

Water Webinar

October 15, 2024



Vereniging van Beleggers
voor Duurzame Ontwikkeling



Speakers

- Alexander Burr
Senior Manager Investment Stewardship at LGIM
- Frank Wagemans
Senior Engagement Specialist at Achema IM
- Nora van Cauwenbergh
Professor Water and Societal Transitions at IHE Delft

Moderator

Jacqueline Duiker, Senior Manager at VBDO

Practical notes

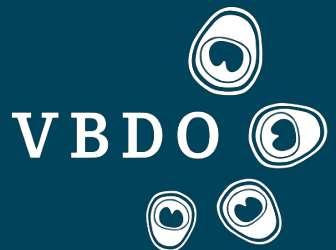
- This webinar will be recorded for future viewing
- Q&A

Poll question

With nearly 70% of the world covered in water, but only 2,5% of that being fresh water, how much of fresh water is available to fuel and feed the worlds' population?

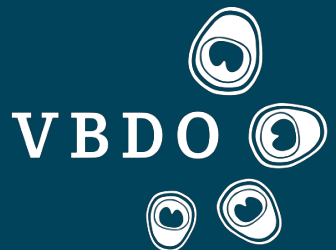
- A: 1% of fresh water sources
- B: 10% of fresh water sources
- C: 15% of fresh water sources

[Source: National Geographic](#)



Alexander Burr

Senior Manager Investment
Stewardship at LGIM



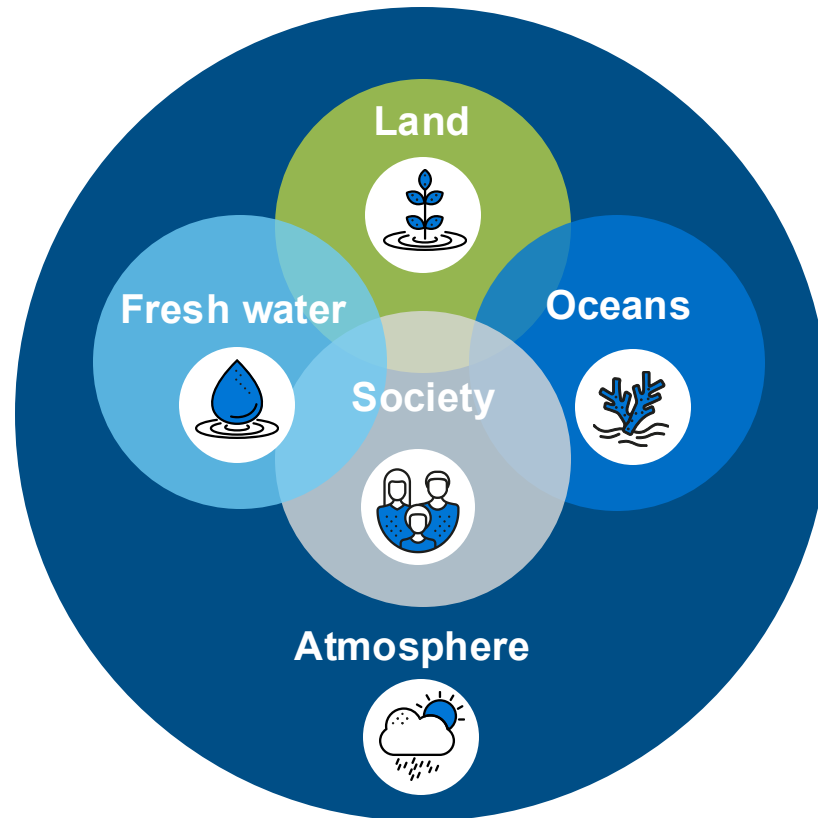


Mitigating water risk

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CAPITAL AT RISK. PLEASE READ THE RISK WARNINGS.

Nature

What is it, and why does it matter to investors?



NATURE:
the entirety of the natural world

- Foundation of our economic and social system - 50% global GDP is highly or moderately dependent on nature and its services¹
- The loss of vital ecosystem services (on which society & business depend) is estimated to reduce annual GDP by \$2.7 trillion by 2030²
- Nature-related risks could have significant macro-economic implications and may become a source of financial instability³

BIODIVERSITY:
the 'living' part of nature

¹ Estimated. Source: <https://www.pwc.com/gx/en/issues/esg/nature-and-biodiversity/managing-nature-risks-from-understanding-to-action.html>

², <https://www.worldbank.org/en/news/press-release/2021/07/01/protecting-nature-could-avert-global-economic-losses-of-usd2-7-trillion-per-year>

³ Network for Greening Financial Systems https://www.ngfs.net/sites/default/files/medias/documents/statement_on_nature_related_financial_risks_-_final.pdf

Source: LGIM, December 2023

LGIM's approach to nature

Grounded in a global context and aligned with the Global Biodiversity Framework (GBF)

- LGIM is working to support the **Kunming-Montreal Global Biodiversity Agreement's** mission of taking urgent action to halt and reverse nature loss by 2030, and the vision of **living in harmony with nature by 2050**
- Our approach aligns with and supports the realisation of a number of global goals and targets set out in the GBF.

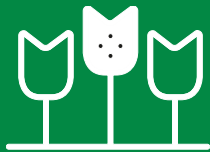
Aspects of the GBF that our approach supports:

- i) requiring businesses to **regularly monitor, assess and transparently disclose** biodiversity impacts and dependencies;
- ii) aligning **public and private financial flows** with nature;
- iii) **reforming harmful government subsidies**; and
- iv) **increasing financing and investment** for nature.

