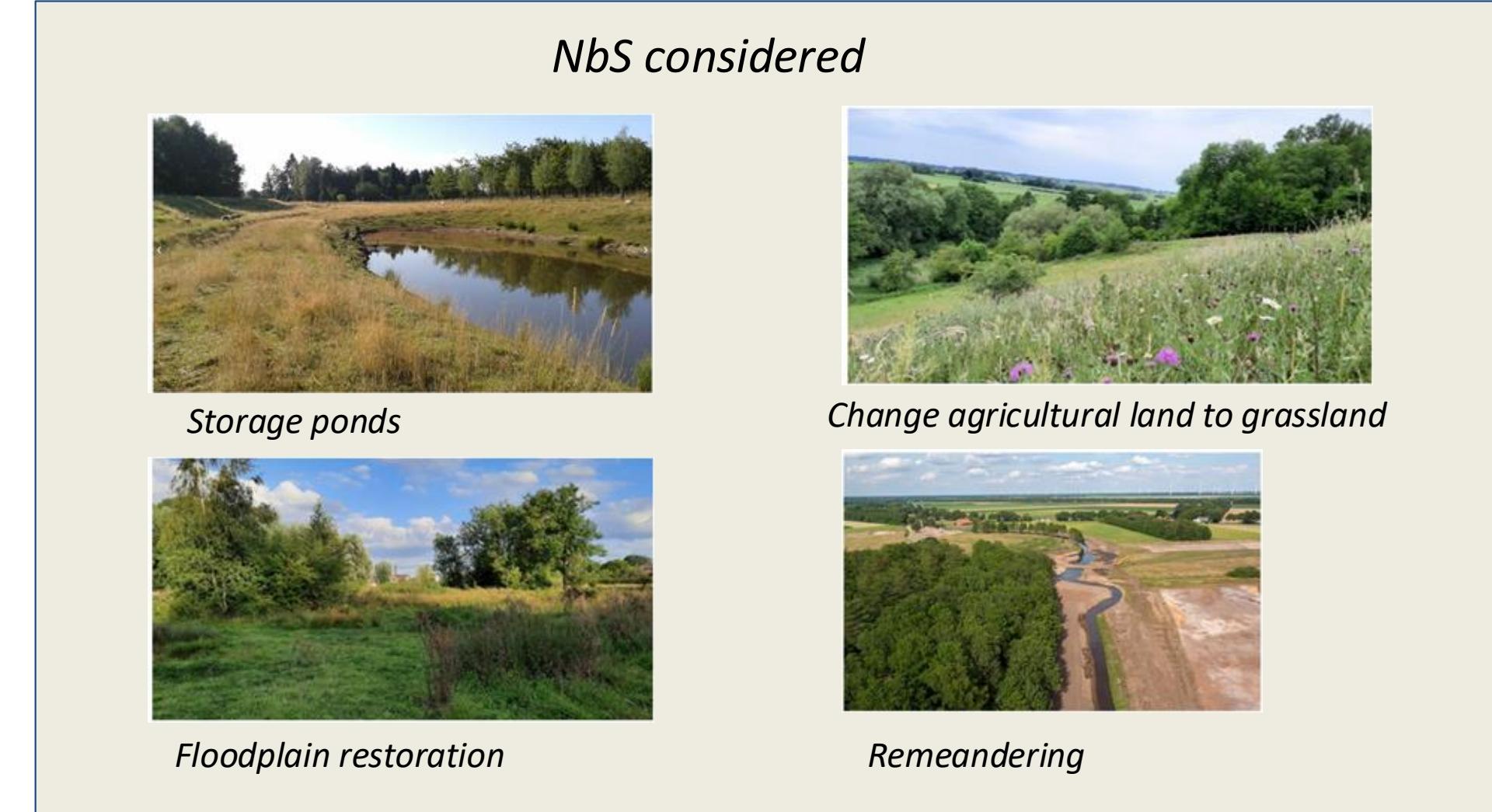


Figure 1: Illustration of an urban nature-based solution (EIB, 2023)

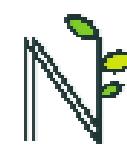


# Valuing the co-benefits of NbS: Discussion with stakeholders

- Stakeholders' input helped to improve the design of the flood risk model and choice experiment:
  - Confirmation of types of NbS planned (floodplains, storage ponds...)
  - Highlighting the most important characteristics (attributes)
  - Land-use related disbenefits were considered relevant for stakeholders (agricultural land loss)
  - Preference for combining NbS with traditional solutions (hybrid)



This input is used for a choice experiment survey that **was be launched in September 2024**.



# Highlights of the Innovation Lab

- **Co-designed exhaustive assessment of risk-reduction and co-benefits of NbS in a specific case study.**
- Recent developments in flood-risk modelling will allow for a better understanding of NbS potential and influence insurability and premiums.
- Co-benefits are usually overlooked in investment decisions and disbenefits, particularly land-use related, are rarely considered.
- Full societal CBA will shed light on potential financing mechanisms, after mapping beneficiaries of different risk-reduction benefits and co-benefits.



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**Joanne LINNEROOTH-BAYER**  
IIASA





# NATURANCE



# IIASA Innovation Lab

**Harnessing insurance to  
promote nature-based  
solutions for wildfire risk  
management**

**JoAnne Linnerooth-Bayer**

**Lab Lead, IIASA**

# Harnessing insurance to promote nature-based solutions for wildfire risk management

Our IL addressed two questions:

- What are NbS for wildfire risk mitigation?
- How can insurance support wildfire NbS?



40+ expert participants including insurers,  
practitioners, researchers



In-person and virtual meetings



# What is an NbS for wildfire risk management?



Photo Handmer, J. 2021



Photo [44932974](#) © [Helen](#) Hotson | [Dreamstime.com](#)



# What is an NbS for wildfire risk management?

## Forest treatment

- Thinning
- Grazing
- Controlled burns
- Mixed forests

Before



After



## Conservation/biodiversity

- Ecological thinning
- Rewilding
- Cultural burns
- Mixed forests
- Outside of WUI, let it burn



# How can insurance support wildfire NbS?



**FOR BIODIVERSITY** The Nature Conservancy's first controlled burn was conducted in 1962, at Helen Allison Ranch. © The Nature Conservancy



# Activities by insurers to support wildfire NbS

Insure ecologically sound forests

Insure prescribed burns

Insure carbon & nature credits

Premium discounts for communities investing in wildfire NbS

## Underwriting Pillar

Insure natural capital

De-risk NbS

Enhancing NbS financing

Incentivise NbS

Decline cover for nature negative projects

## Investment Pillar

ESG + Philanthropy

NbS investments

Nature-negative divestment

Donate to rainforests

Invest in reforestation projects



Consistent with insurance business model



Potential with current insurance business model



Needs a new business model



## For regulators

- Require compulsory adoption of TNFD recommendations?
- **Require insurers to differentiate premiums to reflect DRR and particularly NBS?**

## For the European Commission

- Extend the EUSF to provide subsidized reinsurance to MSs that take DRR-NBS measures?
- Enable public community insurance programs that are better able to invest in NbS, e.g., by reexamining the 2009 EU Directive abolishing public monopolies?
- **Reform the Solvency II Directive to assure that insurer investment policies reflect biodiversity goals of the EU?**





NATURANCE

THANK YOU

# Concluding Remarks

## Insurance Solutions



# NATURANCE



**Swenja Surminski**

**Professor in Practice**

**London School of Economics  
and Political Science (LSE)**

# Key Takeaways

- **Data & Validation**
  - How can we measure the performance of NbS?
  - How could we estimate the impacts of NbS?
- **Revisiting Insurance Design**
  - Where should we integrate nature into underwriting practices?
  - Linking insurance design to NbS performance/climate adaptation
- **Changing the Policy-scape**
  - How is responsibility for risk-reduction delineated?
  - Aligning taxonomies, protocols and standards
- **Equity**
  - Who benefits?
  - Who bears the burden/held responsible?



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*Quantifying the costs and benefits of NbS to inform decision-making*

## BREAKOUT SESSIONS

**Ariane KAPLOUN**



*AXA Climate*

Using parametric insurance to promote sustainable forest management



**Oleksandr SUSHCHENKO**

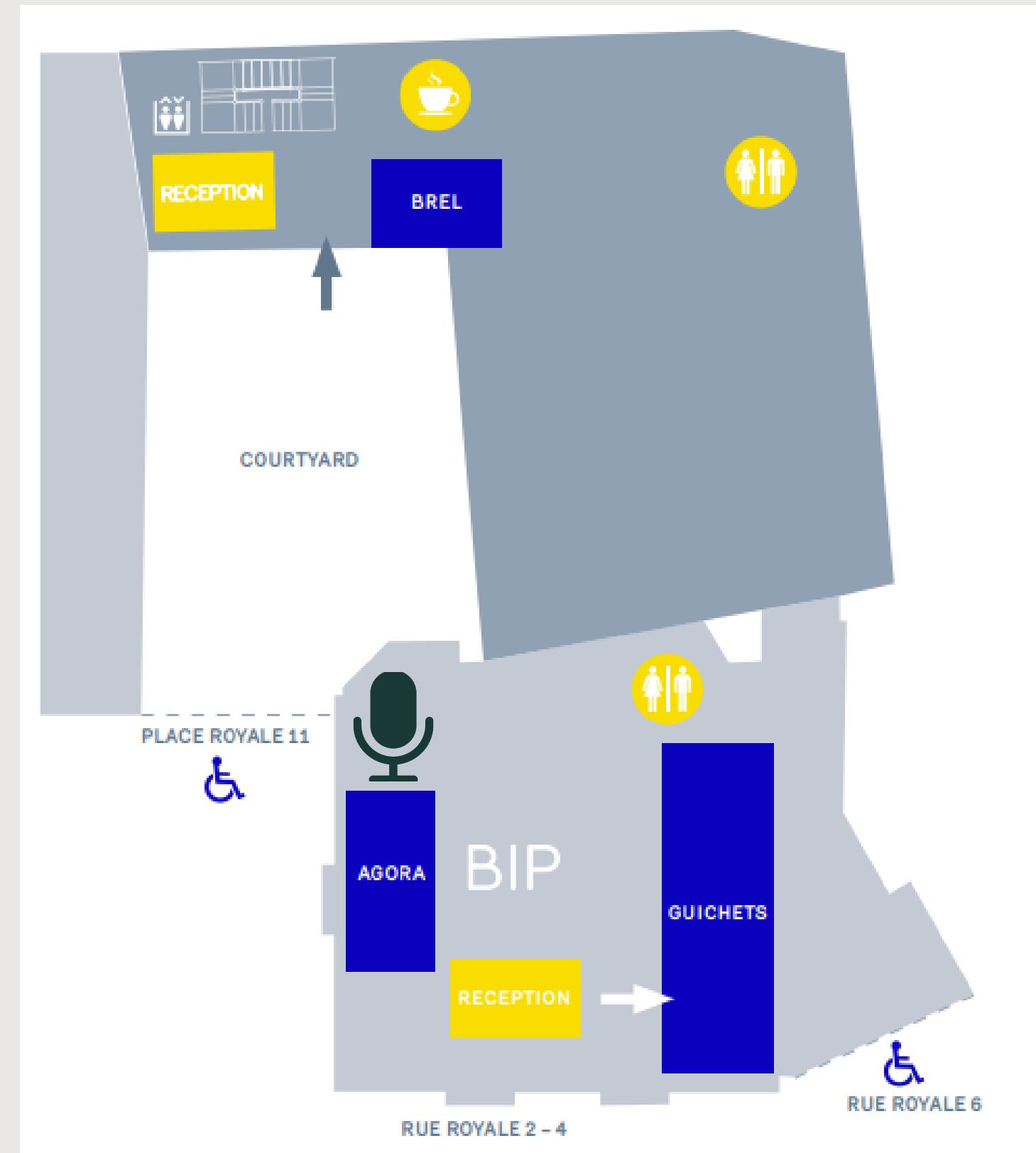


*Helmholtz Centre for Environmental Research*

Result-based framework - The Marjal dels Moros case study wetlands in the Valencian community



# VENUE MAP





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# NATURANCE VOICES

*Science in action:  
Nature for insurance, insurance for nature*



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**Swenja SURMINSKI**

*Marsh McLennan/  
London School of Economics*



**Andrea STACCIONE**

*Euro-Mediterranean Center  
on Climate Change*



**Kelly HEID**

*ICLEI Europe*



**Jerker JARSJÖ**

*Stockholm University*



# Opening Investment Solutions



# NATURANCE



**Swenja Surminski**

**Professor in Practice**

**London School of Economics  
and Political Science (LSE)**

# NATURANCE's 9 Innovation Labs

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**Andrea STACCIONE**  
Euro-Mediterranean  
Center on Climate Change





# NATURANCE

## KIT Innovation Lab

Promoting a network of protected areas to support biodiversity and ecosystem functioning: an opportunity for nature conservation investments?

Andrea Staccione

Lab Lead, KIT/CMCC



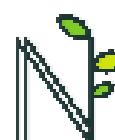
KIT  
Karlsruher Institut für Technologie



Stockholm  
University

# The lab

Explore investment opportunities in nature conservation, with the specific aim of stimulating and increasing private investment to complement public support.



# What We Learned: Key Barriers

What are the interests of the private sector in investing in protected areas? What are the main barriers?



**Lack of standards and guidelines**



**Public subsidies**



**Uncertainty and delayed return of investment**



**Economic value of multiple co-benefits**



**High performance risks of NbS**



**Context-specificity of NbS**



**Unstable regulations**



**Multi-sectoral perspective**



# Enabling conditions and actions

How can nature restoration and protection be made attractive and sustainable for the private sector?



## Opportunities

- Complementary income streams
- Insurance sector engagement
- Payment for ecosystem services
- Business models for NbS



## Actions & Needs

- Capacity building and project bundling
- Evidence generation and valuation
- Bridging scientific and economic perspectives
- Economic drivers of degradation
- Co-creation scenarios



## Enablers

- Intermediary structure
- Blending green and grey infrastructure

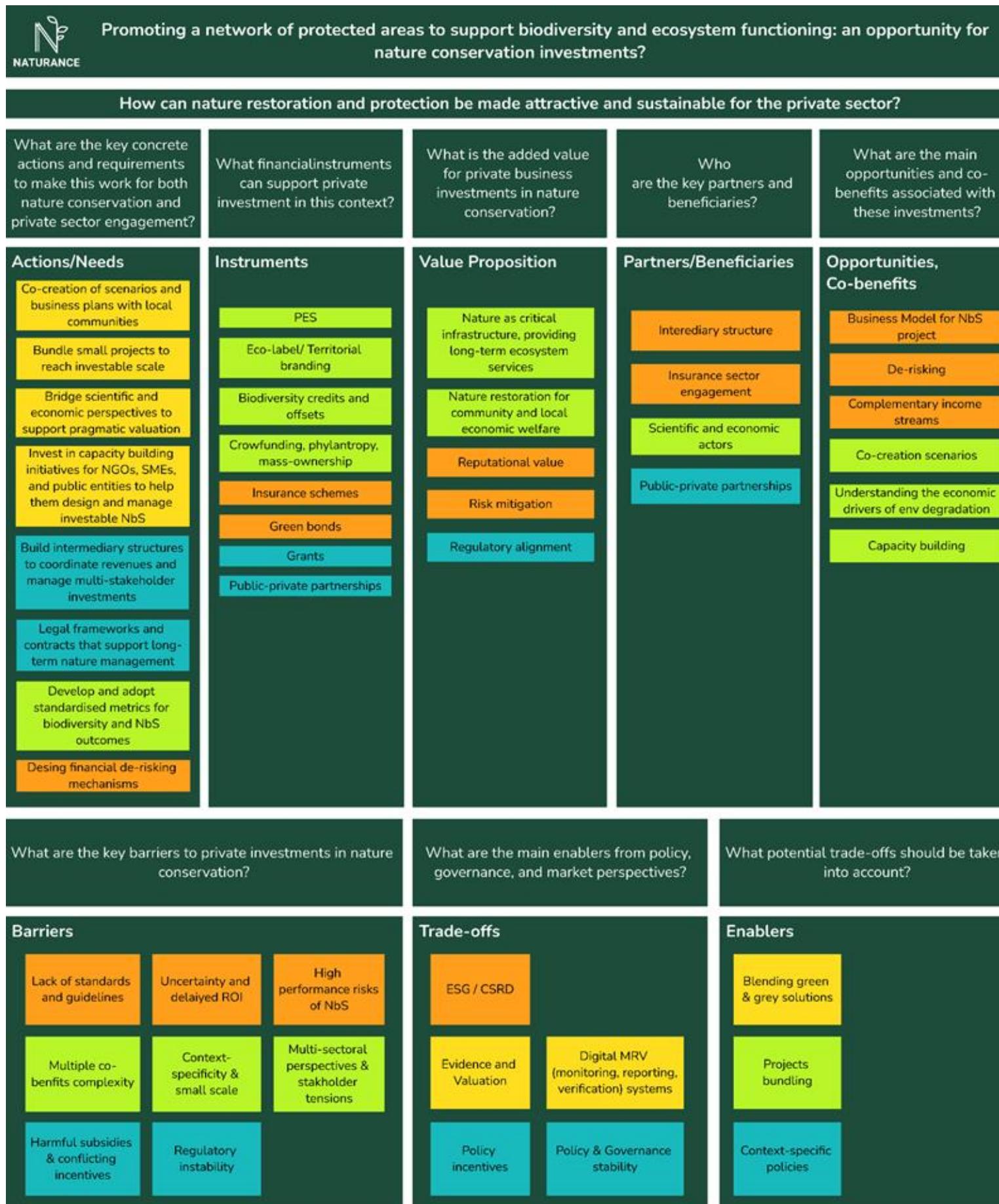


## Trade-offs

- Scale mismatch
- Stakeholder tensions
- Context-specific policies



# Operational roadmap



## Simplified Business Model Canvas including **Value Proposition, Partners & Beneficiaries, Instruments, Barriers, Actions & Needs, Enablers, and Trade-offs**

Inputs have been classified into thematic categories based on the main insights from discussions:

- **Public, Policy, Governance**
- **Risk**
- **Multifunctionality of Nature**
- **Mix**

This is meant to inform recommendations, suggestions and actions to promote nature protection investments, emphasising the importance of integrated frameworks and approaches to secure finance for conservation while generating vital ecological, social, and economic co-benefits for long-term resilience.



# Successful factors and obstacles - take home messages

## Mobilising private capital for nature conservation requires a mix of complementary instruments

- there is no single “best tool”.

Effective strategies should:



**de-risk investments** through public–private cooperation,



**blend funding sources** to achieve long-term sustainability,



use **insurance and ESG frameworks** to integrate risk reduction and transparency,



and **promote local value creation** through territorial branding, eco-labels, ecotourism, and community models.

Scaling private investment in protected areas requires:



**stable regulations,**



**credible standards,**



**robust monitoring,**



and **clear value propositions** that link ecological performance with economic returns.

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## 11:30 13:00 **CAPITAL FOR NATURE: INVESTMENT SOLUTIONS**

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**Kelly HEID**  
ICLEI Europe





# NATURANCE



Karlsruher Institut für Technologie



Local Governments  
for Sustainability



Stockholm  
University

# ICLEI Innovation Lab

Advancing Nature-based Solutions  
through Innovative Finance

**Kelly Baldwin Heid**

**Lab Lead, ICLEI**

# Innovation Labs Overview

## **Session 1 (May 2025): Identifying Barriers & Enablers**

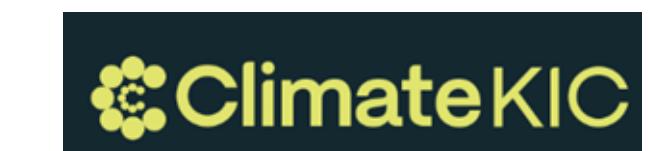
Collaborative exploration of obstacles and opportunities for financing and funding green infrastructure in cities.

## **Session 2 (June 2025): Exploring PPPs & Insurance**

In-depth analysis of Public-Private Partnerships and the role of insurance in de-risking NbS investments.

## **Session 3 (July 2025): NbS Project "Pitches"**

Cities presented NbS projects to an expert panel (finance, insurance, philanthropy) with live feedback, enabling rapid peer learning and actionable recommendations.