Target 15 of the GBF requires businesses to assess and disclose biodiversity dependencies, impacts and risks, and reduce negative impacts

LGIM's nature framework

Natural capital management



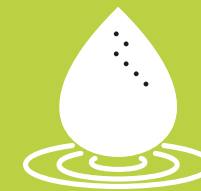
Deforestation



Circular economy

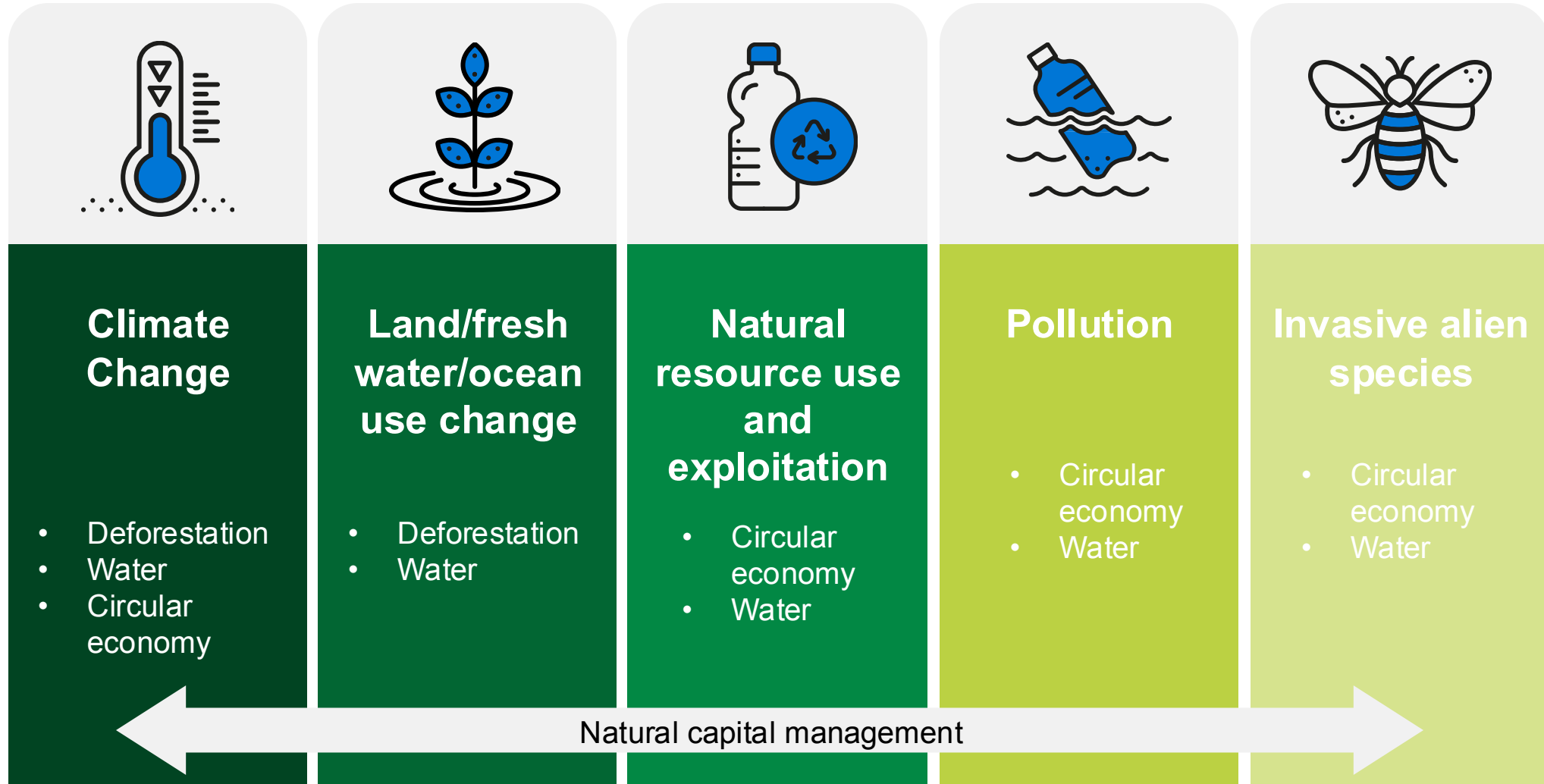


Water



Five direct drivers of nature change

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) identified five drivers of nature change, and mapped against LGIM's Nature sub-themes



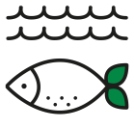
Key considerations – locations, sectors, value chains, indigenous peoples and local communities, and agriculture.

As identified by the identified by Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Service (IPBES) and aligned with the framework of the Taskforce for Nature-related Financial Disclosures (TNFD).

Source: LGIM, December 2023

Water

Aim – Protect, manage and help restore marine and freshwater ecosystems



- Freshwater and oceans are two of the four realms of nature
- By 2030, demand for fresh water will outstrip supply by 40%¹
- Water risks are financial material
- From 1998-2017, droughts caused global economic losses of \$124 billion²



- Water can have a diversified impact on company operations & value chains.
- Companies may be both impacted by water & dependent on it
- Focused on two areas of global water system – water quantity and quality
- LGIM's Global Research & Engagement Groups: working together on engaging with UK water utilities and regulation



Stakeholder engagement:

- Ceres – Valuing Water Finance Initiative
- The Investor Forum: Water Utilities and Regulation
- FAIRR (Waste and Pollution)
- CDP



LGIM ESG Score: Water management programme

This assesses a company's initiatives to reduce, reuse and manage water consumption across its business activities, including monitoring and evidence of managerial oversight of water use

¹ [Global fresh water demand will outstrip supply by 40% by 2030, say experts | Water | The Guardian](#)

² [Drought in numbers | UNCCD](#)

³ [Water pollution from agriculture: a global review - Executive summary \(fao.org\)](#)

Legal & General Investment Management

LGIM Europe Disclaimer and important legal notice (1/2)

Key risks

The value of investments and the income from them can go down as well as up and you may not get back the amount invested. Past performance is not a guide to future performance.

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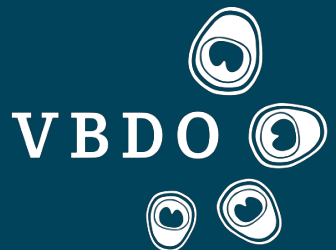
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Poll statement

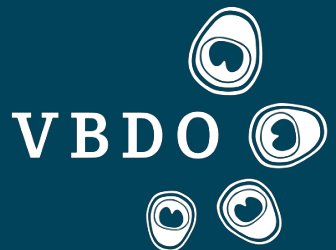
Investors have sufficient ESG-data on water available to assess water related risks



Building a bridge over troubled water

Frank Wagemans

Senior Engagement Specialist
Achmea IM



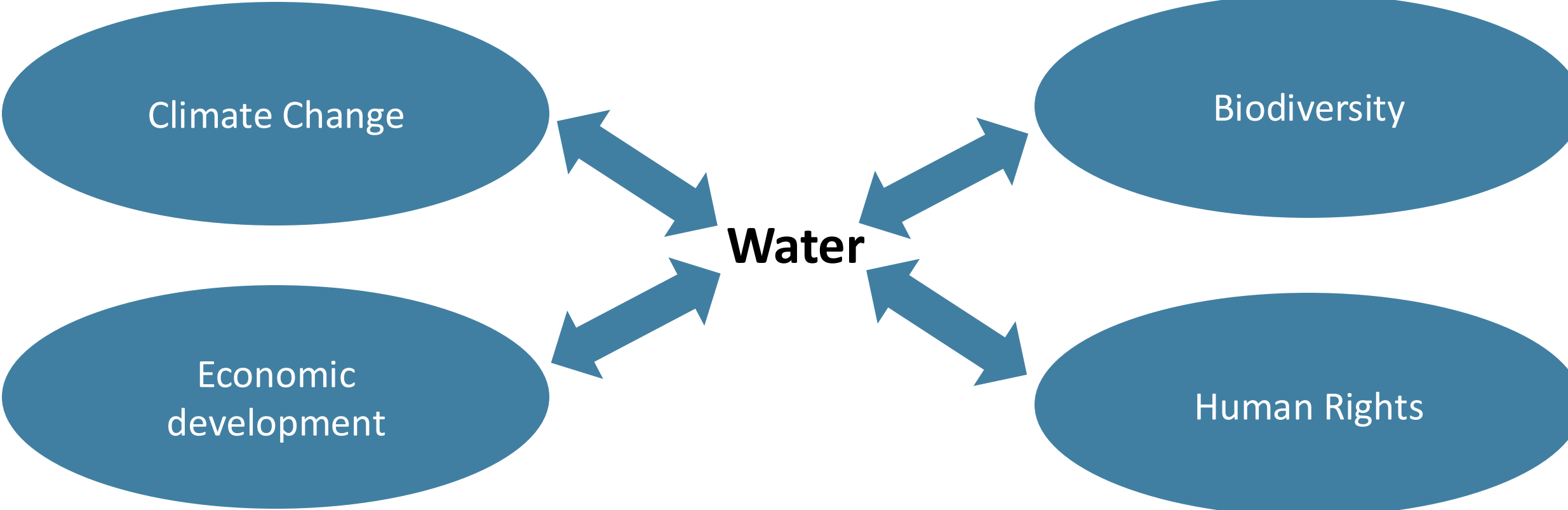
An aerial photograph of a wide river at sunset. The sky is a mix of orange, yellow, and blue, with the sun low on the horizon. The river's surface is highly reflective, mirroring the colors of the sky. The surrounding landscape is a mix of green and brown, suggesting a rural or undeveloped area. A white rectangular text box is overlaid on the right side of the image, containing the text "Why we need a bridge over troubled water." in a dark blue, sans-serif font. A small blue horizontal line is positioned below the text box.

Why we need a bridge over troubled water.

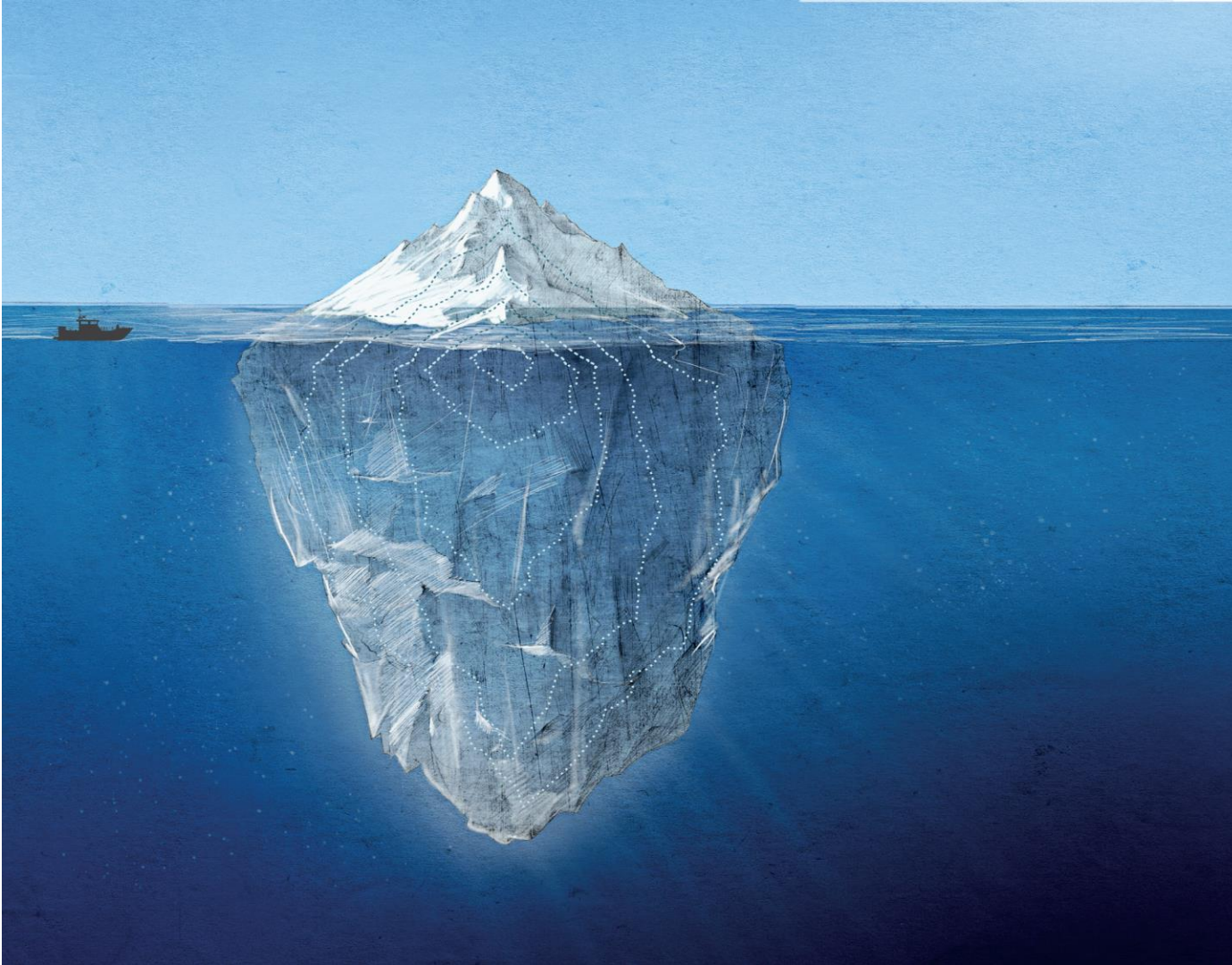
Why Water Matters?