# Case Studies of Innovative Approaches to Cross-Sector Collaboration

## Poznan: Crowd Planting and Gifts in Kind

- Partnership involving the city, a philanthropic funder (Volkswagen Foundation; Reforest'Action), and a local project leader (GreenUp)



Source: Invest4Nature

## Aarhus: Blended Finance Model

- Created blended finance structure (50% water utility, 25% municipality, 25% private/partnerships)
- Hosted workshops with banks
- Engaged companies via donations, crowdfunding, and ESG alignment



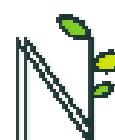
Converted 8.000 hectares of arable land to forest or nature

Source: Invest4Nature



## Session 3: Pitch Session with Expert Panel and Cities

Cities presented NbS projects to an expert panel (finance, insurance, philanthropy) with live feedback, enabling rapid peer learning and actionable recommendations.



# Session 3 Pitch from Gdańsk: Renaturing of Public Spaces



## NbS project:

- De-pave surfaces, improve soil quality, and incorporate native plants
- 1.200 sqm, total estimated cost of €420.000

GDAŃSK

## Potential partners:

- Local businesses, including SMEs, hotels, and shopping centers
- Green participatory budget & Gdańsk Green Fund



# Key Conclusions

- **Peer-to-peer learning was transformative**

Cities sharing practical financing approaches provided valuable real-world lessons that traditional guides cannot offer

- **Pitch format proved effective and replicable**

The direct city-expert dialogue model demonstrated high engagement and practical value for all participants

- **Multiple opportunities for private investment exist**

Private capital is available but requires appropriate framing, preparation, and intermediary structures

- **Cities need structured spaces for expert feedback**

Creating forums for direct, non-transactional dialogue between cities and financial/insurance actors builds capacity and confidence

- **Ongoing connections are essential**

Follow-up actions are actively facilitating new relationships among cities, experts, and financial actors

- **Quantifying co-benefits explicitly and tailoring narratives can attract financing and funding**

Customizing messaging for different funder audiences and priorities



4 FEBRUARY 2026

09:30  
11:00 *From Risk to Resilience: Insurance Solutions*

11:00  
11:30  Break

## CAPITAL FOR NATURE: INVESTMENT SOLUTIONS

13:00  
14:30  Lunch

14:30  
16:00 *Communities Connect: Advancing NbS through Insurance and Investment*

16:00  
16:30  Break

16:30  
18:00 *Quantifying the costs and benefits of NbS to inform decision-making*



**Jerker Jarsjö**  
Stockholm University





# NATURANCE



Stockholm  
University

# SU Innovation Lab

**Wetland restoration as NbS:  
Management and financing  
needs**

**Jerker Jarsjö & Zahra Kalantari**

**Lab Leads**

**Stockholm University**

# The background: why this lab?

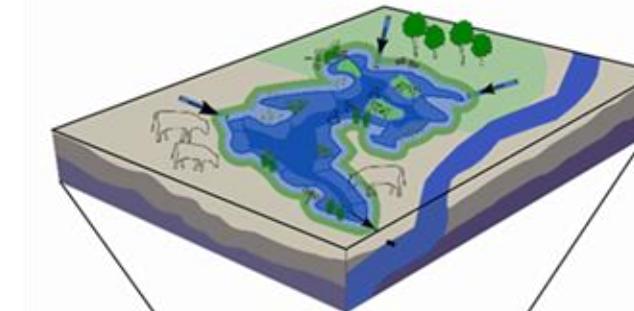
- Wetland restoration efforts are considerable in Sweden (>150 km<sup>2</sup> restored areas since 2010), the EU and other world regions.
- State funding for restoration measures will continue to be available e.g. in Sweden.
- Supports a bottom-up approach with some coordination at the county level.
- What will be the outcome?



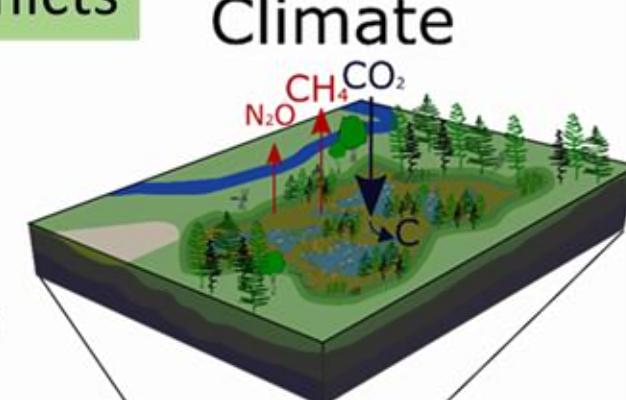
The goals of wetland restoration projects are diverse and in some cases conflicting

## Wetlands as NbS: Synergies & goal conflicts

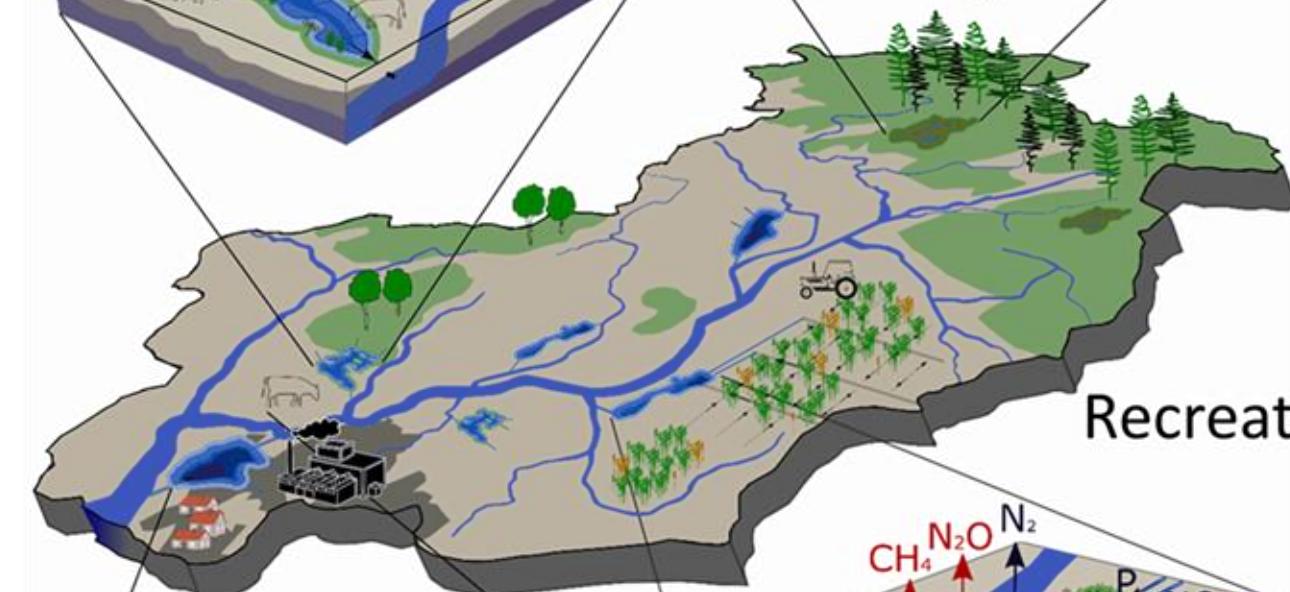
### Biodiversity



### Climate



### Recreation



### Nutrients

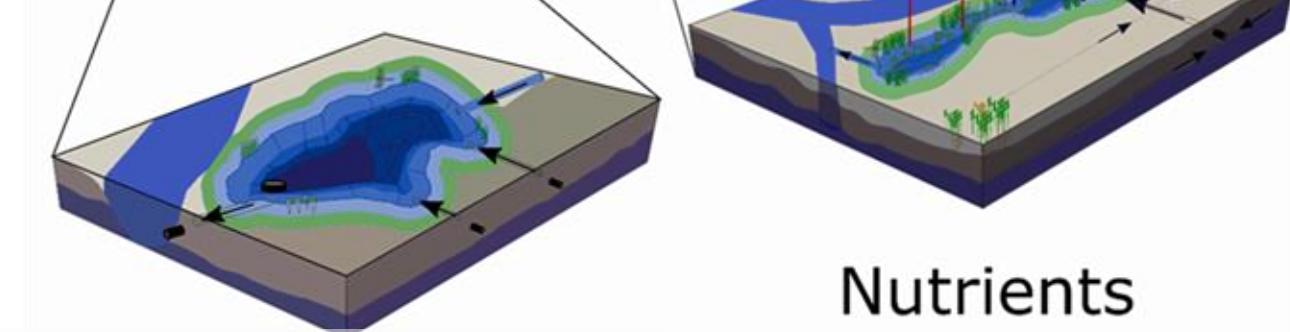


Illustration by Lea D. Schneider



# Aims

## Explore:

- If, how and when restored wetlands can be used as nature-based solutions for such multiple ecosystem services
- Potential barriers and related innovative solutions, for making restoration projects successful
- Potential finance solutions for enhanced goal accomplishment

and suggest **pathways forward**



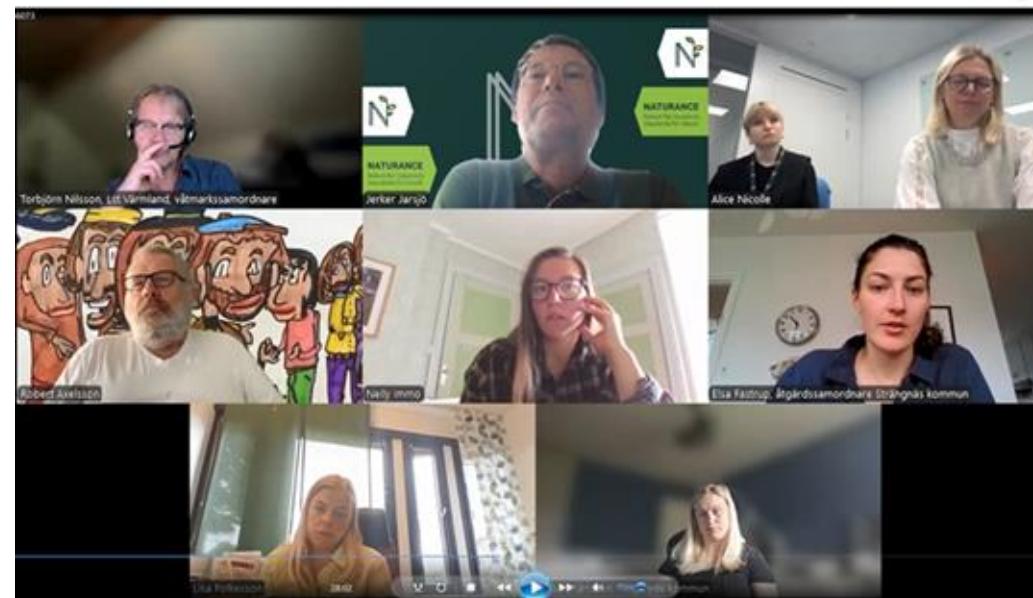
Photo: John Strand et al. (2024)



# Lab setup and participants

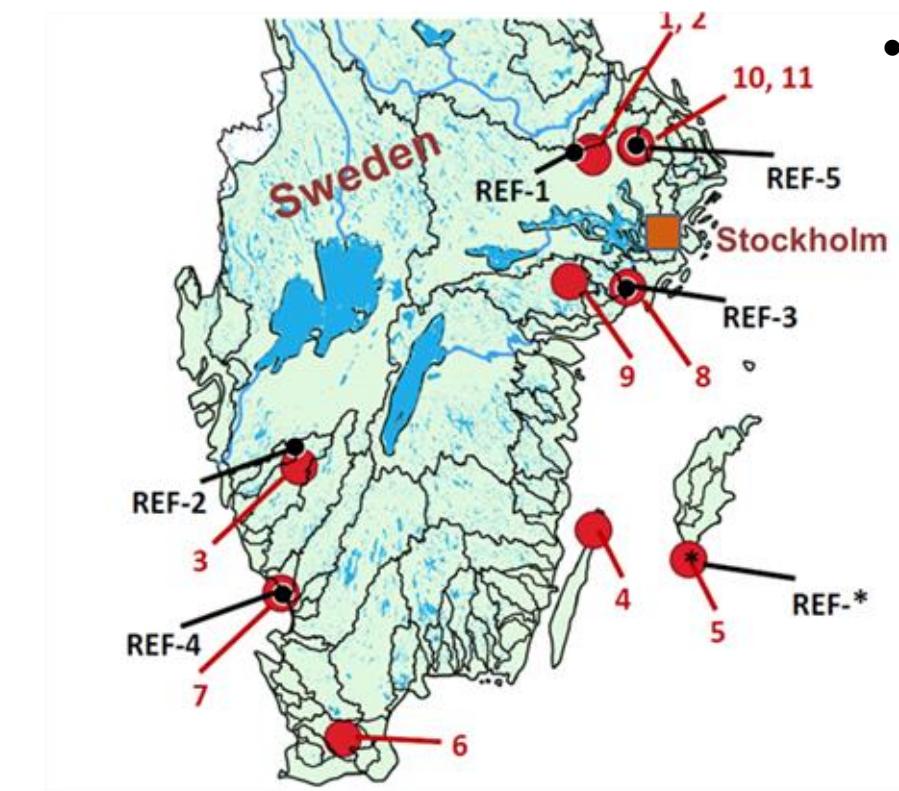
## 1st and 2nd sessions (June & August 2025)

- Identification of current barriers for successfully reaching wetland restoration targets, and formulation of forward-looking solutions.
- Participants include private land owners, county boards, municipalities and governmental agencies



## 3rd lab session (September 2025)

- Taking steps towards accelerating the NbS financing and implementation by exploring alternative finance solutions to complement current heavy domination of resources from central government.
- Co-hosted by International Institute for Applied Systems Analysis (IIASA), Vienna. Many participants from the 1st and 2nd round joined again, plus new participants e.g. from insurance companies and universities



# Case example showing alignment of economic and ecological outcomes

Low valuation of rewetted/ undrained land may to large extent be mitigated by exploring and implementing role model examples that contribute to market creation for novel businesses.

- In Sweden, there is increasing interest for keeping water buffaloes in and near rewetted farmland, taking advantage of grazing benefits that decrease long-term maintenance costs of the wetlands while at the same time revenue can be generated through the sale of dairy products and meat products.
- In Ireland, role model examples include generating revenue from the sale e.g. of blueberries and cattails. However, since the revenue is relatively limited in the latter cases, other solution strategies are also needed, including land compensation programs.



# Key takeaway: What makes NbS financially viable for landowners

Some Swedish actors (land-owners) expressed that the main factors preventing them from pursuing rewetting projects were the uncertainties and risks associated with the rewetted land, including the flooding risks from extreme events and/ or from potential NbS malfunction.

- This suggests that the development of insurance solutions that encompass such risks could accelerate the rewetting process, particularly for small- to medium-sized landowners.
- Can preferably be combined with solution pathways that include acquiring observational evidence of NbS efficiency.
- Other insurance solutions including e.g. reduced insurance fees (for common goods contributions; mitigating goal conflicts) may also be viable, in particular when combined with solutions pathways such as identifying / taking advantage of NbS co-benefits and coordination dialogues.

This situation is likely shared with several other EU countries.



4 FEBRUARY 2026

09:30  
11:00

*From Risk to Resilience: Insurance Solutions*

11:00  
11:30



Break

11:30  
13:00

## CAPITAL FOR NATURE: INVESTMENT SOLUTIONS

13:00  
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Lunch

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*Communities Connect: Advancing NbS through Insurance and Investment*

16:00  
16:30



Break

16:30  
18:00

*Quantifying the costs and benefits of NbS to inform decision-making*

## BREAKOUT SESSIONS



Andrea Staccione  
Euro-Mediterranean  
Center on Climate Change



Marketplace & game:  
Financing Nature-  
based Solutions



John Garvey  
University of Limerick



Ahmet R. Demirtas  
Agcurate B.V.



Designing insurance as  
a catalyst  
for nature-positive  
finance



Siobhan McQuaid  
Trinity College Dublin  
& Horizon Nua



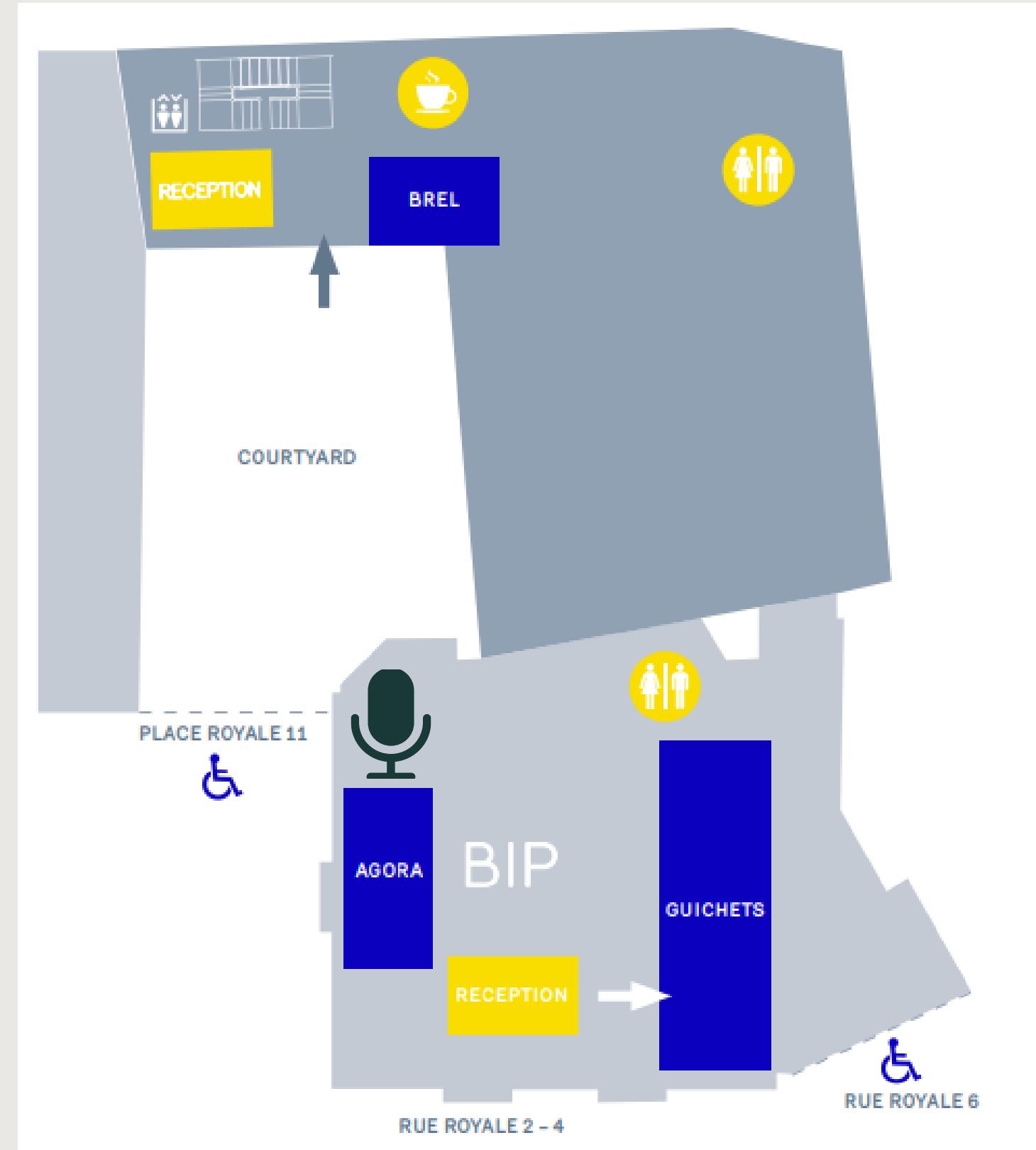
Joanna Wolstenholme  
UNEP-WCMC



Financing the nature-  
positive transition:  
Unlocking capital for  
scalable NbS



# VENUE MAP



3-5 FEBRUARY 2026 | BRUSSELS INFO PLACE

# FINANCE INNOVATION FESTIVAL

LUNCH  
13:00-14:30



INSURANCE AND INVESTMENT OPPORTUNITIES  
FOR **NATURE-BASED TRANSFORMATIONS**



Funded by  
the European Union



# NATURANCE VOICES

*Science in action:  
Nature for insurance, insurance for nature*



4 FEBRUARY 2026

09:30  
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11:00  
11:30  Break

11:30  
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13:00  
14:30  Lunch

## 14:30 16:00 **COMMUNITIES CONNECT: ADVANCING NbS THROUGH INSURANCE AND INVESTMENT**

16:00  
16:30  Break

16:30  
18:00 *Quantifying the costs and benefits of NbS to inform decision-making*

## SESSION LEAD



**Laura PIRAZAN PALOMAR**  
ICLEI Europe



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16:30  
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*Quantifying the costs and benefits of NbS to inform decision-making*

 Brel



Insurance as an enabler for nature-led resilience  
**Callum ELLIS**  
Marsh McLennan



Financing NbS at regional scale:  
Connecting territories, instruments,  
and practices

**Giada BASTANZI**  
Euro-Mediterranean Center on  
Climate Change



De-risking & scaling investment for  
Nature-based Solutions in climate  
adaptation  
**Anna Lea EGGERT**  
World Climate Foundation

 Agora



De-risking & scaling investment for  
Nature-based Solutions in climate  
adaptation  
**Richard FILCAK**  
Slovak Academy of Sciences



From forest disasters to investable  
resilience: basin-scale NbS that  
reduce flood–drought–fire–insect  
risk.