Water connects different themes within responsible investment



Tip of the Iceberg



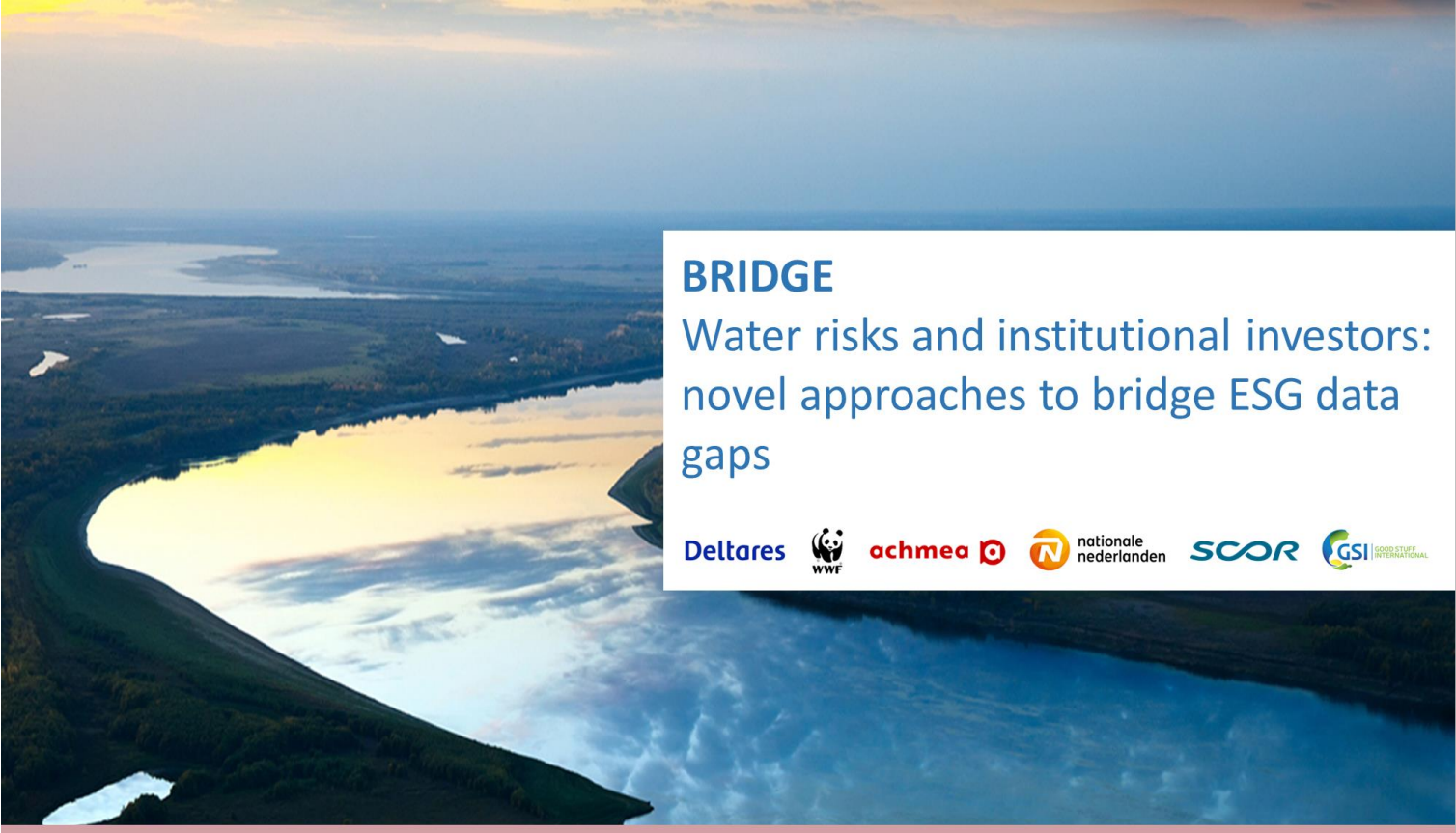
What do we see in corporate reporting?