**Ye SU**  
Charles University



Indicators to measure progress  
towards the nature-positive  
economy  
**Siobhan MCQUIAD**  
Trinity College Dublin &  
Horizon Nua



Investing in nature is profitable, now  
let's make it actionable  
**Laurence DREZE**  
WWF Belgium

 Guichets



Nature-based Solutions for carbon  
neutral cities: Quantifying the  
benefits of NbS  
**Jessica PAGE**  
Stockholm University



Shared responsibility to finance  
nature-based risk reduction in  
smallholder value chains  
**Jana BÜSSING**  
OroVerde



EU RoadMap on Nature Credits  
**Marialuisa TAMBORRA**  
European Commission, DG ENV



Governing Insurability  
**Mia WILKE**  
WWF Switzerland



# World Café instructions



## ① Start at Your Table

### - Choose your first table

→ Please begin at the table you selected in advance

## ② Join the Conversation

### 30 minutes per round

→ Each table discusses one key topic  
→ Guided by a table host

## ③ Rotate Tables

### Time to move!

→ After **30 minutes**, move clockwise to the next table in the room  
→ Table hosts stay, participants rotate



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Brel



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Agora



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European Commission, DG ENV



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**Mia WILKE**  
WWF Switzerland





3-5 FEBRUARY 2026 | BRUSSELS INFO PLACE

# FINANCE INNOVATION FESTIVAL

**Coffee break**  
16:00 - 16:30

INSURANCE AND INVESTMENT OPPORTUNITIES  
FOR **NATURE-BASED TRANSFORMATIONS**

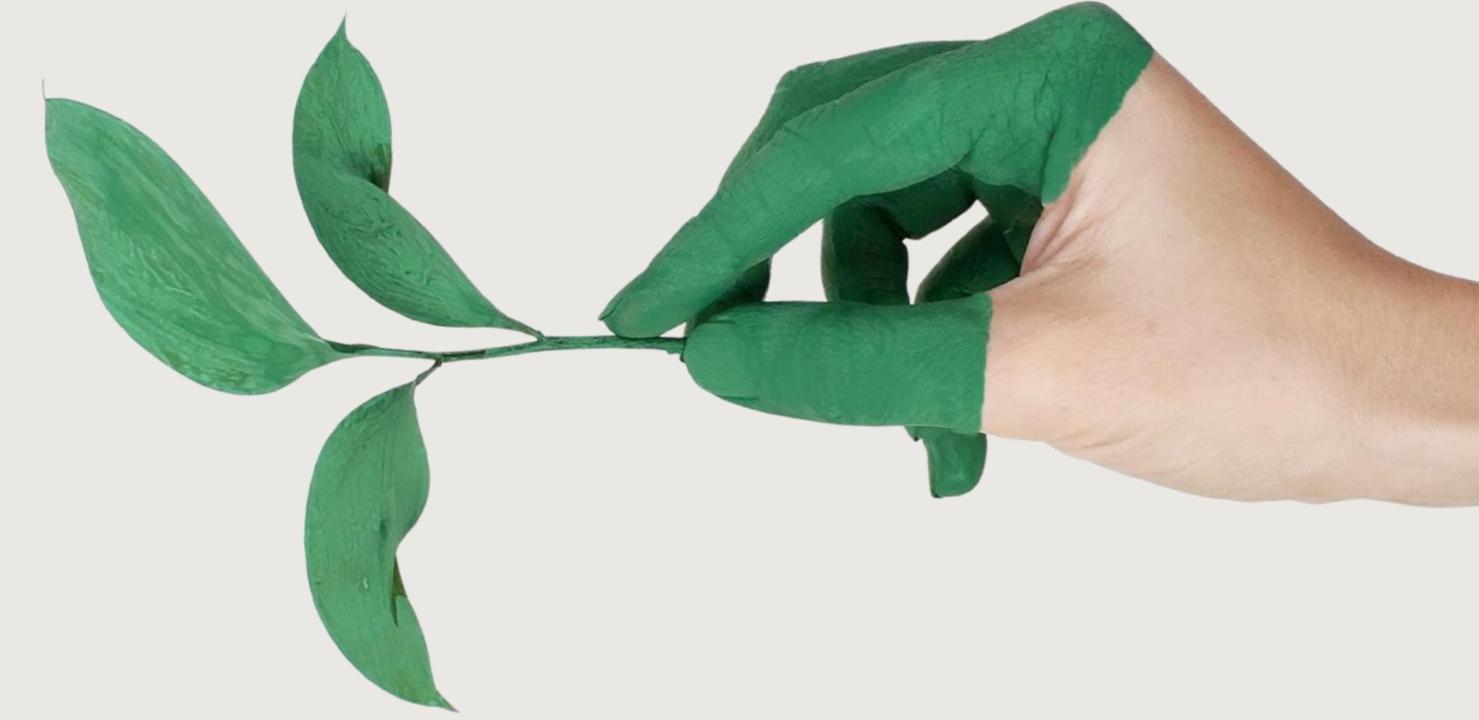


Funded by  
the European Union



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16:30  
18:00 **QUANTIFYING THE COSTS AND BENEFITS OF  
NbS TO INFORM DECISION-MAKING**

## MODERATOR



**Max TESSELAAR**

Institute for  
Environmental Studies -  
VU



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**Max TESSELAAR**

*Institute for Environmental  
Studies - VU*



**Veerle BRIL**

*Institute for Environmental  
Studies - VU*



**Guillermo GARCIA ALVAREZ**

*Institute for Environmental  
Studies - VU*



**Neil GUNN**

*Willis Research Network*



**Vylon OOMS**

*Dutch Association of  
Insurers*



4 FEBRUARY 2026

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**Veerle BRIL**  
*Institute for Environmental  
Studies - VU*



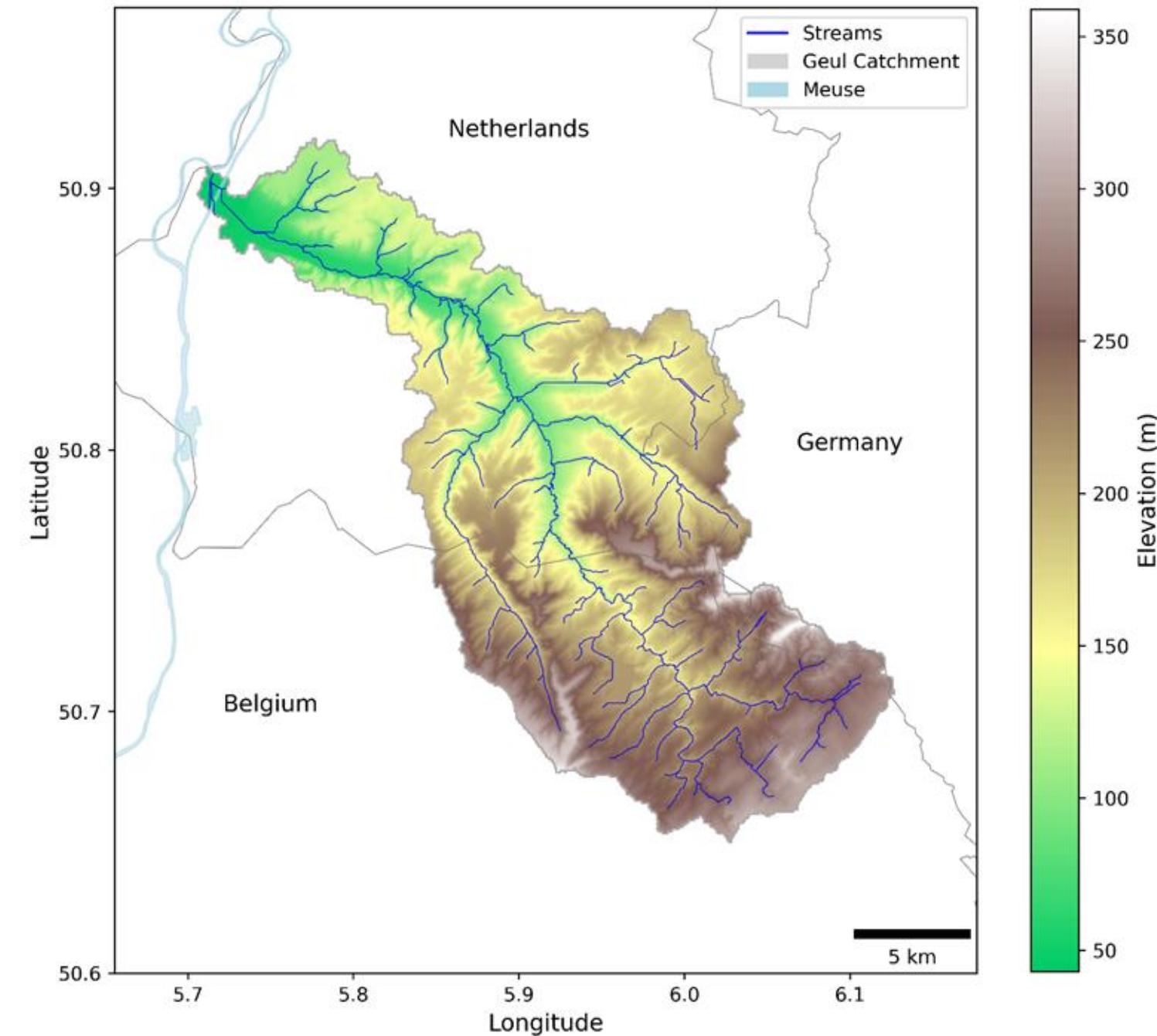


Developing a new model to model the flood risk  
reduction of nature-based solutions (NBS)

- NBS seem promising, but investors are hesitant
- Uncertain how much flood risk reduction they provide on a catchment scale
- Can lower risk-based flood insurance premiums
- **Goal:** to model the effect of several NBS in a comprehensive framework

# Case Study Area: the Geul catchment

- Small catchment: 350 km<sup>2</sup>
- Transboundary
- Large flooding 2021: € 250 million damage
- Need for new adaptation measures
- Co-design with stakeholders



# Case Study Area: the Geul catchment

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## Reforestation

- Scenario: increase forest area by 10% (= 10 km<sup>2</sup>)



## Conversion of cropland to natural grassland

- Scenario: convert 10 km<sup>2</sup> of croplands into natural grasslands

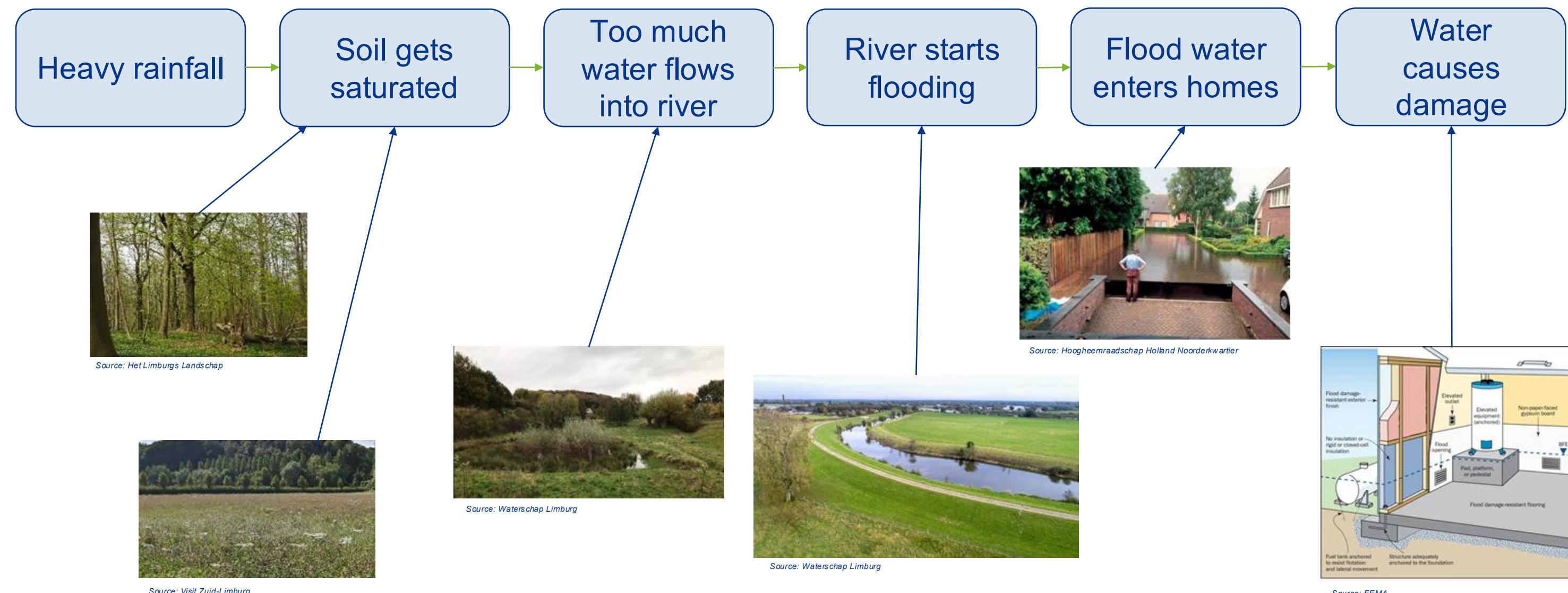


## Storage ponds

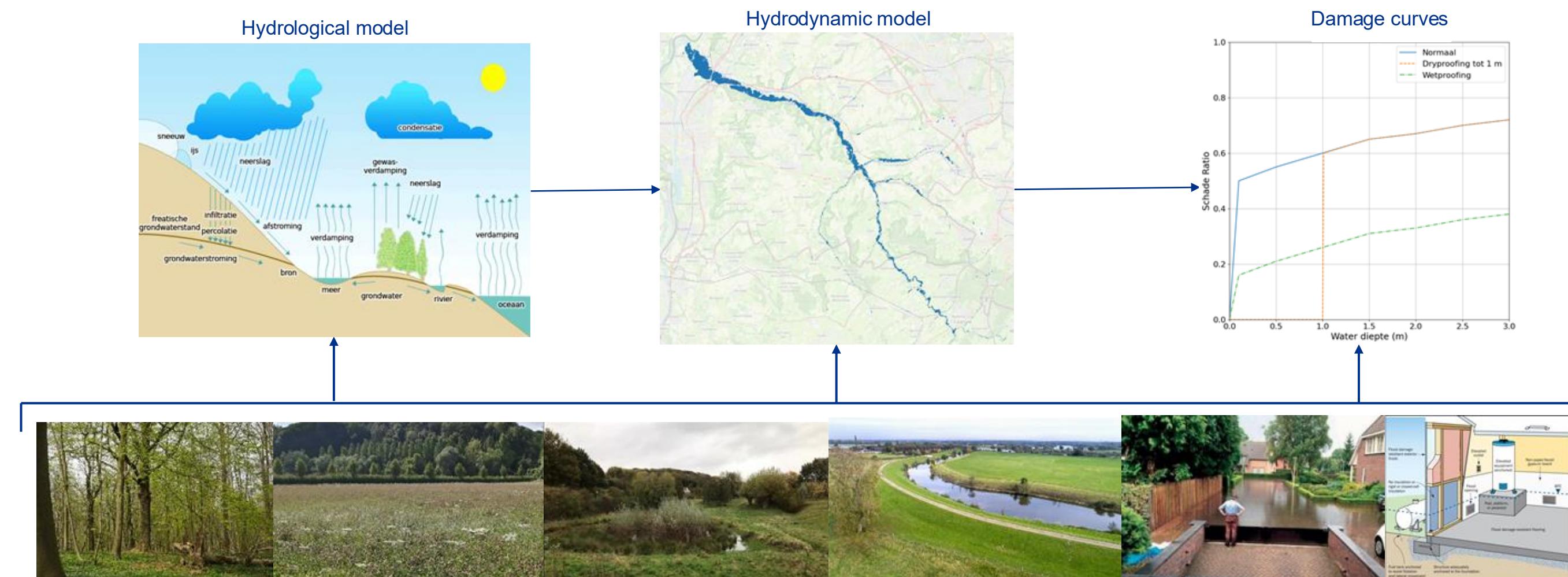
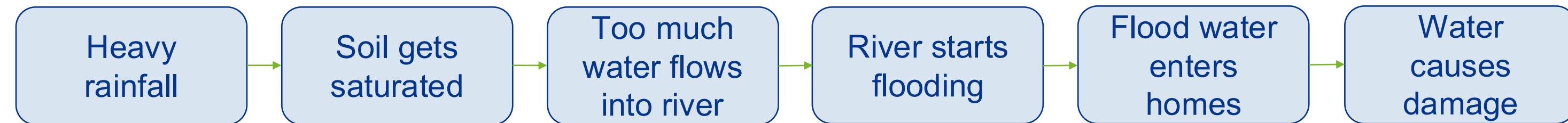
- Scenario: enlarging current storage ponds plus creating new ponds upstream