- Overall water use
- Reduction water use

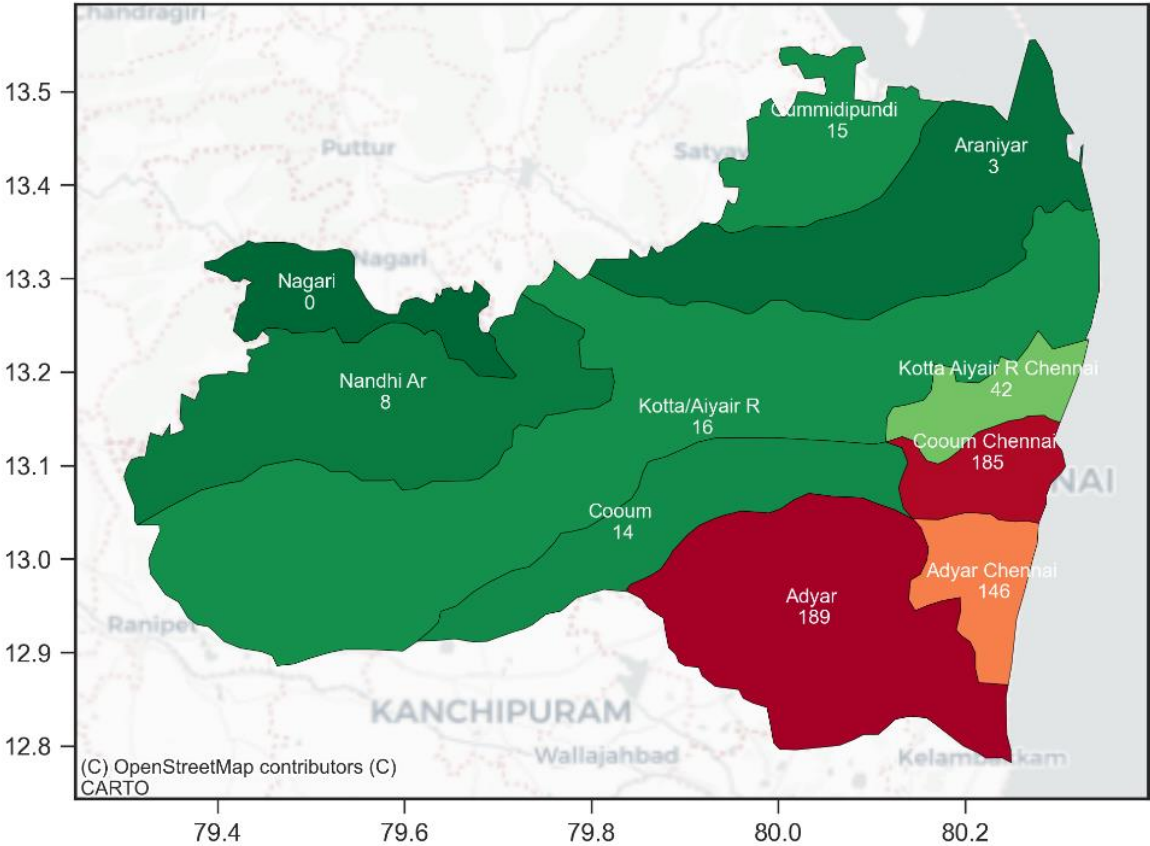
What is below the surface?

- Supply chains
- Which water?
- Water quality
- Flooding risks
- Co-operation
- Temporal variations
- Geographical location

Bridging the gap



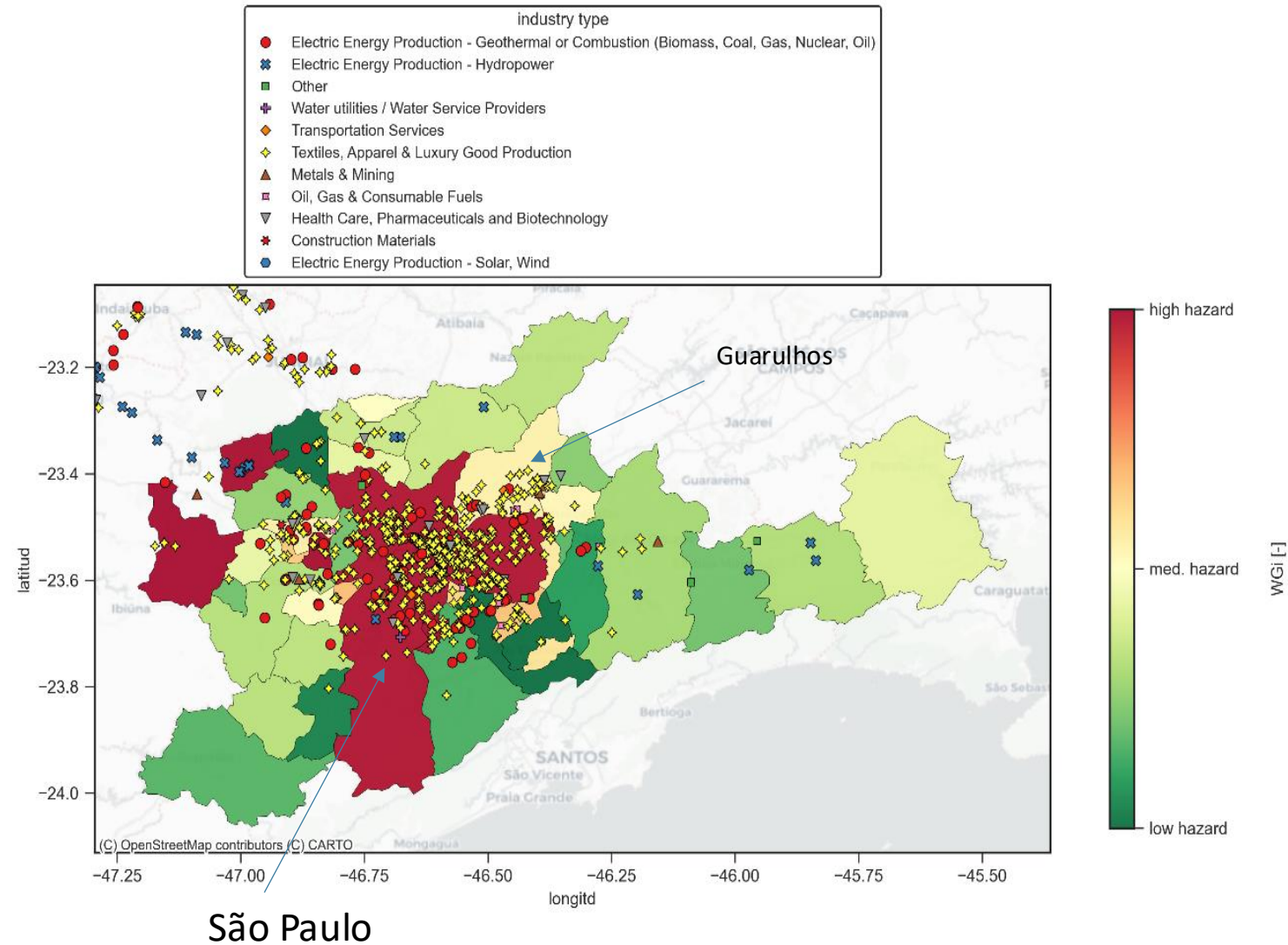
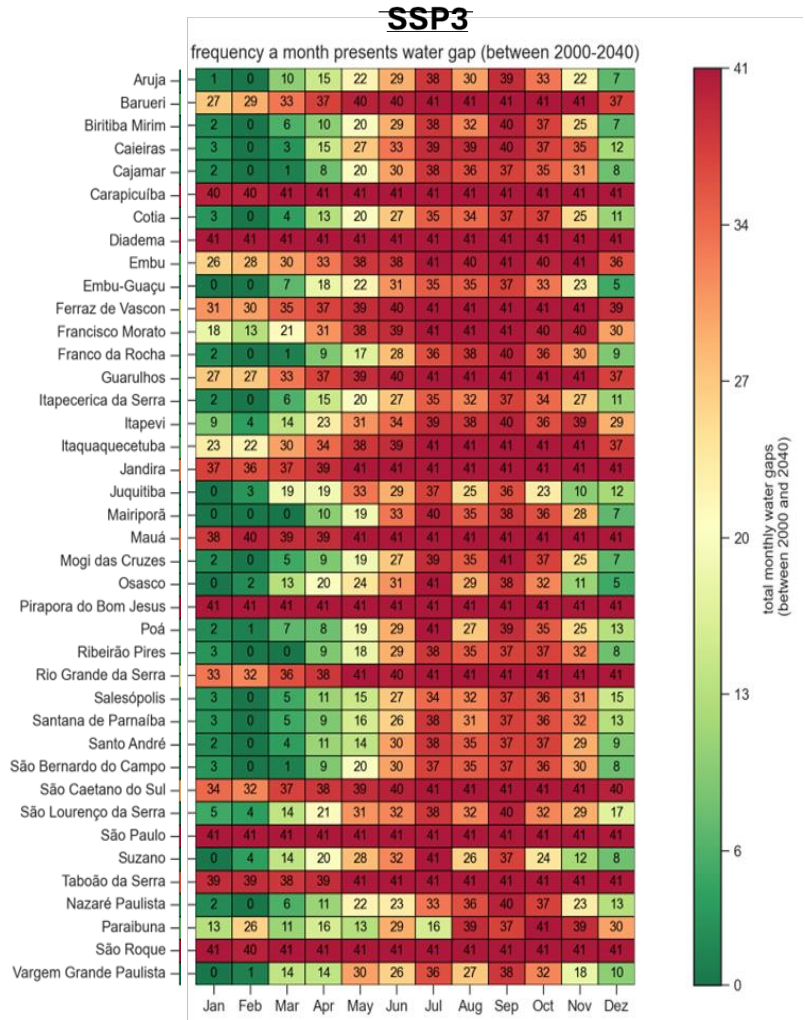
WATERLOUPE – Chennai Case Study