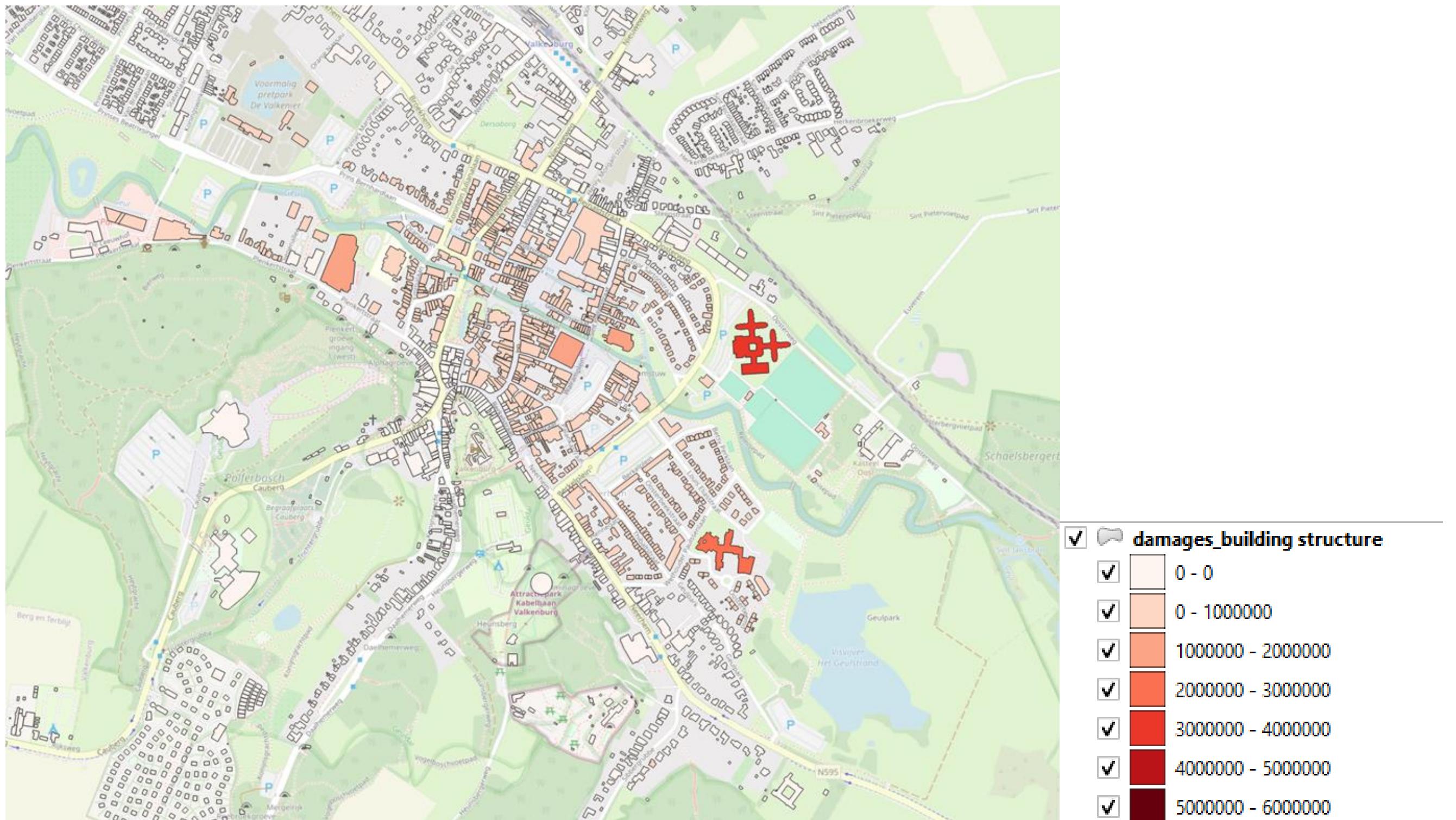
# Functioning of measures



# How to model functioning of measures

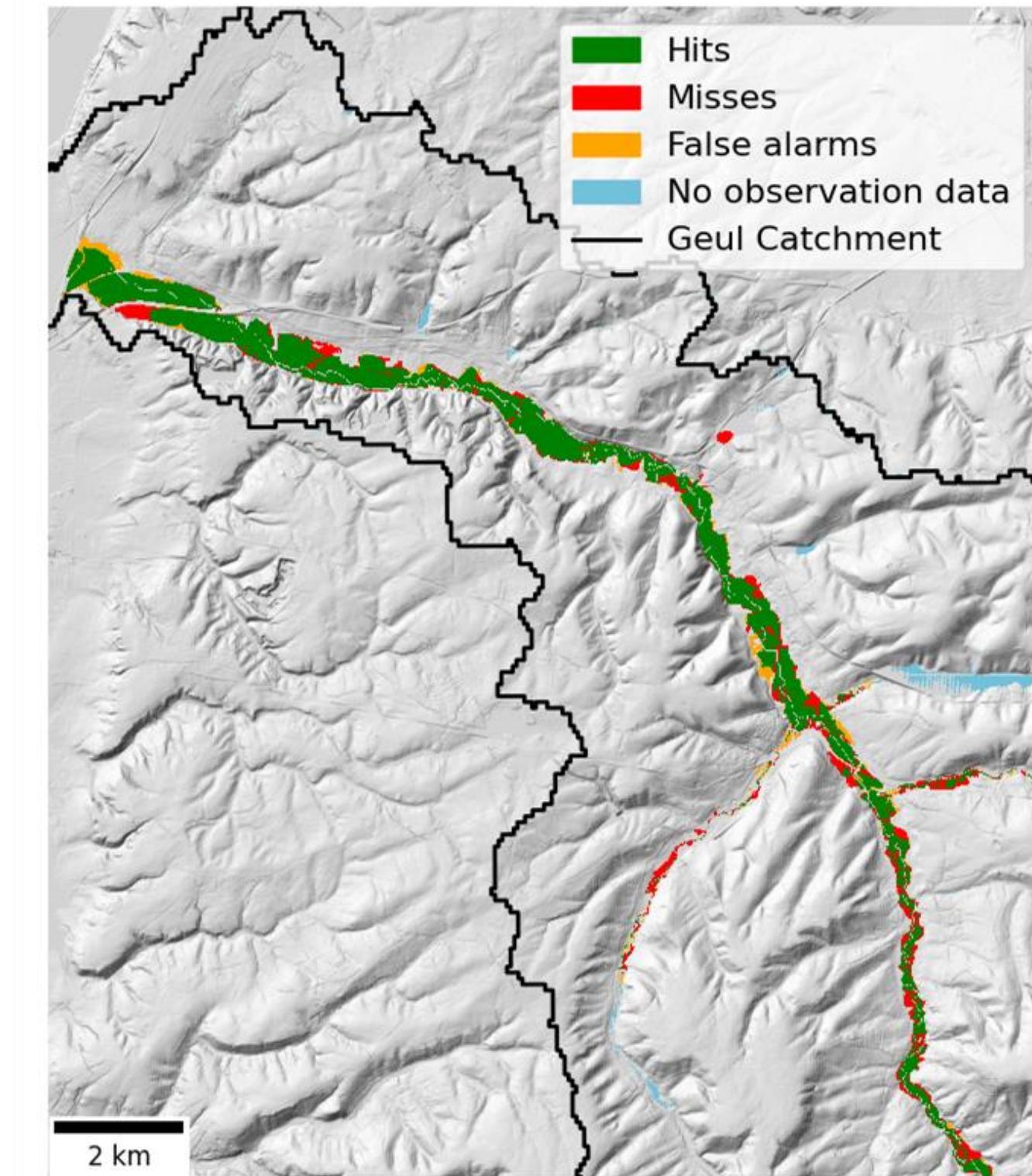


# Model outputs



# Model validation

- Flood extent:
  - Comparing observations to simulations for July 2021
  - CSI (critical success index): 0.74
  - Good performance



# Results CBA

	Do nothing	Reforestation (10 km <sup>2</sup> )	Conversion of agricultural land to grassland (10 km <sup>2</sup> )	Expanding storage ponds (+ 1 m)
<b>Flood extent 2021 (km<sup>2</sup>)</b>	9.86	8.68	8.68	9.7
<b>Expected Annual Damage (mln euro / yr)</b>	8.45	5.27	5.72	8.37
<b>Estimated costs (mln euro)</b>	-	16.8 – 100.2	11.2 – 101.2	9.9
<b>BCR</b>	-	0.63 – 3.28	0.61 – 3.72	0.16

# Conclusion

- Developed spatially-detailed flood risk model on a catchment scale
- Nature-based solutions reduce flood risk
- NBS can be attractive for insurers to increase insurability
- Sometimes other co-benefits are needed to make an investment economically attractive
- Model developed for the Geul because of data availability, but can be applied elsewhere
- Presentation based on:  
Bril, V., de Bruijn, J., de Moel, H., Sadana, T., Busker, T., Botzen, W., Aerts, J.C.J.H. (2026). *Assessing the effectiveness of nature-based solutions and building-level flood risk reduction measures*. In Review.

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**Guillermo GARCIA ALVAREZ**  
*Institute for Environmental  
Studies - VU*





# NATURANCE



Funded by  
the European Union

This project has received funding from the European Union's Horizon Europe - the Framework Programme for Research and Innovation (2021-2027) under grant agreement No. 101060464.

## Assessing benefits of NbS: Implications for financing schemes

Guillermo García Álvarez, Andrea Staccione,  
Max Tesselaar, Wouter Botzen

*December 2025*

# Nature-based Solutions



*“Solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience” (EC)*

Nature-based solutions (NbS) and nature restoration are considered **key actions required to transform our relationship with nature and enhance our resilience to the global challenges.**

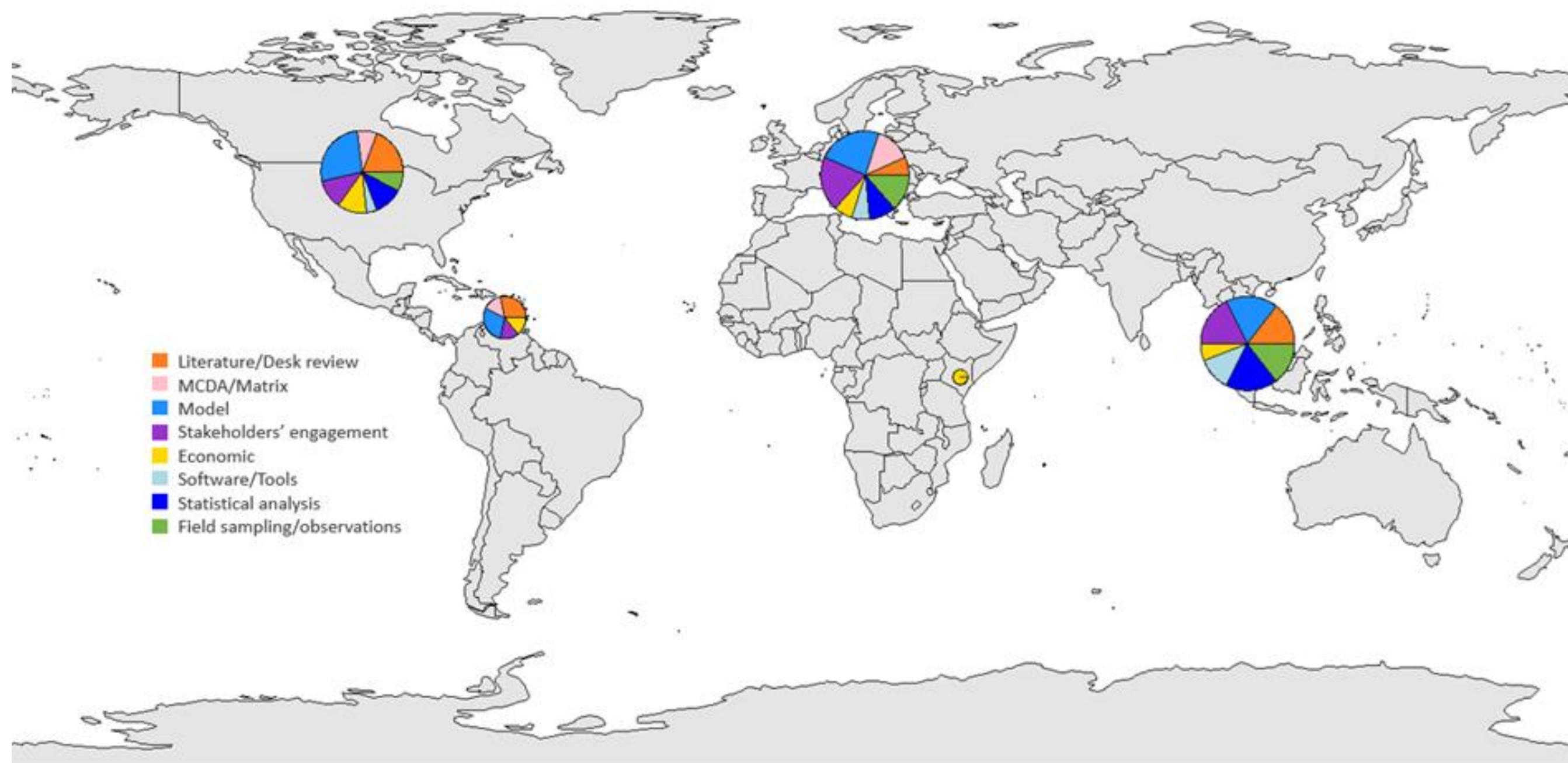


- The **total value generated by NbS is often underestimated** due to limited understanding of both the risk reduction potential and co-benefit generation.
- In particular, **co-benefits are often not considered** when NbS are compared to traditional measures (such as grey infrastructure), leading to underinvestment in NbS.



# Evidence and methods: what NATURANCE did?

Overview and *mapping of methods used to assess the environmental, social, and economic co-benefits of NbS in the scientific literature, examining their potential usability in a wider context.*



Several studies across the world, using a variety of methods applied to different NbS project to assess diverse co-benefits in the context of risk reduction



# Overall results and take home messages

**Evidence confirms the effectiveness of NbS** in reducing climate risks and providing co-benefits such as cultural services, biodiversity, and carbon sequestration.

A range of methods have previously been used to assess the co-benefits of NbS, but **there is no single standardised approach and they are often used in combination**. A lack of data and indicators limits the comparability and scalability of these approaches.

**Standardised, transparent approaches are vital to monetising NbS co-benefits** and thereby supporting greater use of NbS through credibility and comparability.

**Stakeholder engagement and participation of both the private and public sectors are key to showing the true value of NbS co-benefits** and unlocking their financing.

**Consideration of the risks of future climate impacts is necessary** for more accurate valuation of NbS derived co-benefits in the long-term.

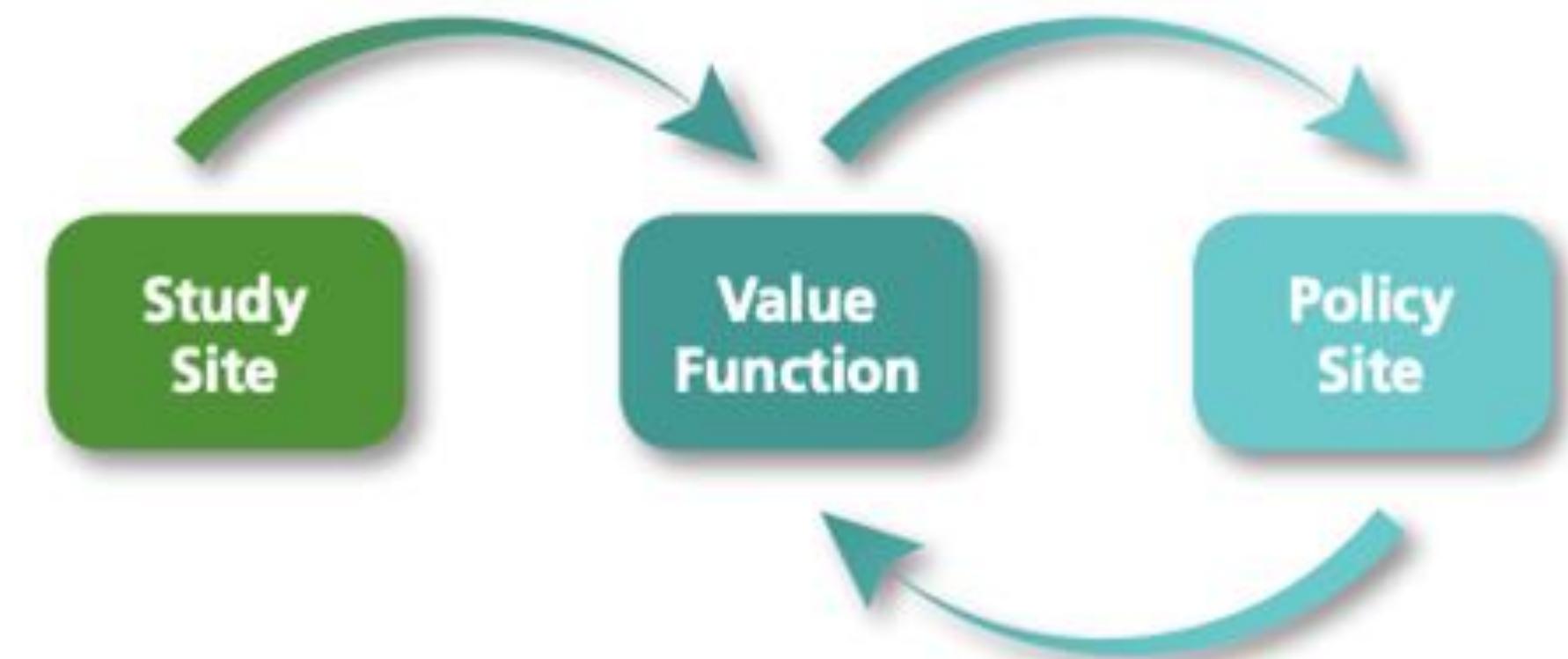


# How can we value NBS co-benefits when there is no primary evidence?

**Collecting local evidence is key to assess the co-benefits of NBS.**

**However...**

**...conducting primary valuation studies is not always possible (cost, expertise, etc.)**



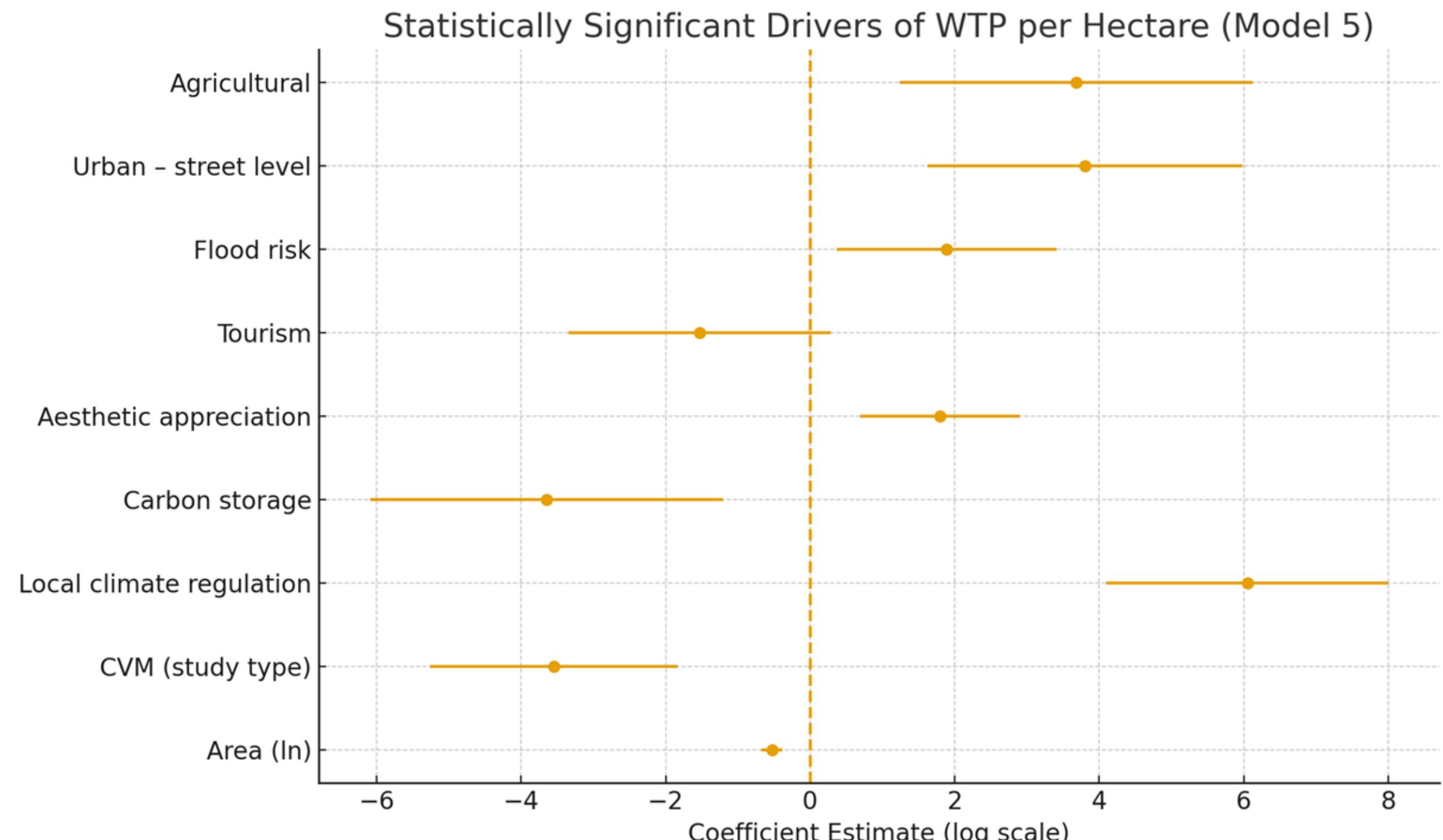
**How can researchers inform policy making when there is no primary evidence?**

$$Value (ha/yr) = \beta_0 + \beta(\text{size}) + \beta(\text{gdp per capita}) + \beta(\text{population density}) \dots$$



# The Meta-analysis Value Transfer Function for co-benefits

- The meta-regression showed that respondents value more short-term co-benefits of NBS.
- The value per hectare decreases as NBS increase in size.
- Urban NBS located in highly populated areas are more valued on average.



The VT function uses the results of the meta-analysis to value co-benefits in policy sites.