Construction Materials		2	1										
Electric Energy Production - Geothermal or Combustion (Biomass, Coal, Gas, Nuclear, Oil)	8	5				1	2	25	4				
Electric Energy Production - Solar, Wind		1			1	3	33	18	1				
Health Care, Pharmaceuticals and Biotechnology	2	1				1	11	3	3	1			
Metals & Mining	2						4						
Oil, Gas & Consumable Fuels		1								1	3		
Other		3	1			1	17	2	3	3			
Textiles, Apparel & Luxury Good Production	3	3	3	6		11	153	105	135	30			
Transportation Services								1					
	Araniyar	Gummidiipundi	Kotta/Aiyair R	Nandhi Ar	Nagari	Cooum	Adyar	Adyar Chennai	Cooum Chennai	Kotta Aiyair R Chennai			

WATERLOUPE – Alto Tiete Case Study

“fragmented world”



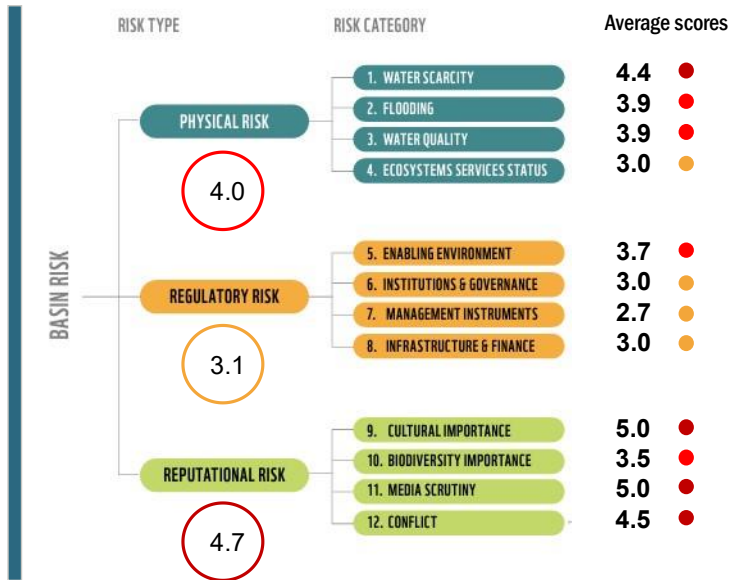
RESULTS CHENNAI RIVER BASIN

Overall score

4.0

Risk legend

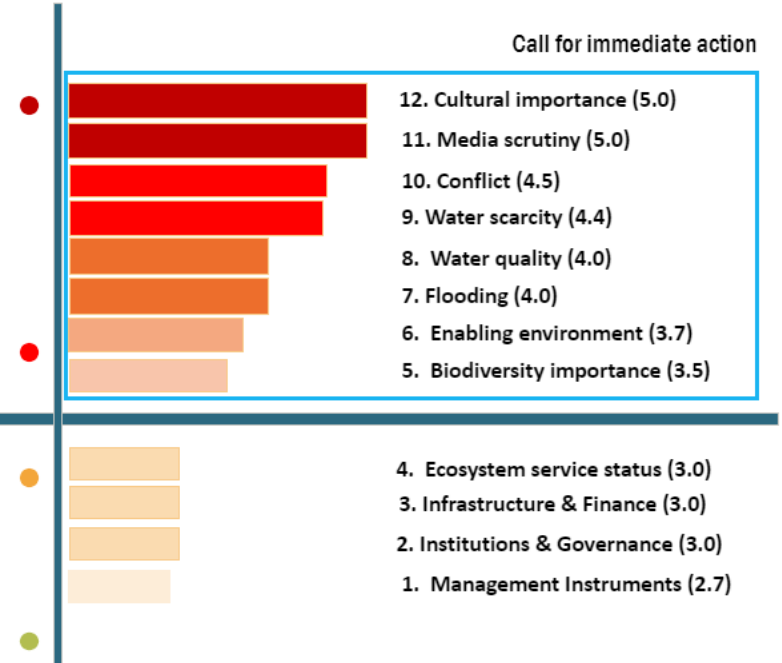
- Low
- Medium
- High
- Very high



Risk categories


Risk legend

- Low
- Medium
- High
- Very high







Material Risks & General Response Strategies

Legend

 Physical risk

 Reputational risk

 Transition risk

Risk type	Risk	Response
	Dependency on water-intensive products/processes	Foster resilient supply chains through information-sharing on water scarcity challenges.
	Regulatory Compliance	Develop business continuity plans based on risk assessments and seasonal variability. Implement transparent reporting and adopt independent water stewardship standards.
	Water quality degradation	Comply with local, regional and national standards for wastewater treatment. Adopt advanced treatment processes to mitigate water contamination.
	Lack of Communication & Stakeholder Engagement	Transparent communication on water stewardship. Collaborate on community projects to support sustainable water management.