Model 5: N = 219 observations, Adjusted R<sup>2</sup> = 0.768



# Application of the value transfer function

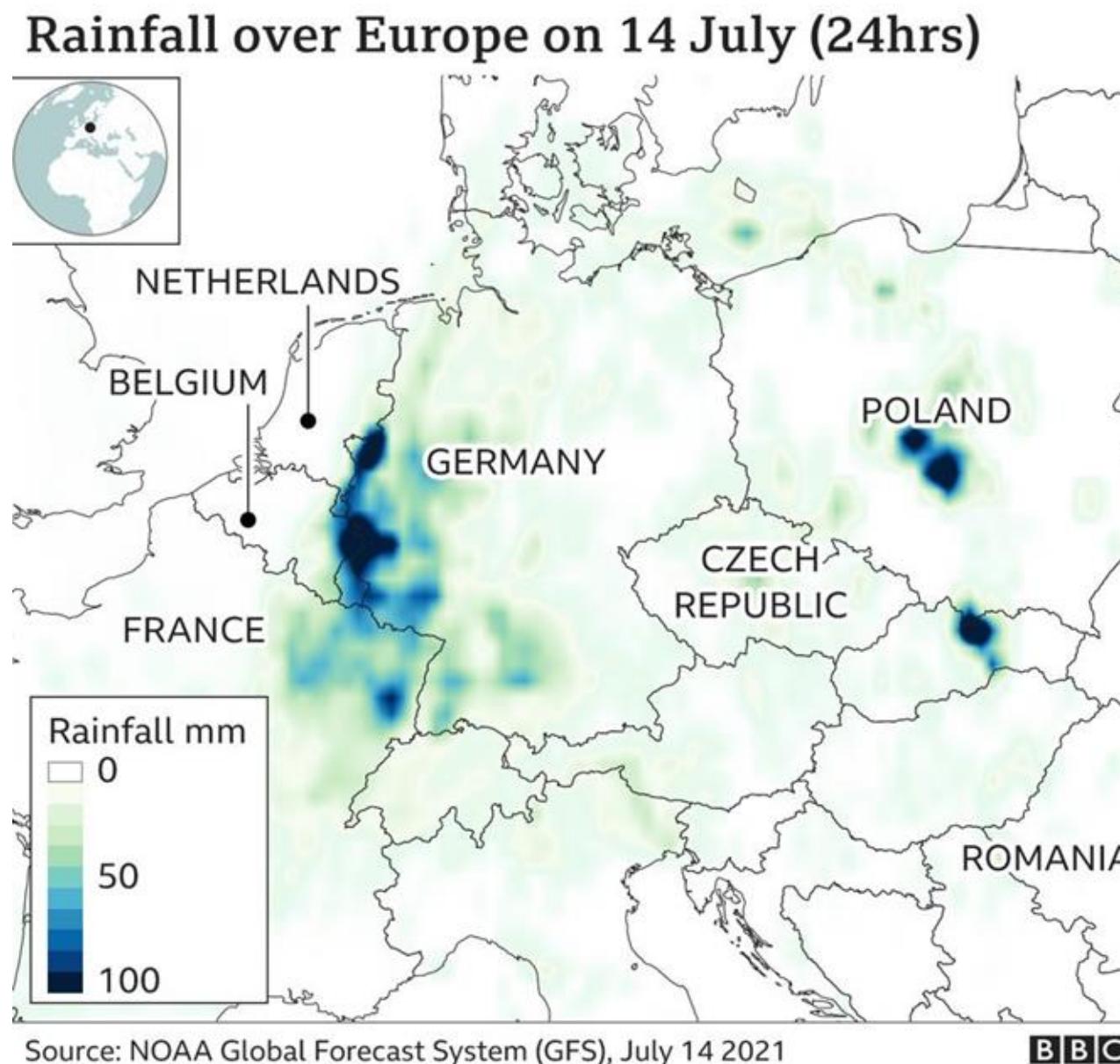
Attribute	Essen's transition from grey to green
Type	Urban
Continent	Europe
Risk addressed	Flooding
Area (ha)	230
Population density	2,715
GDP per capita (USD 2022)	50,070
Type of NBS	Park
Previous land use	Urban (former factory site)
Value per ha per year (USD 2022)	533,870
Total annual value (USD 2022)	122.7 million



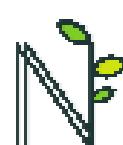
Combine with risk-reduction estimates (EAD) from physical modelling into decision-making tools such as CBA.



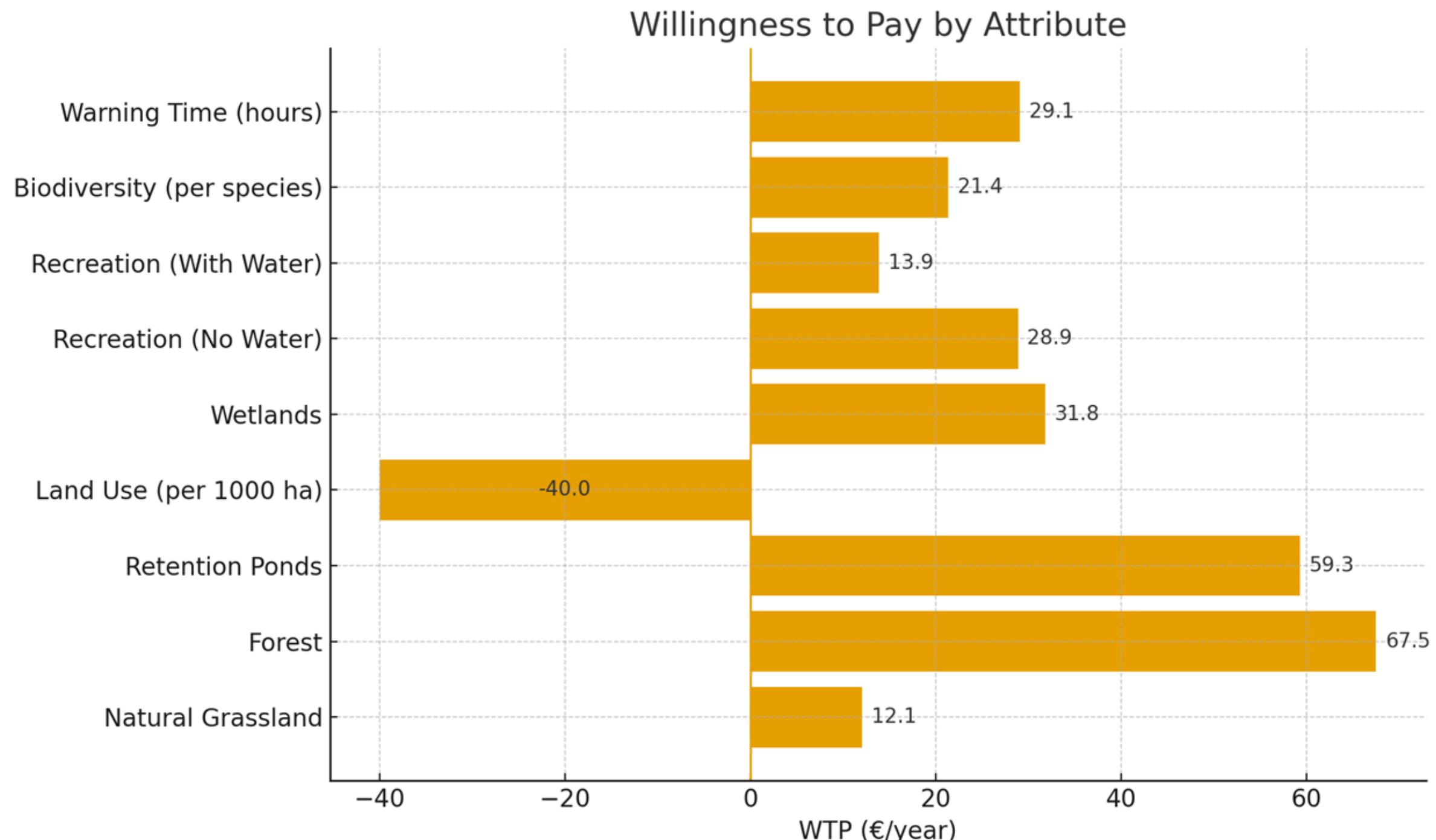
# Case study: The European floods of 2021



Analysis plan: We perform a societal CBA for different NBS scenarios, including risk reduction estimates, co-benefits and insurance analysis.



# Co-benefit assessment survey results

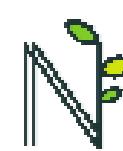
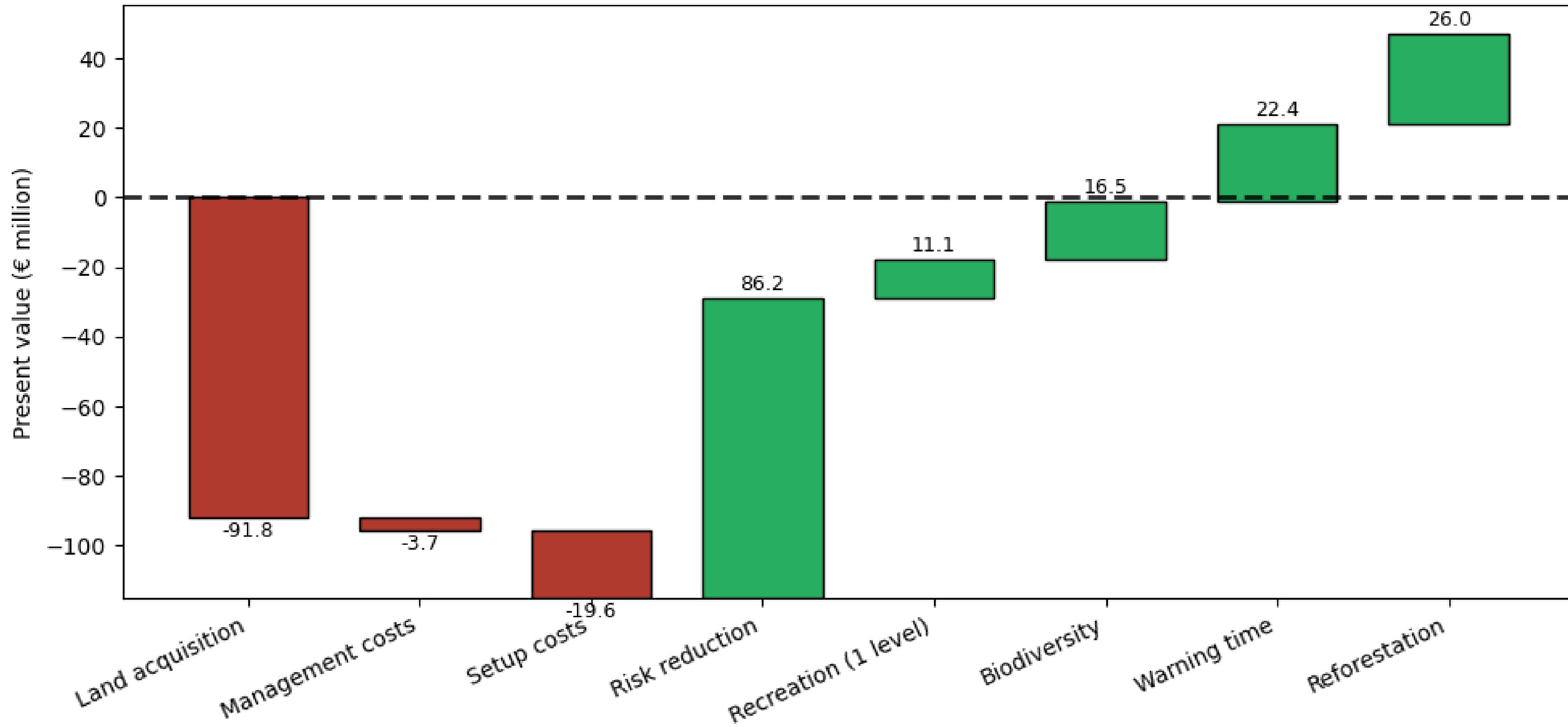


- Clear preferences for reforestation policies, and co-benefits such as recreation or biodiversity.
- Heterogeneous preferences: We find that 33% of our sample has strong disutility from converting agricultural land into NBS.



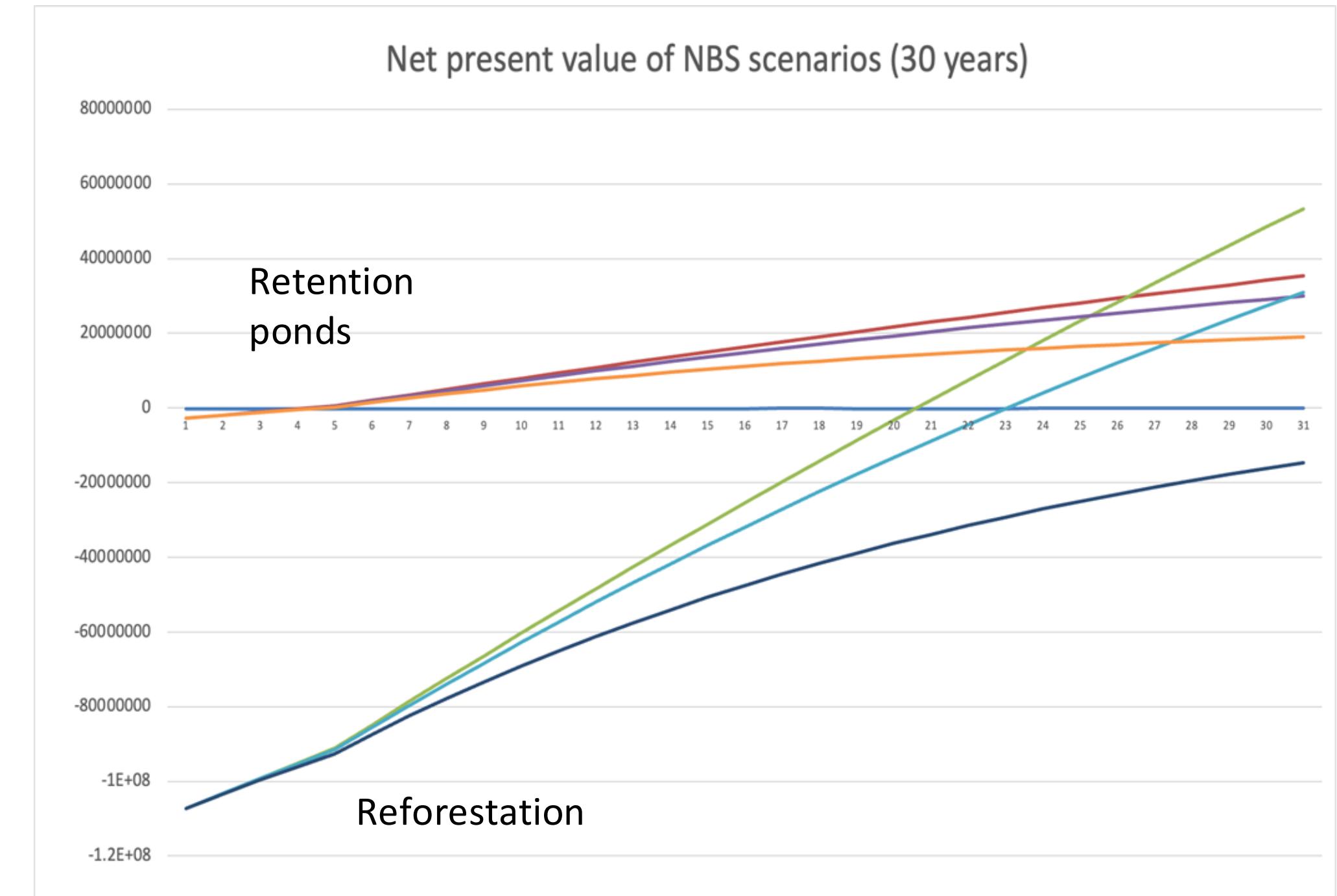
# Cost-benefit Analysis: Results I

Illustration of costs and benefits - NBS scenario, Geul, 2% discount



# Cost-benefit Analysis: Results II

- Co-benefits are key to make an economic case for NBS investment.
- The amount of land that needs to be purchased is crucial for economic feasibility.
- Different approaches that combine agriculture and NBS, could address this challenge.



# Insurance modelling - flood insurance premium results

Premium (mean)	Baseline	Retention ponds	Reforestation
Risk-based	€416	€364	€274
Flat-rate	€110	€100	€58
Risk-based (capped)	€100	€86	€50

## Insurance system impacts who benefits from NbS investment

- For risk-based premiums, only high-risk households benefit
- For flat-rate premiums, everyone benefits equally
- For capped risk-based premiums, low-risk households benefit more



# Insurance modelling - investment returns in river catchment

## Investment-case:

*If competition is restricted under a public-private insurance system, an insurer may invest in NbS proportional to the level of risk-reduction it generates.*

*The insurer's dividend is the reduced annual indemnity payments.*

*The return-on-investment (ROI) assumes the insurer funds half of the NbS investment*

	Baseline	Retention ponds	Reforestation
Yearly dividend	-	€975.000	€5.22mln
Annual ROI*	-	20%	9.5%



# Insurance modelling - coverage gap in a competitive voluntary insurance

	Baseline	Retention ponds	Reforestation
Penetration rate	35%	35%	32%
Unaffordability	15.5%	15.3%	14.5%
Coverage gap (uninsured risk)	€1.78mln	€1.6mln	€893.000

The lower coverage gap reduces flood compensation required by the government



# Recommendations for financing

- The societal CBA shows that NBS are economically viable when the co-benefits are taken into account.
- Large land use changes not only can limit policy support, but considerably increase the costs, jeopardizing the financial viability of NBS.
- Integrate NBS in spatially detailed catastrophe models can provide actionable insights into risk reduction, premiums and insurability.
- Collaborations between the public and private sectors are likely needed to mainstream investment in NBS, potentially through PPPs.
- Stimulating private finance for NBS is dependent on the type of insurance system. In the case of a public-private insurance system, there is a business case for insurers to invest in NBS for risk reduction.





NATURANCE

THANKS

4 FEBRUARY 2026

09:30-11:00 *From Risk to Resilience: Insurance Solutions*

11:00-11:30  Break

11:30-13:00 *Capital for Nature: Investment Solutions*

13:00-14:30  Lunch

14:30-16:00 *Communities Connect: Advancing NbS through Insurance and Investment*

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16:30-18:00 **QUANTIFYING THE COSTS AND BENEFITS OF  
NbS TO INFORM DECISION-MAKING**



**Neil GUNN**  
*Willis Research Network*



# Nature Based Solutions Assessing the Benefits Relating them to Insurance

Neil Gunn

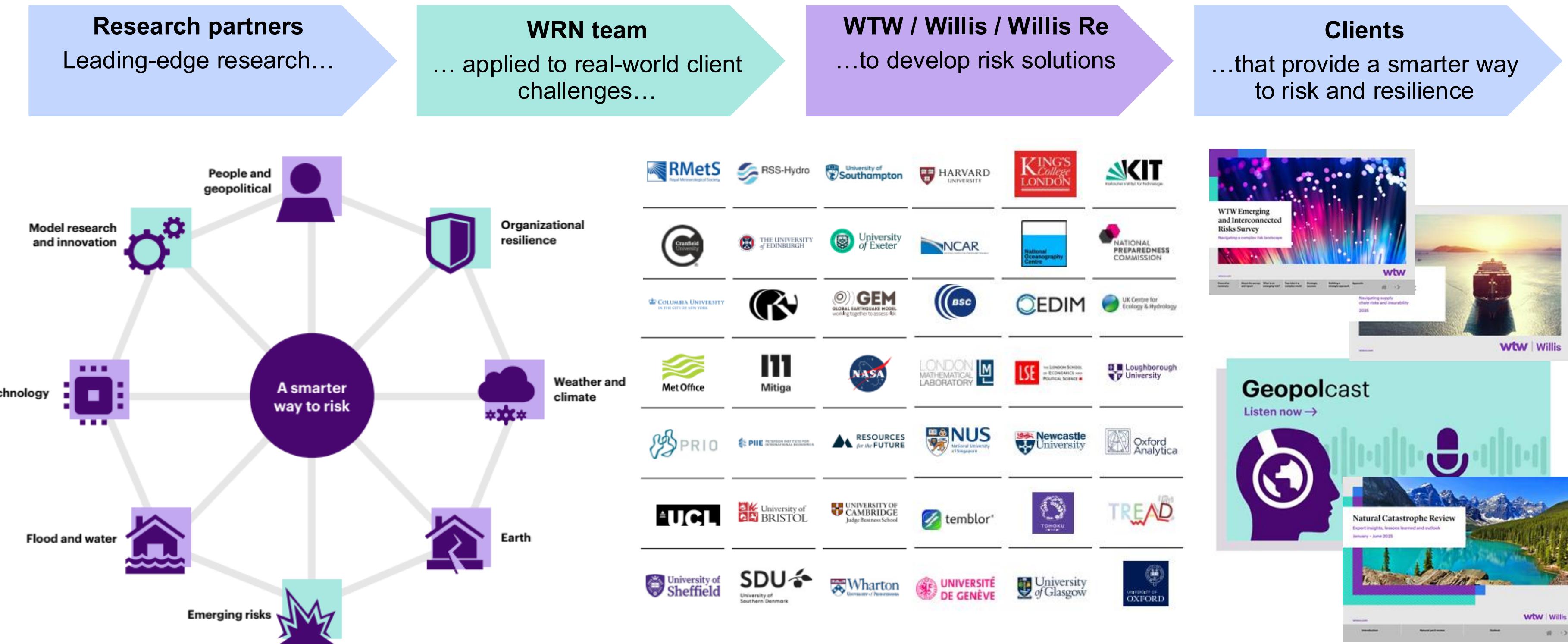
Head of Flood and Water Management Research  
Willis Research Network