What is needed for investors, companies and ESG-data providers?



**Location & asset
specific data**



**Understand
sector and
watershed
specific risks**



**Forward looking
data and
scenario's**



Supply chains



**Link (financial)
reporting to
TNFD and LEAP
approach**



Act!

The need for assessment and engagement

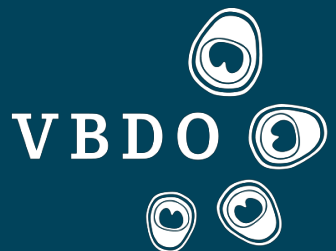
- **Engagement:**
 - Push for location specific data
 - Translation to actions in basins at risks and integration into decision-making
 - Co-operation is needed
- **Invitation:**
 - Next steps of the BRIDGE project
 - Heavy focus on collaborative engagement
 - Building on existing initiatives such as the Valuing Water Finance Initiative
 - Geographical focus as a litmus test for real-world impact

An aerial photograph of a wide river winding through a forested landscape at sunset. The sky is a mix of orange, yellow, and blue, with the sun's glow reflecting on the water's surface. A black rectangular box is overlaid on the right side of the image, containing the text "Questions?".

Questions?

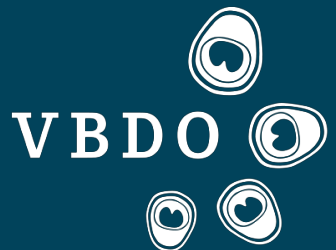
Wordcloud

What do you think of when you hear the term EU Taxonomy?



Nora van Cauwenbergh

Associate Professor Water and
Transitions IHE Delft



Water and finance

Divest or invest

Understanding risk and benefit distribution for
hyper-blended water finance

Nora Van Cauwenbergh, PhD, VBDO seminar, 15 October 2024



Leaders | A \$25trn hit

Global warming is coming for your home

Who will pay for the damage?

Source: *Economist*, 2024



Risk category distribution	Overall Cervest Rating by risk category and % of assets exposed to risk under a BAU climate emissions scenario <i>Source: Cervest, 2023</i>		
	2025	2050	2100
Heat stress	C 71% of assets	D 92% of assets	E 100% of assets
Precipitation risk	B 46% of assets	C 60% of assets	D 86% of assets
Wind risk	C 68% of assets	C 68% of assets	C 68% of assets

Insurance leaders have unequivocally stated that if climate change raises average temperatures to 4°C above pre-industrial levels most assets will be uninsurable.⁴⁷

Source: *University of Exeter*, 2023

PROPERTY OVERVALUATION FROM FLOOD RISK



Source: *Nature Climate*, 2023 - *Financial Times*

OVERVALUED BY
\$121BN - \$237BN



@BtaGreen 2024

Climate Change

PHYSICAL RISK
arise from
climate change impacts &
climate-related hazards

TRANSITION RISK
related to
Policy & legal, liability,
technology, market and
reputation risks



Real Estate Impact

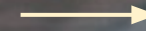
NON-STRUCTURAL DAMAGE
Do not compromise
buildings' integrity