January 2026



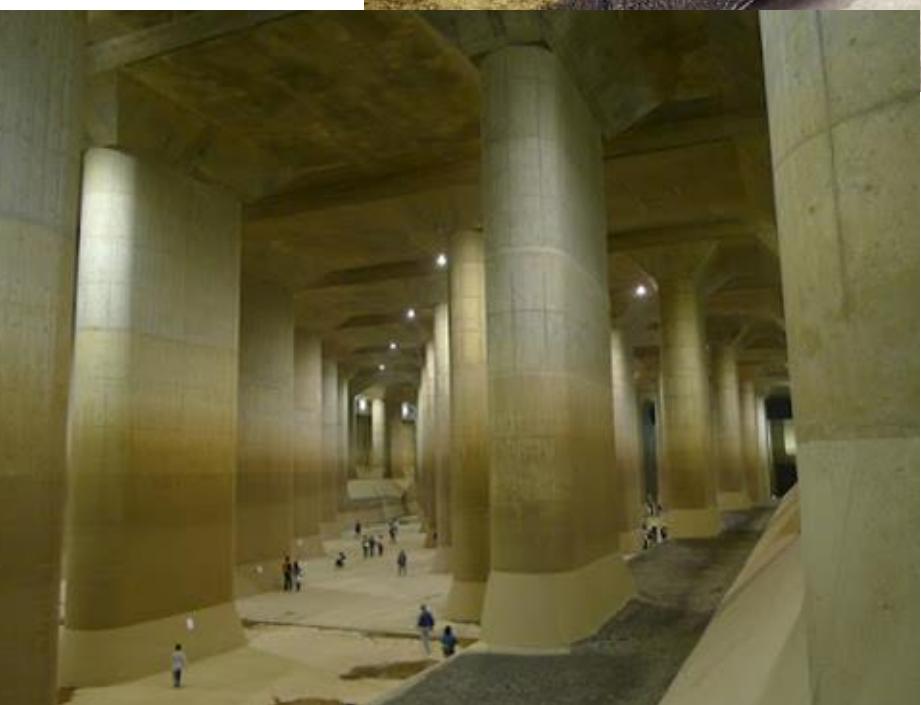
# Willis Research Network - Operating Model

## Exploring uncertainty, risk and opportunity in partnership



# Flood Management Snapshot

Traditional 'Grey' Defences  
Conveyance, Walls, Storage  
All worsen risk somewhere else

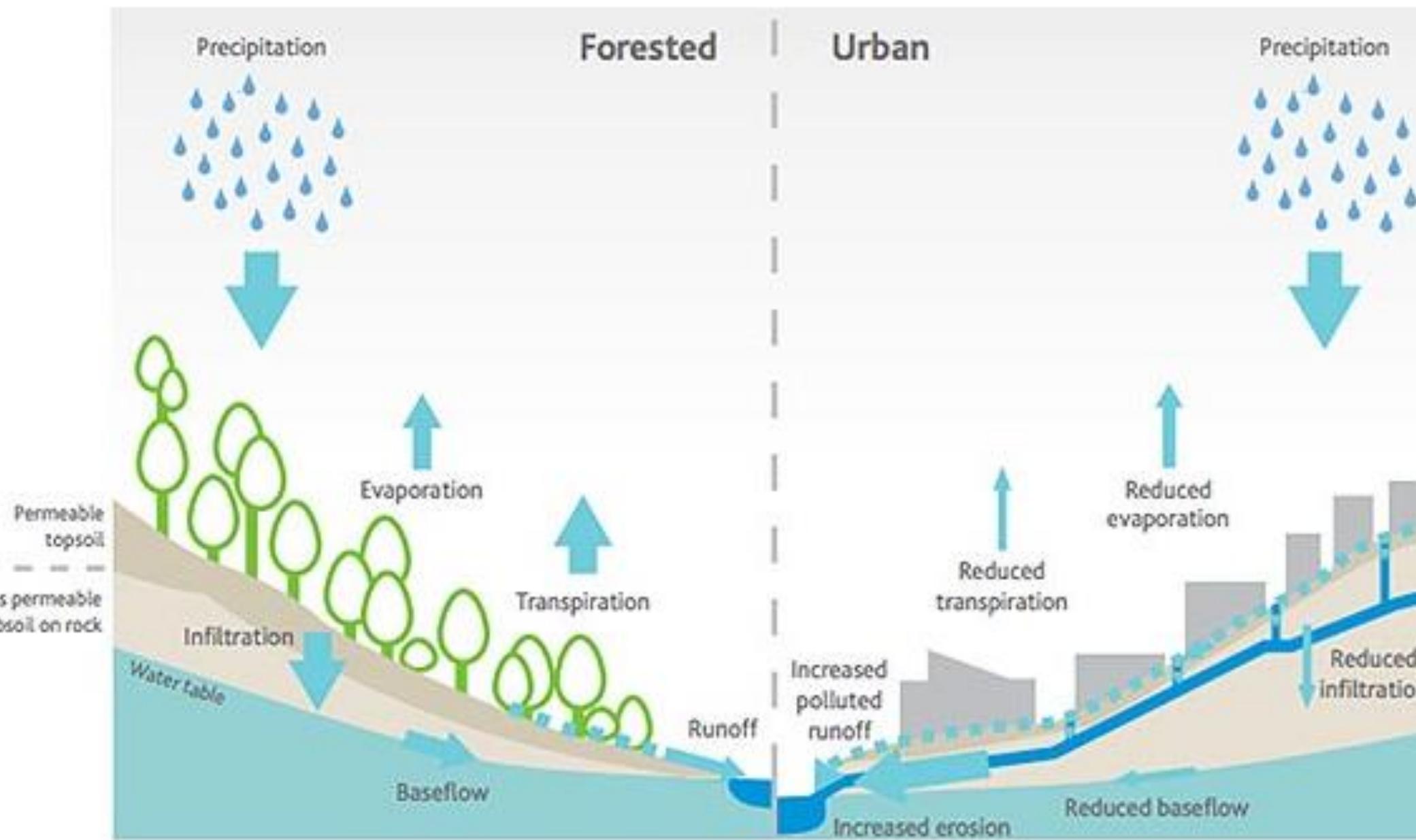


# What are NbS?

Actions that protect, sustainably manage, and restore ecosystems to address societal challenges like climate change, water security, and disaster risk, providing simultaneous benefits for people, nature, and the economy through cost-effective, locally adapted interventions that leverage natural processes.

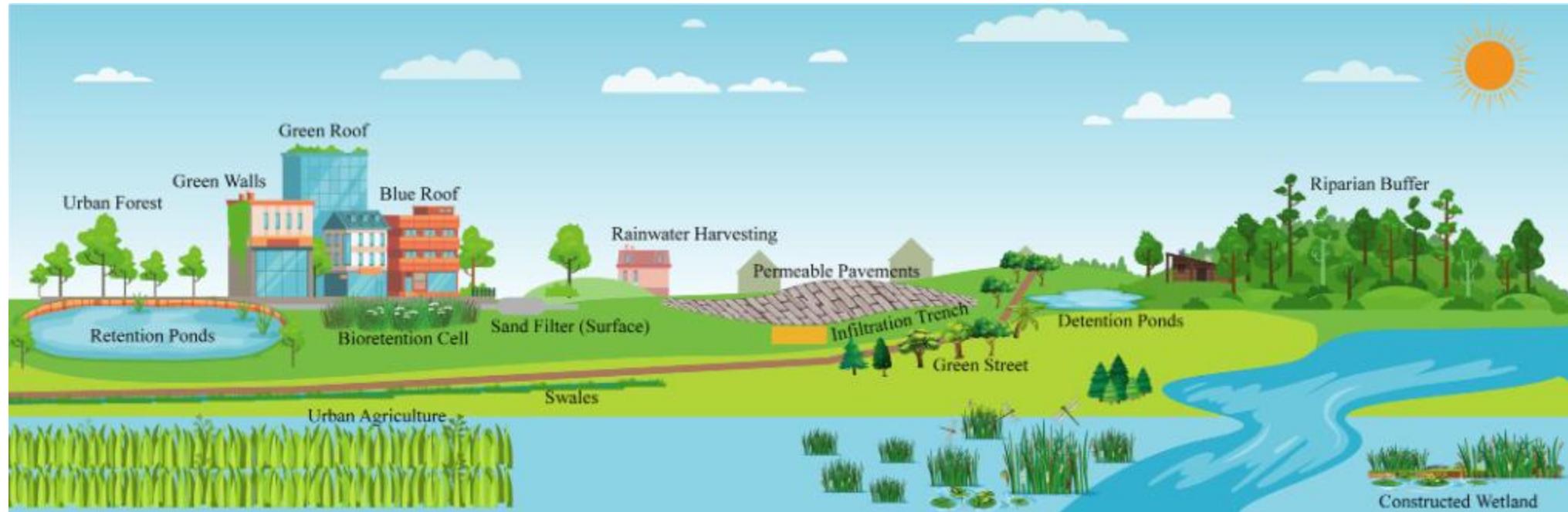
**Often they have co benefits.**

- Carbon sequestration
- Health and well being
- Drought management
- Enhanced water quality
- Biodiversity and habitat creation
- Cost effective
- Low carbon





# Urban NbS



Many different techniques and flavours

Blended with hard engineering

Multi use city spaces

## Blue Infrastructure

- Retention ponds
- Blue roofs
- Constructed wetlands
- (Wet swales)

## Blue-Green Infrastructure

- Bioswales

## Green Infrastructure

- Green roofs
- Green streets
- Urban agriculture
- Rain gardens
- Urban forest
- Green walls
- Riparian buffer
- (Dry swales)

## Hybrid (Blue-Gray)

- Rainwater harvesting
- Infiltration trench
- Sand filters (surface)

## Hybrid (Blue-Green-Gray)

- Detention ponds

## Hybrid (Green- Gray)

- Permeable pavements

## Gray Infrastructure

Traditional Stormwater Management Systems (Combined Sewerage and Separated)

# Measuring the benefits

The bad news



# Measuring the benefits II

Now the good news

A gold standard for science is emerging

A combination of modelling and measurement

which means this will show through in empirical design manuals and lead to enhanced risk understanding

*Journal of Flood Risk Management*

WILEY

CIWEM Chartered Institution of Water and Environmental Management Journal of Flood Risk Management

CRITICAL REVIEW OPEN ACCESS

## Hydrological Analysis and Impacts of Natural Flood Management Strategies: A Systematic Review

Mehdi Bagheri-Gavkosh<sup>1</sup>  | Diego Panici<sup>1</sup>  | Alan Puttock<sup>1</sup>  | Tom Dauben<sup>2</sup> | Richard E. Brazier<sup>1</sup>

<sup>1</sup>Centre for Resilience in Environment, Water and Waste (CREWW), Faculty of Environment, Science and Economy, University of Exeter, Exeter, Devon, UK | <sup>2</sup>Environment Agency, Exeter, Devon, UK

Correspondence: Mehdi Bagheri-Gavkosh ([m.b.gavkosh@exeter.ac.uk](mailto:m.b.gavkosh@exeter.ac.uk))

Received: 15 November 2024 | Revised: 12 July 2025 | Accepted: 19 July 2025

Funding: This study is part of a PhD project, within the Devon Resilience Innovation Project, funded by the Department for Environment, Food & Rural Affairs (DEFRA) and administered through the Environment Agency as part of the Flood and Coastal Resilience Innovation Programme (FCRIP). Project number is DEV-006.

Keywords: flood risk management | natural flood management | nature-based solutions | quantitative hydrological analysis | systematic review

### ABSTRACT

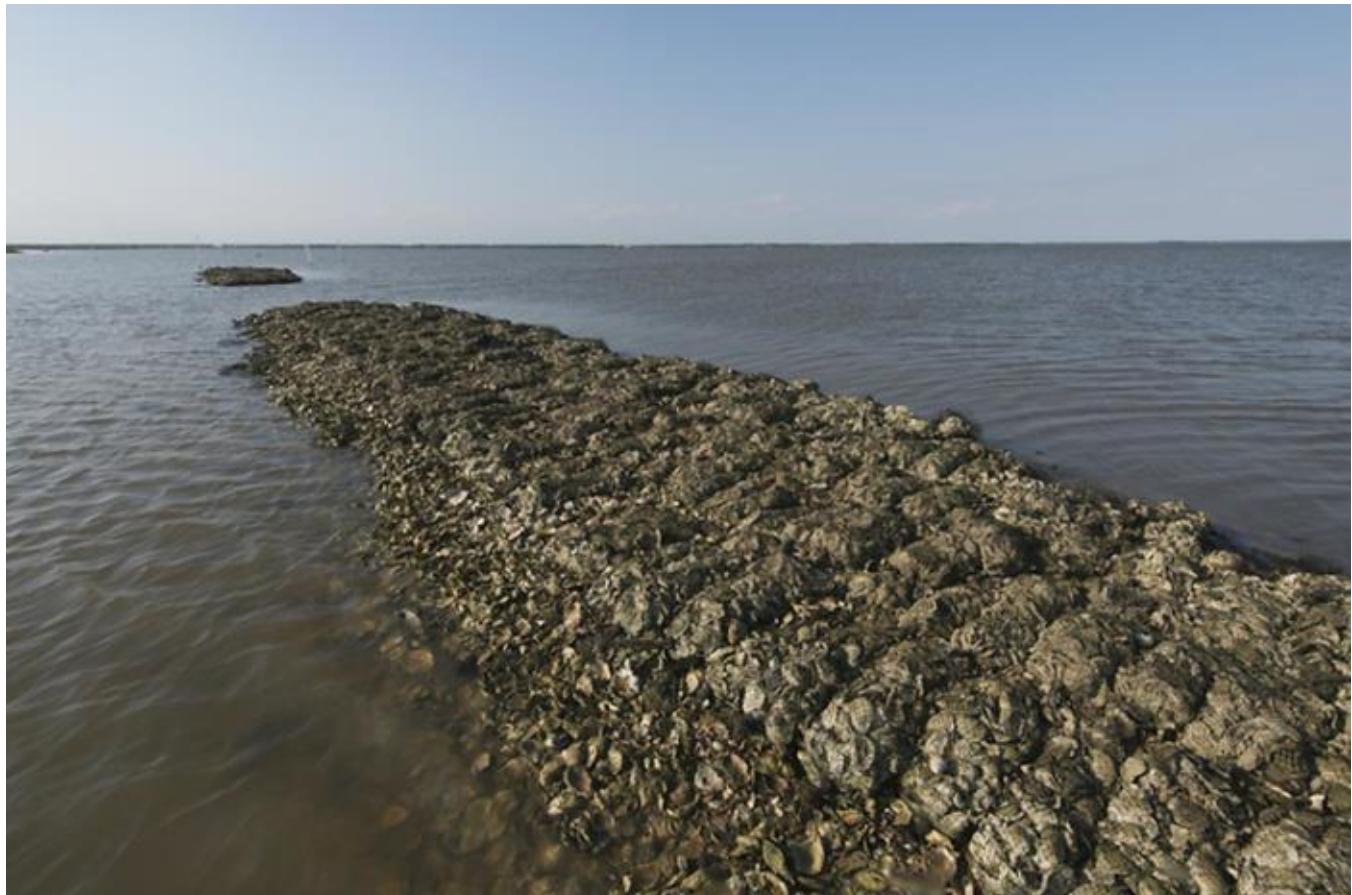
Natural flood management strategies (NFM) encompass a variety of measures implemented across catchments to mitigate flood risks while providing multiple benefits. In recent years, NFM have gained increasing attention from researchers and policy-makers. However, despite the growing body of research, there remains a lack of a critical review that quantitatively synthesises the reported performance of different NFM by analysing their effects on key hydrological parameters. To address this gap, we conducted a systematic review of NFM based on 145 peer-reviewed papers covering 216 case studies across 37 countries, following the preferred reporting items for systematic reviews and meta-analyses (PRISMA) guidelines. Our analysis moves from a descriptive overview of the evidence base to a novel, quantitative investigation of three critical themes: the characteristics of studied NFM schemes, the methodologies used for their assessment, and their quantitative hydrological performance and its influencing factors. Results indicate that 31% of the studies identified flood peak reduction as the most commonly targeted hydrological objective. A significant positive correlation was found between intervention diversity and intensity (Spearman's  $\rho=0.53$ ). Furthermore, our methodological analysis reveals a critical trade-off in the literature, with empirical monitoring typically used in small catchments over shorter durations, while modelling is used to assess a greater diversity of interventions at larger scales, with truly combined approaches being notably rare (11%). Notably, river and floodplain management (RFM) demonstrated higher effectiveness, achieving an average flood peak reduction of 30%, particularly in larger catchments. Bearing the often multi-faceted aims of NFM in mind, this paper provides key suggestions for future research.

# Measuring the benefits III

## More Good News

Coastal and Urban flood managers are way further ahead ...

....What about insurers



# What about insurance and defences



## Are defences represented in cat models?

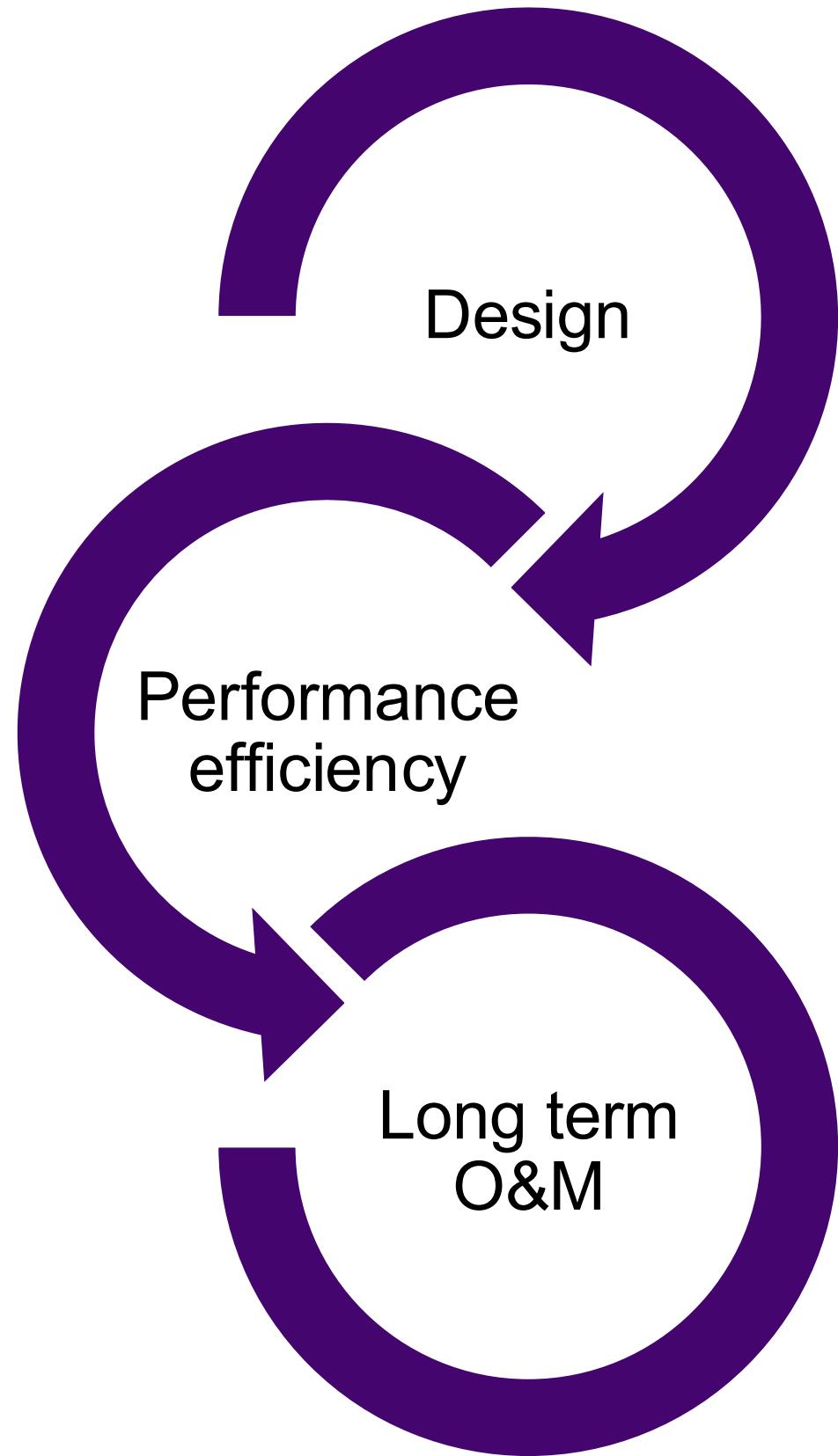
- 😊 Tide and surge
- 😊 Fluvial levees
- 😐 Fluvial conveyance and storage. Major rivers more than minor
- 😐 Pluvial, very complex and incomplete
- 😢 NbS

## Why

- Variable size of benefit
- Complexity
- Completeness of data

# Whats Required

Overcome risk and uncertainty



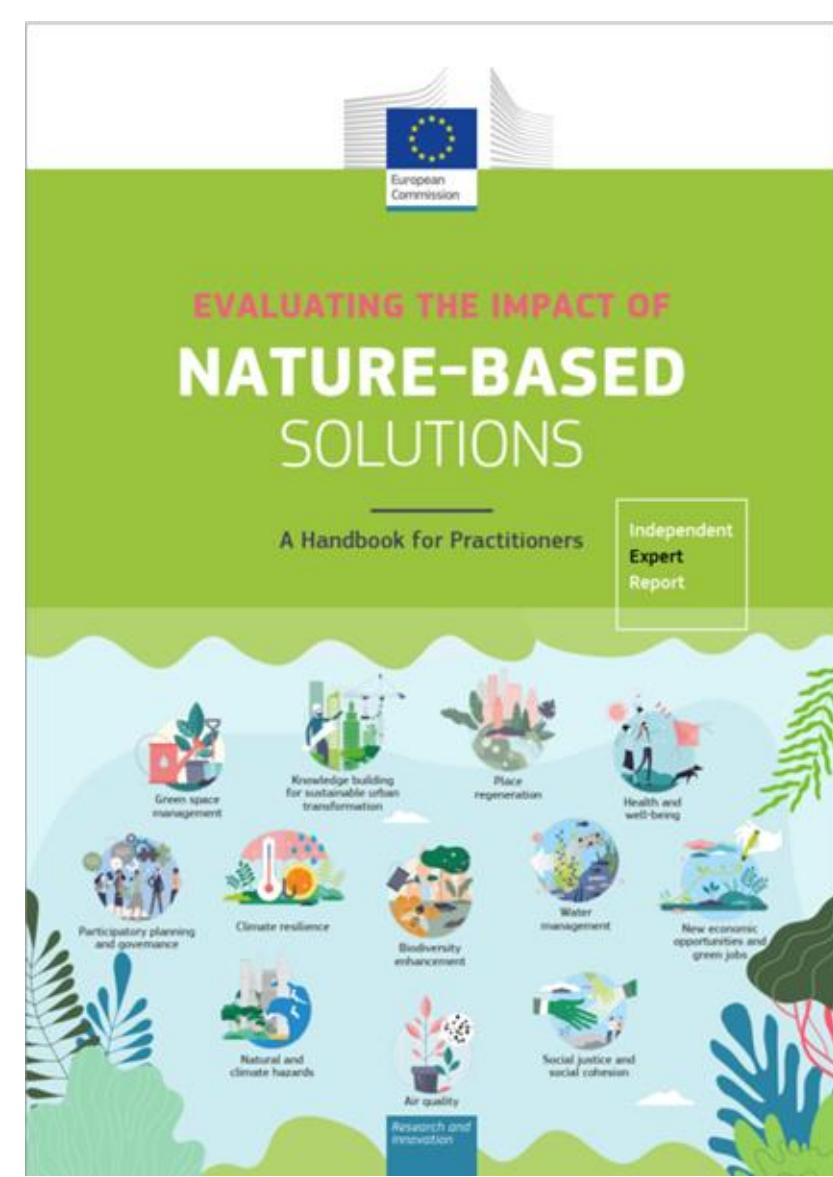
# Useful References



The natural flood management manual



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<https://www.agin.org.au/resources>



<https://www.naturanceproject.eu/>



**Nature markets:**  
A framework for scaling up private investment in nature recovery and sustainable farming

March 2023

Of course

4 FEBRUARY 2026

09:30  
11:00 *From Risk to Resilience: Insurance Solutions*

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18:00 **QUANTIFYING THE COSTS AND BENEFITS OF  
NbS TO INFORM DECISION-MAKING**



**Vylon Ooms**  
*Dutch Association of Insurers*



# Insurance and Climate Adaptation



Naturance

• 4-2-2026

# Introduction

- Policy Advisor on Climate Adaptation
- Project leader on flood insurance



VERBOND VAN VERZEKERAARS



VRIJE  
UNIVERSITEIT  
AMSTERDAM

FACULTEIT DER  
BÈTAWETENSCHAPPEN



IVM Instituut voor  
Milieuvaagstukken

- External PhD Candidate

# Members Dutch Association of Insurers



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sazas  
UW VERZUIMSPECIALIST

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Nassau verzekeringen

de vereende JUNIS

Mutual Insurance Association  
rhion

RSA MS Amlin

Allianz Global Assistance

Donatus  
Dé kerken- en monumentenverzekeraar

Monuta Uitvaartzorg en -verzekeringen

unigarant  
verzekeringen

midglas glasverzekeraar

movir  
Loyalis

de Goudse  
verzekeringen

ONVZ zorgverzekeraar

CNA  
HARDY

elipsLife  
your insurance

AnsvaR idéa  
VERZEKERINGEN  
een bewuste keuze

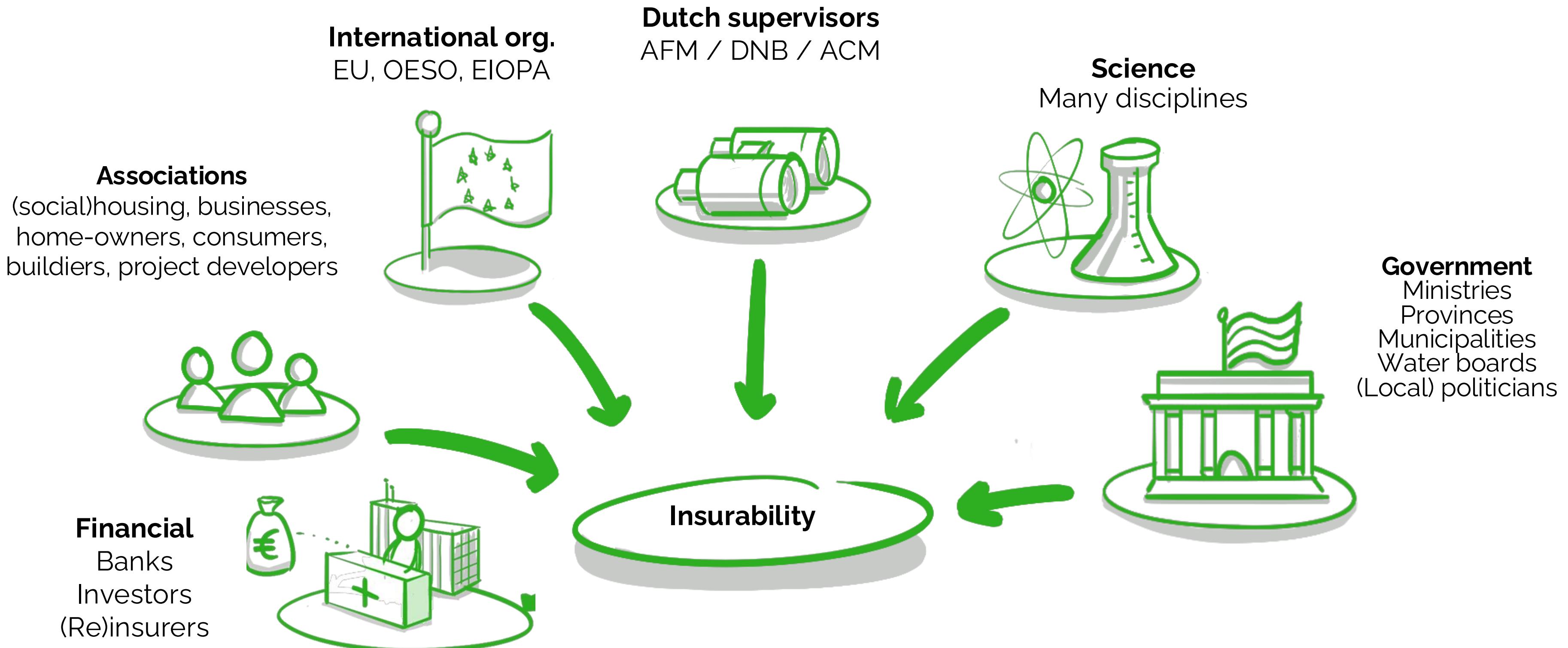
Nateus VERZEKERINGEN  
Genworth  
Financial

ARAG  
RECHTSBLIJSTAND

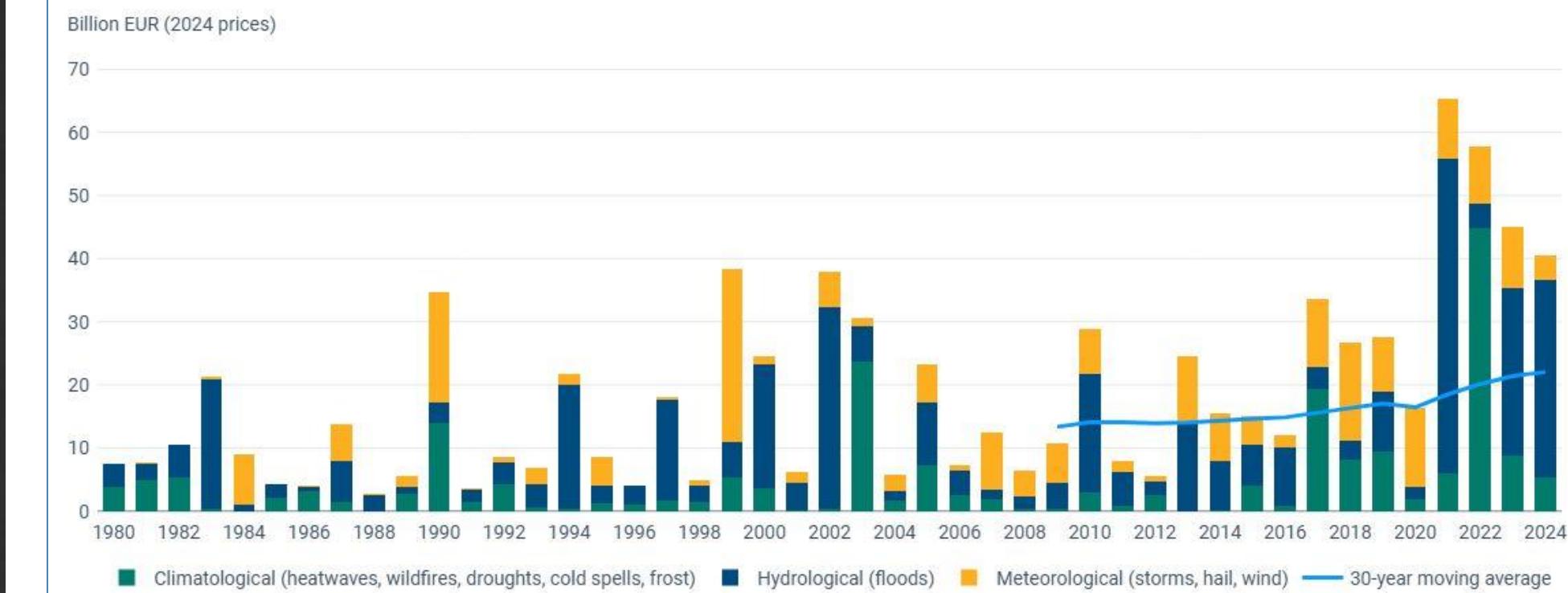
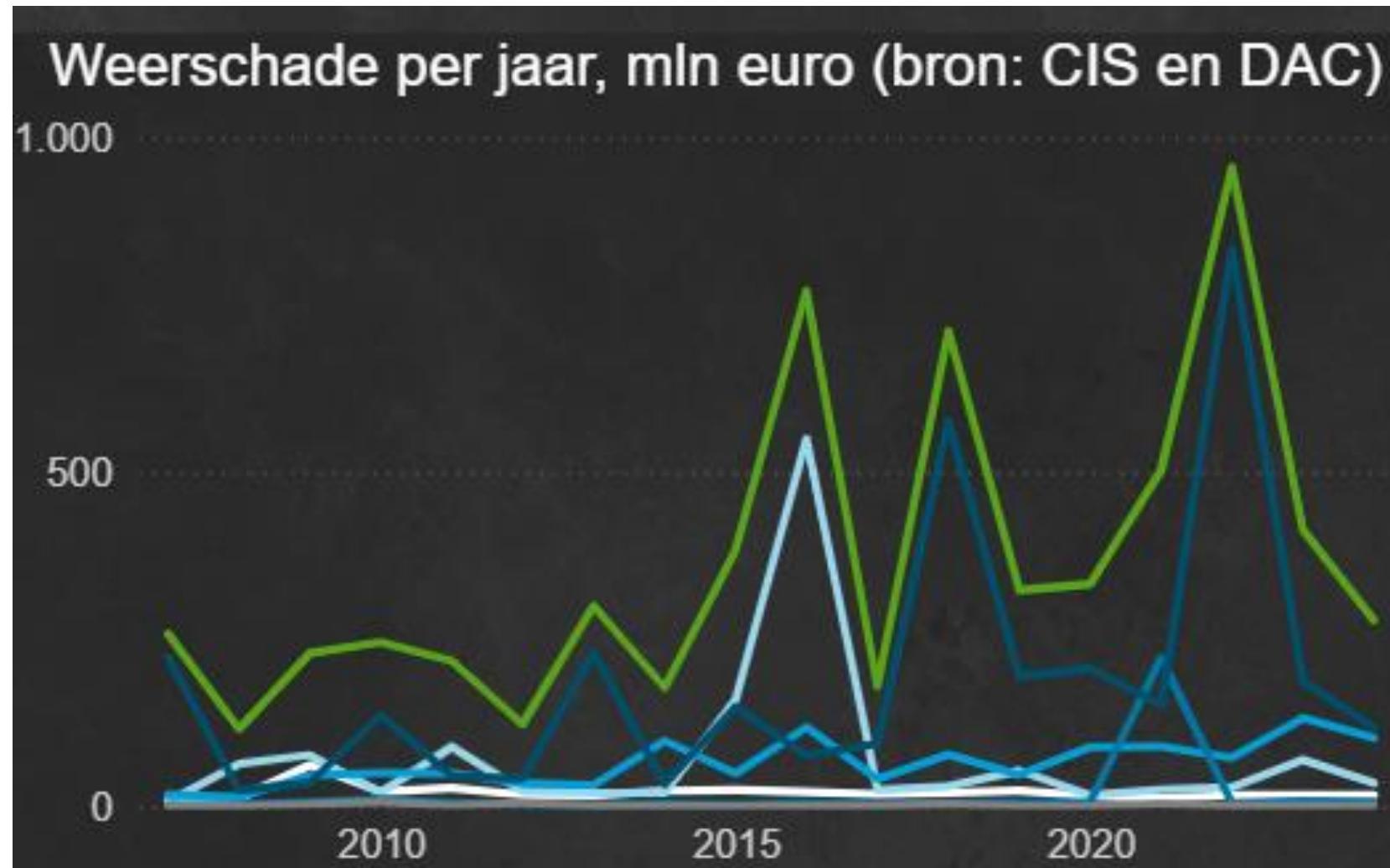
Interpolis

Reaal De Onderlinge van 1719

# Attention to climate risks and insurability in the Netherlands



# Climate Damage Monitor – impact is observable



Source: Dutch Association of Insurers

Source: European Environment Agency

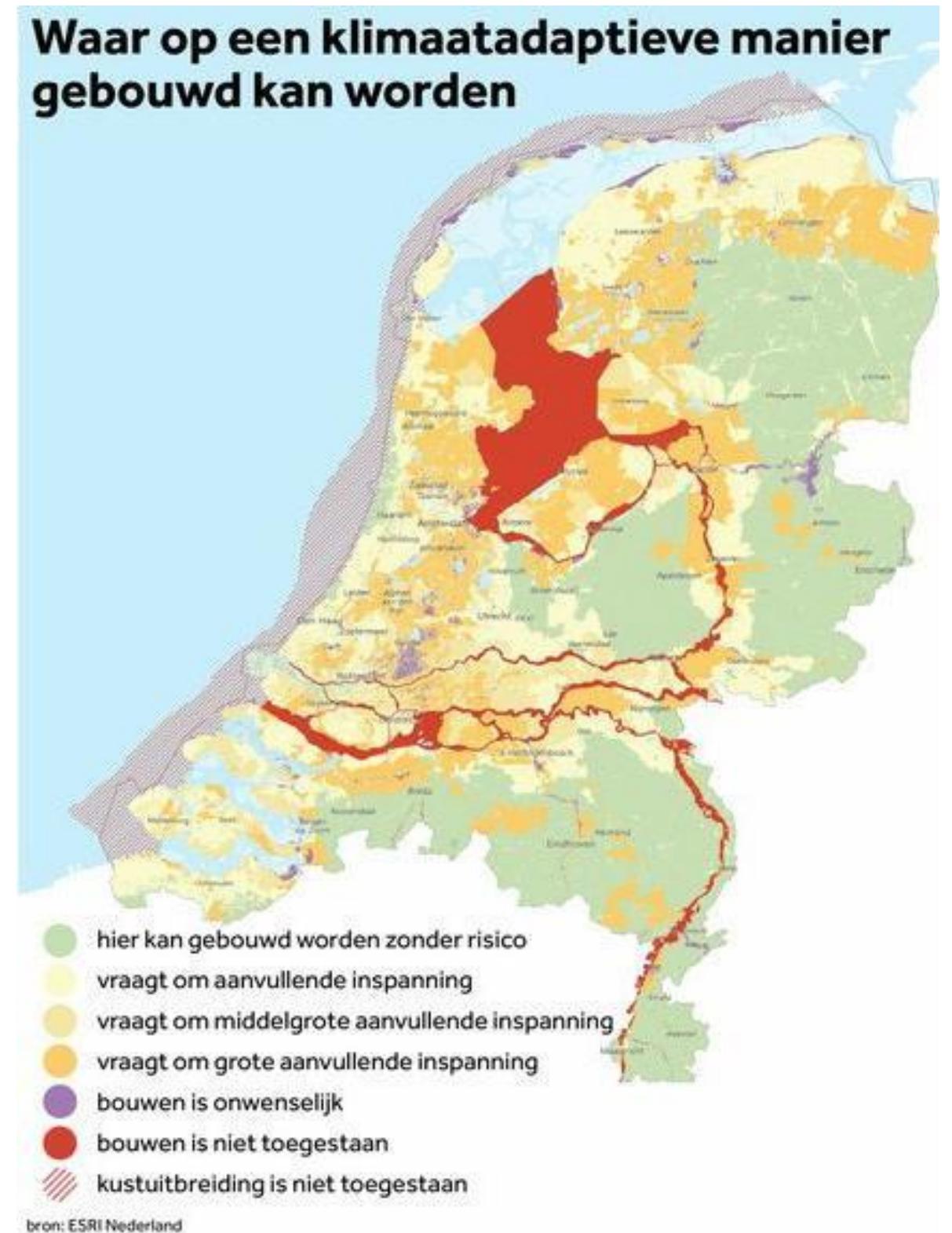
# Recent examples of impact in the Netherlands



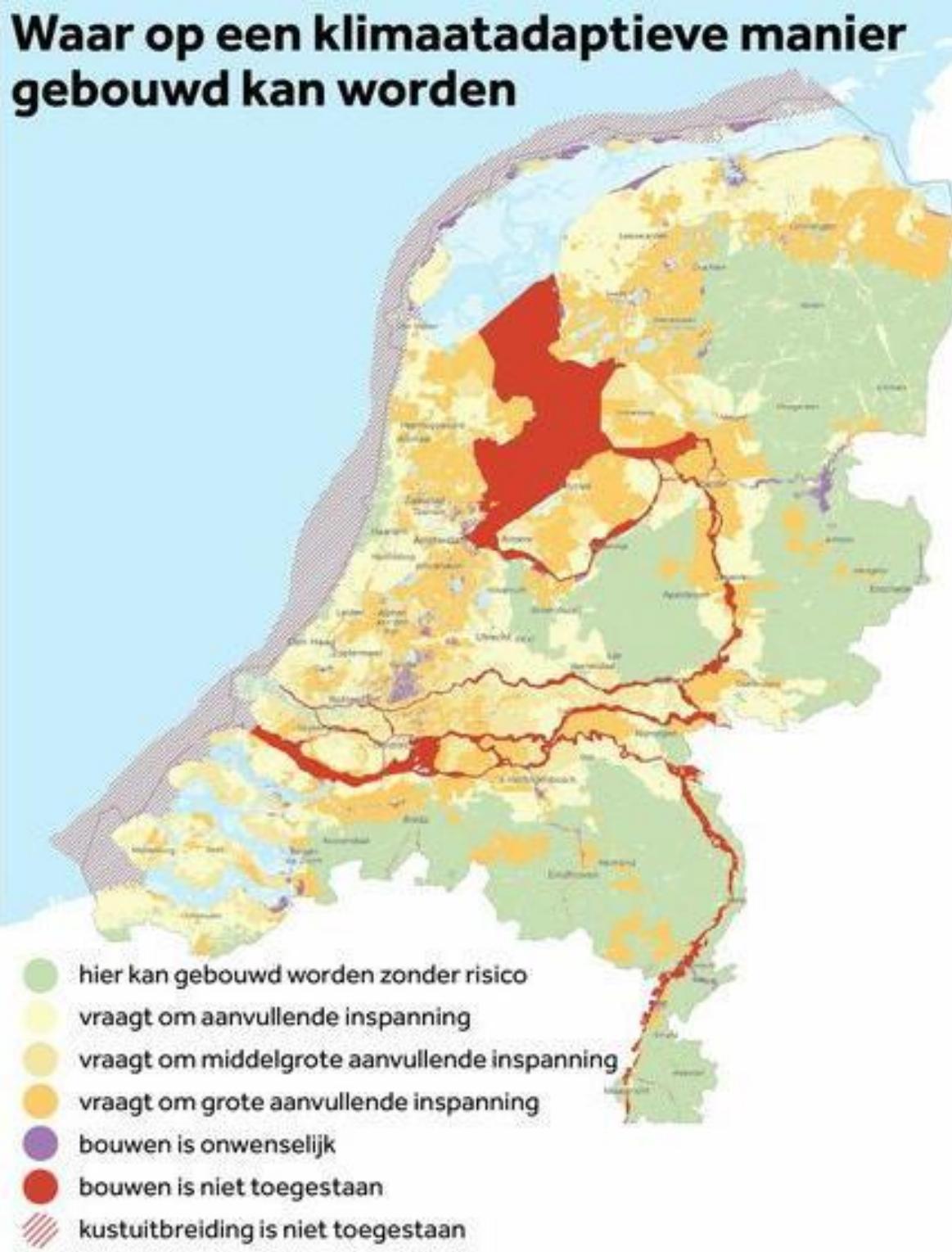
Bron: Waterforum

# Where to build in the Netherlands

**Where:**



# How to build in the Netherlands



**Where:**

**How:**



# Amsterdam Weerproof and insured heavy rain damage



Amsterdam  
**WEERPROOF**

Source: Amsterdam Weerproof

# Assessing effects of nature-based and other municipal adaptation measures on insured heavy rain damages



\*



- Difference-in-difference method to compare both neighborhoods on damage
- Using heavy rain damage data of 95% of Dutch insurers
- After municipal nature based and other adaptation measures were implemented, significantly less heavy rain damage in neighborhood with measures



Source: Ooms, V., Endendijk, T., Aerts, J. C. J. H., Botzen, W. J. W., and Robinson, P. J.: Assessing effects of nature-based and other municipal adaptation measures on insured heavy rain damages.

\* Pictures serve as examples

# Extra costs per newly built house for “water robust measures”

- 400 euro for small adjustments
- Up to 7700 euro for areas where larger adjustments have to be made
- 11.800 euro for areas where you do not really want to build

Tabel 2.4 Aantal geraakte woningen en gemiddelde extra kosten (afgerond) per woning uit de sturingskaart ‘Blootstelling wateroverlast en overstromingen’ (per woningtype)

	Ja, Mits kleine opgave	Ja, Mits grote opgave	Nee, Tenzij
Eengezinswoning	60.319	33.076	663
Extra kosten per woning	€2.700	€7.700	€11.800
Meergezinswoning	158.182	63.655	1.376
Extra kosten per woning	€400	€1.500	€1.800
Woontype onbekend	87.512	125.187	815
Extra kosten per woning	€1.200	€3.500	€5.100
Totale kosten (miljoenen €)	325	785	15

Bron: EIB

# Exposure: unembanked areas



Source: Rijkswaterstaat

# Question:

Insurance is a solidarity-based product.

However, is living in a high risk unembanked area according to solidarity principles if you have damage time and again?



# (Potential) roles of insurers in climate adaptation

## Insurability:



## Information provision and early warning:

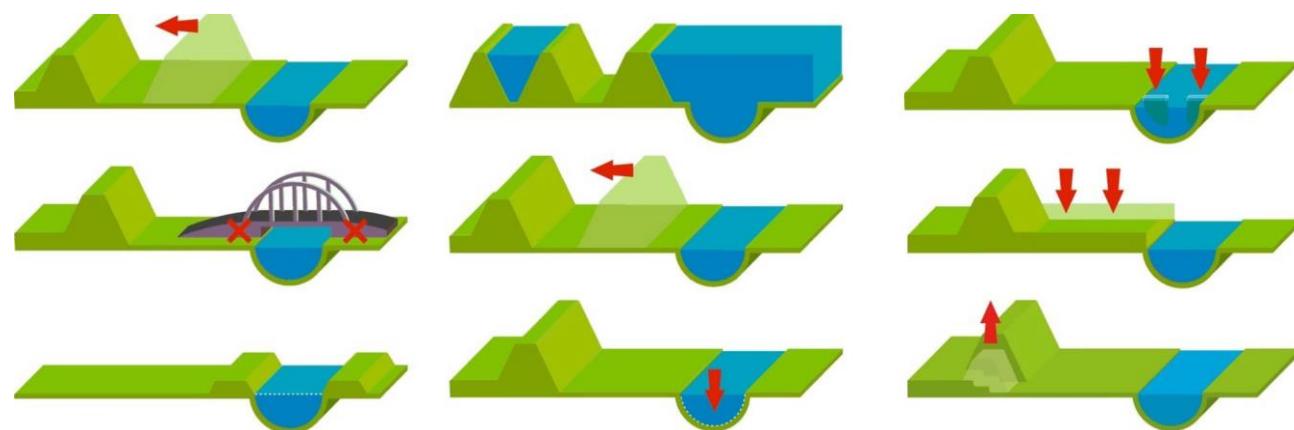


Source: KNMI



Source: Stichting CAS

## Investment in climate adaptation:



Source: Rijkswaterstaat

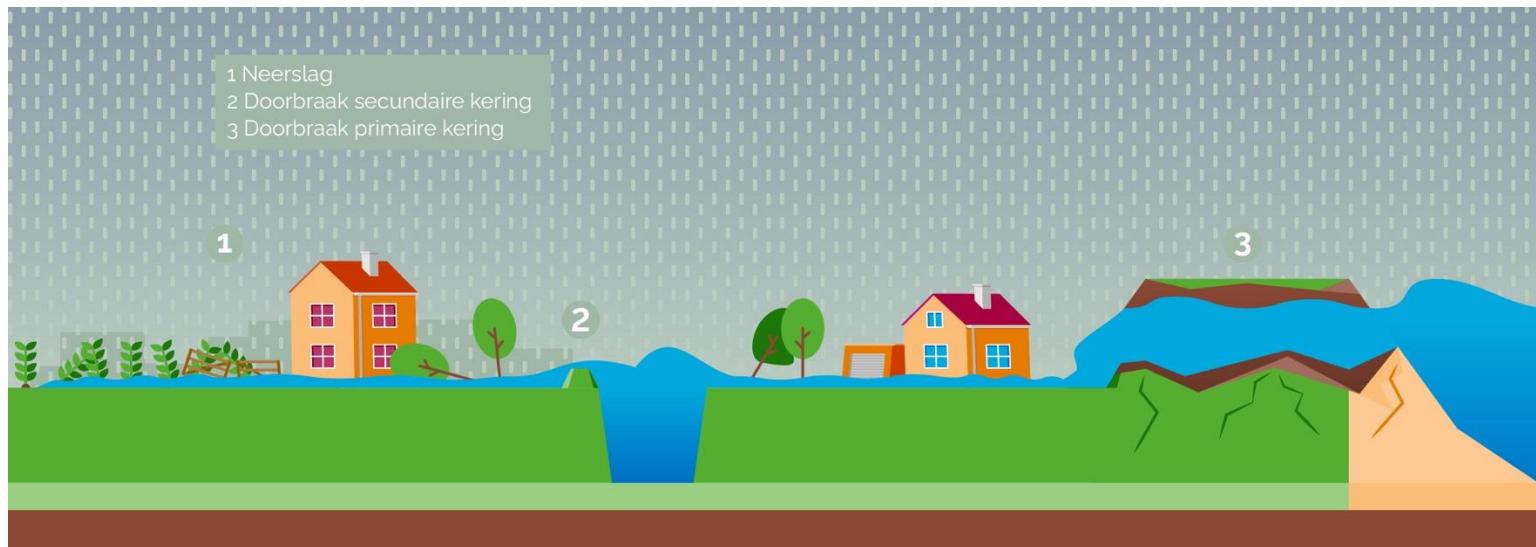
## Build Back Better:



Source: FloodRe

# (Potential) roles of insurers in climate adaptation

## Insurability:



## Information provision and early warning:

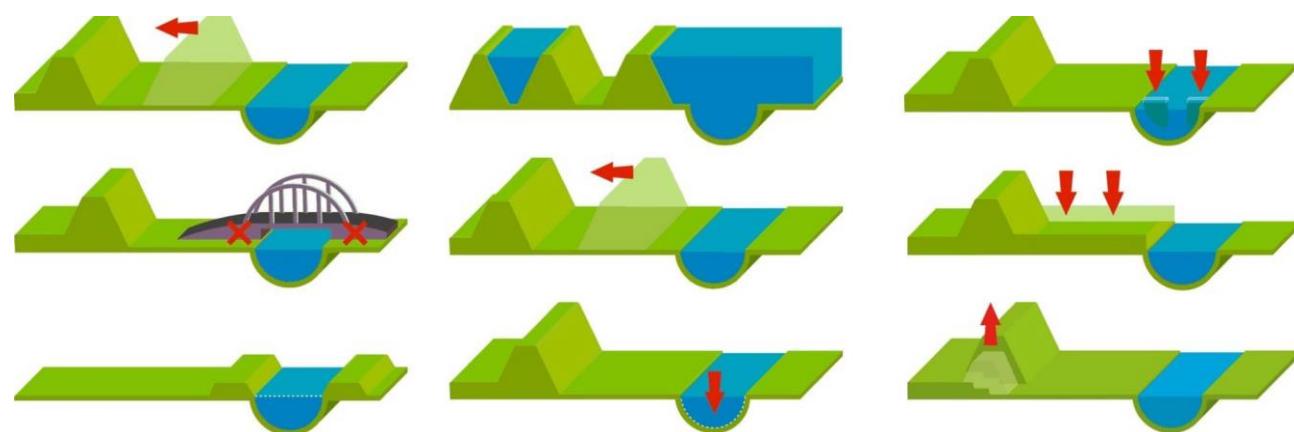


Source: KNMI



Source: Stichting CAS

## Investment in climate adaptation:



Source: Rijkswaterstaat

## Build Back Better:



Source: FloodRe



## Mortgages:

# Examples climate adaptation efforts insurers

## 1. Incentivicing greening gardens



**Trotse partner van het NK Tegelwippen**

## 2. Green roofs and premium discount



Verzekeringen

Inspiratie & veiligheid

Schade

Klantenservice

**Krijg ik extra voordeel als ik klant ben van Interpolis?**

Je ontvangt niet automatisch korting op je woonhuisverzekering als je eer  
groen dak van Interpolis hebt. Als je de Veiligheidsmeter invult kan de korting oplopen tot 7% op je woonhuisverzekering. Dat is afhankelijk van de antwoorden die je geeft.

“Klimaatadaptieve maatregelen via de hypotheek? Centraal Beheer maakt het mogelijk.”

## Uitbreiding van het Groen Leningdeel

Bij het Groen Leningdeel ↗ krijgt een klant van Centraal Beheer een rentekorting van 0,8% op een bedrag tot 25.000 euro. Eind september zijn de mogelijkheden van het Groen Leningdeel verder uitgebreid. Hiermee kan men nu, naast energiebesparende, ook klimaatadaptieve maatregelen via de hypotheek met korting realiseren.

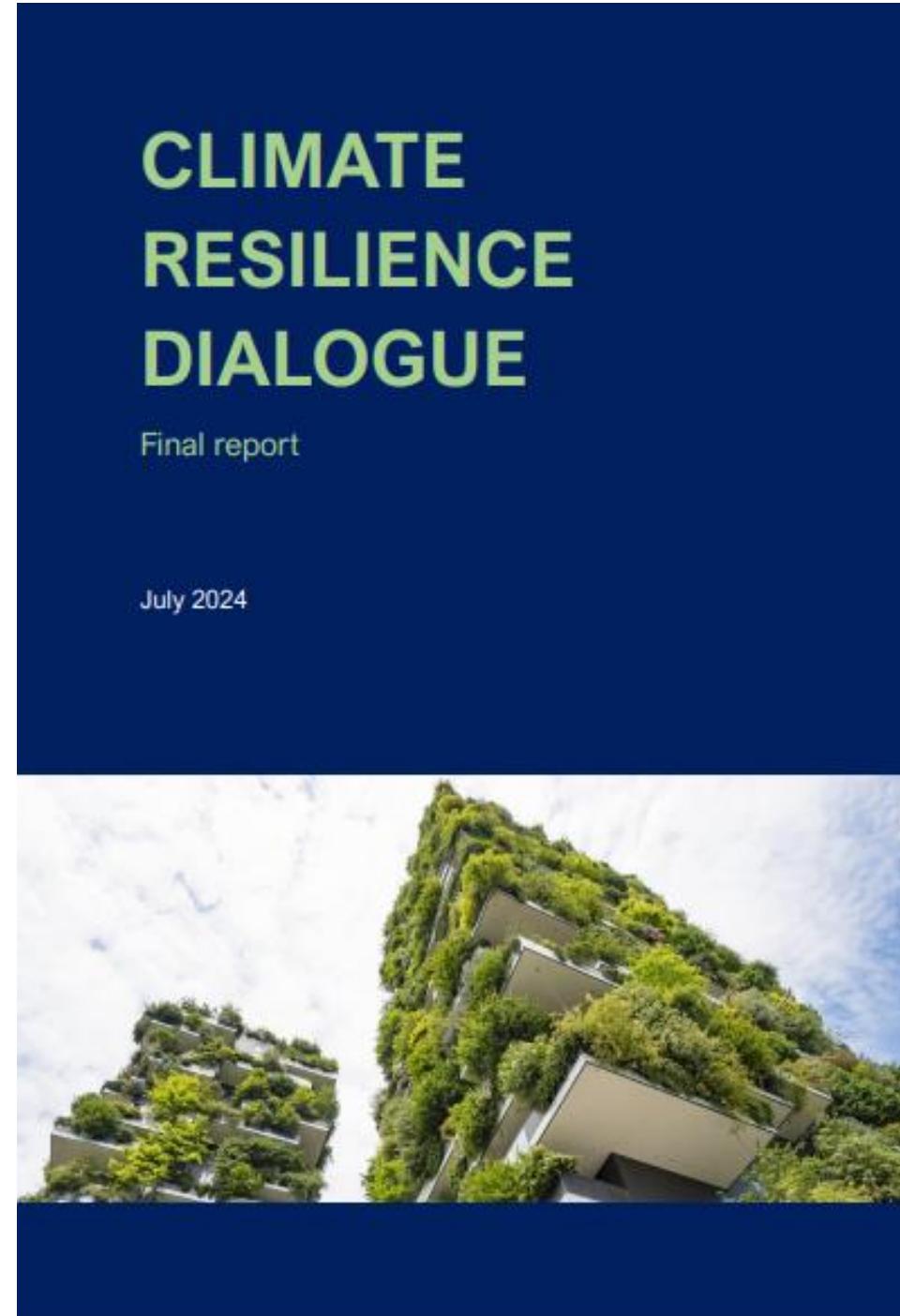
**3. Climate  
adaptation in  
mortgage**

# Question:

We see a damage reduction potential of climate adaptation measures. Why don't insurers invest often in public flood defense infrastructure?



# EC and insurance: Climate Resilience Dialogue //



Main advice for insurers:

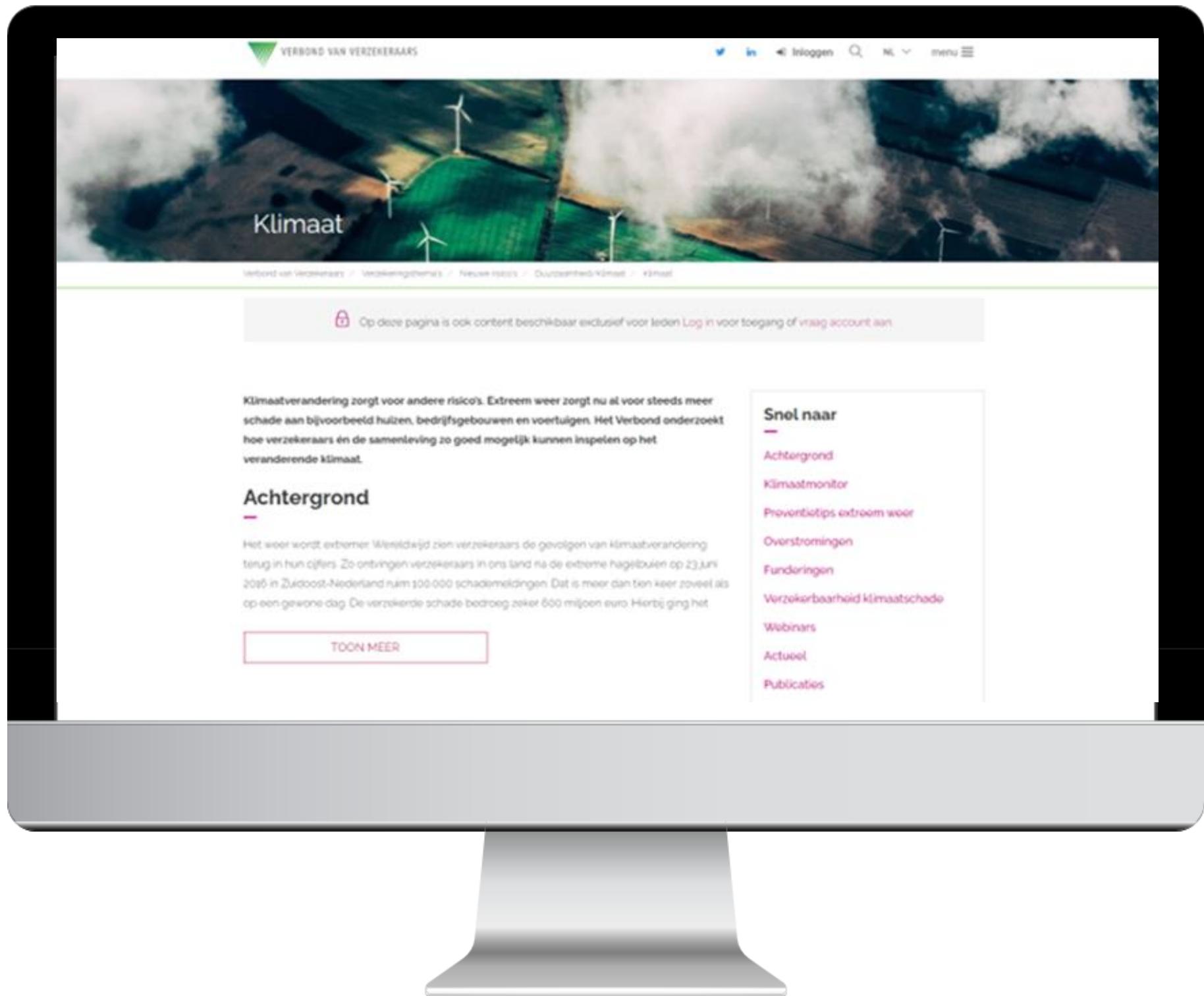
- Incorporate Build Back Better
- Quick and adequate claims after a disaster
- Climate adaptation advice for customers
- Risk based pricing to stimulate adaptation
- Early warning
- Share risk information (Climate Label for instance)

- **Strong collaboration with academic research** to better understand climate risks and stimulate innovation within the insurance sector.

→ 2026: IE currently working on a position paper on climate resilience

# More information



 [verzekeraars.nl/klimaat](http://verzekeraars.nl/klimaat)

 [Vylon Ooms –  
v.ooms@verzekeraars.nl](mailto:v.ooms@verzekeraars.nl)

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