STRUCTURAL DAMAGE
Cause deterioration of
buildings' physical integrity



Real Estate Value

**MONETIZATION
OF DAMAGE**



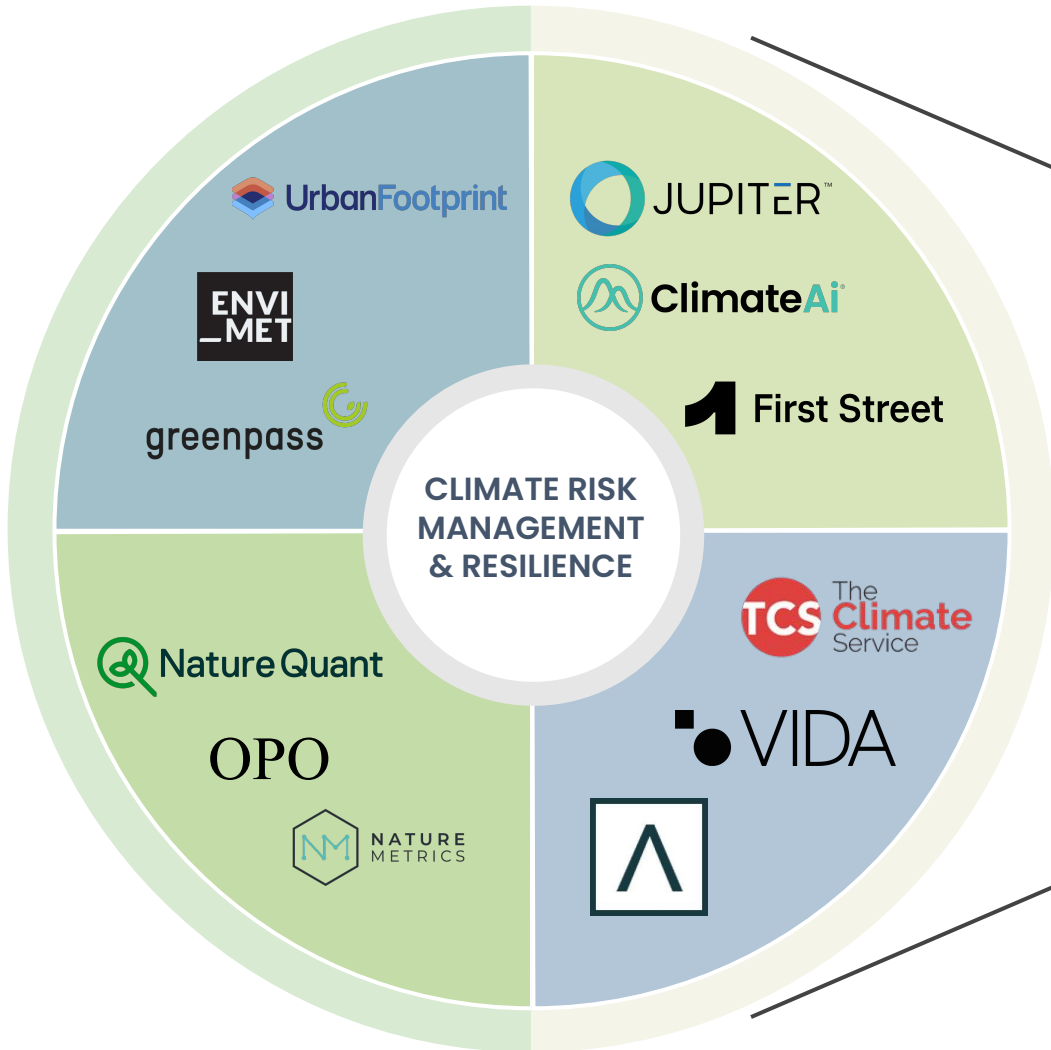
Financial Stability

INSURANCE
ABILITY

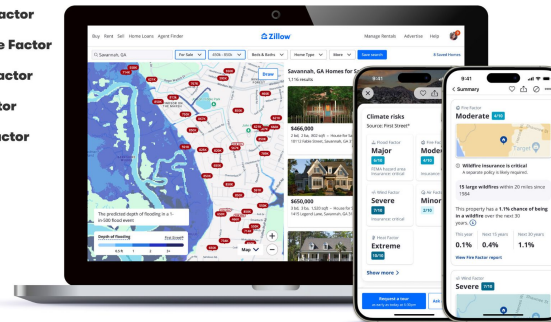
MORTGAGE AND
PAY-BACK ABILITY

MACRO-ECONOMIC
CONSEQUENCES

Options and tools



- Flood Factor
- Wildfire Factor
- Wind Factor
- Air Factor
- Heat Factor

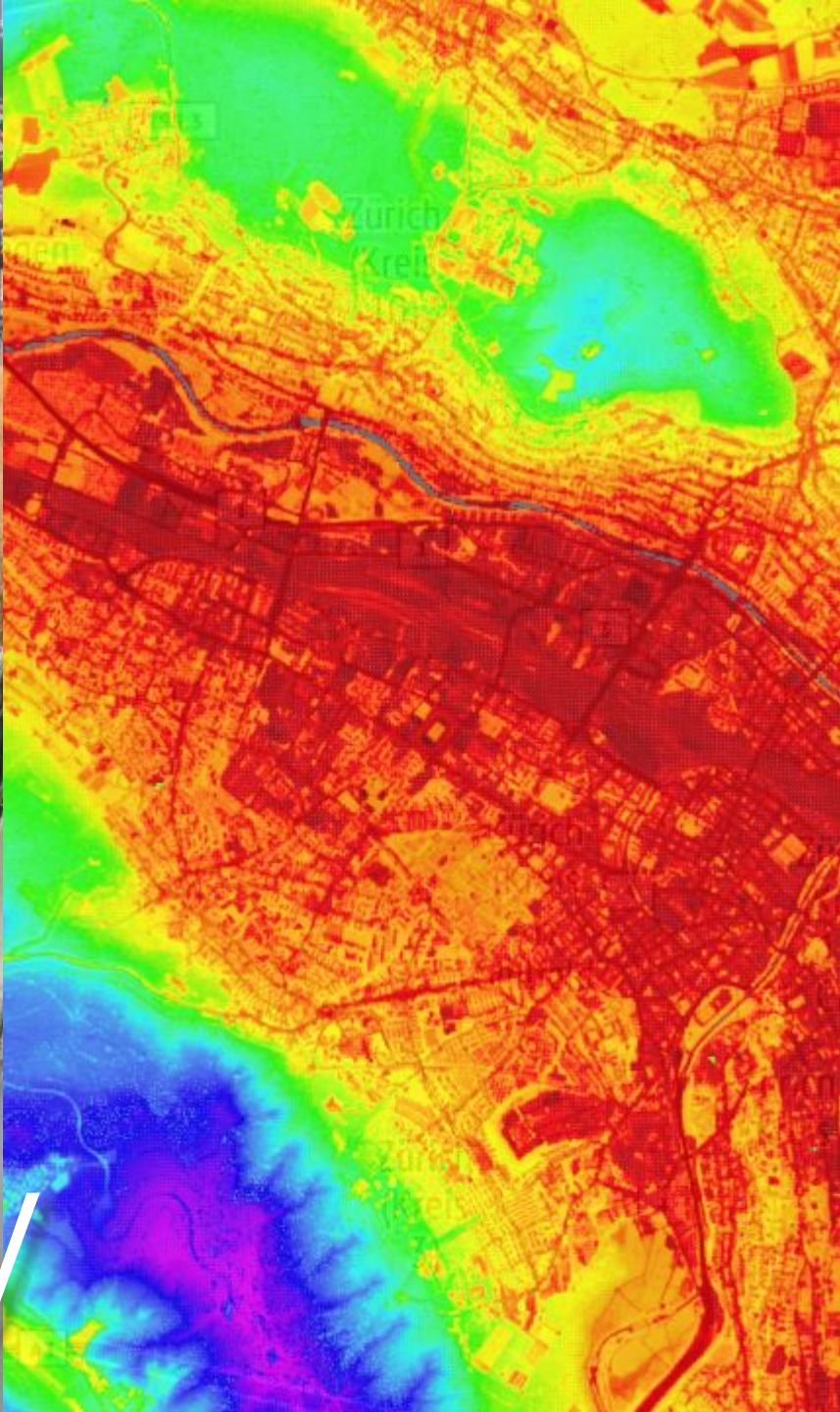
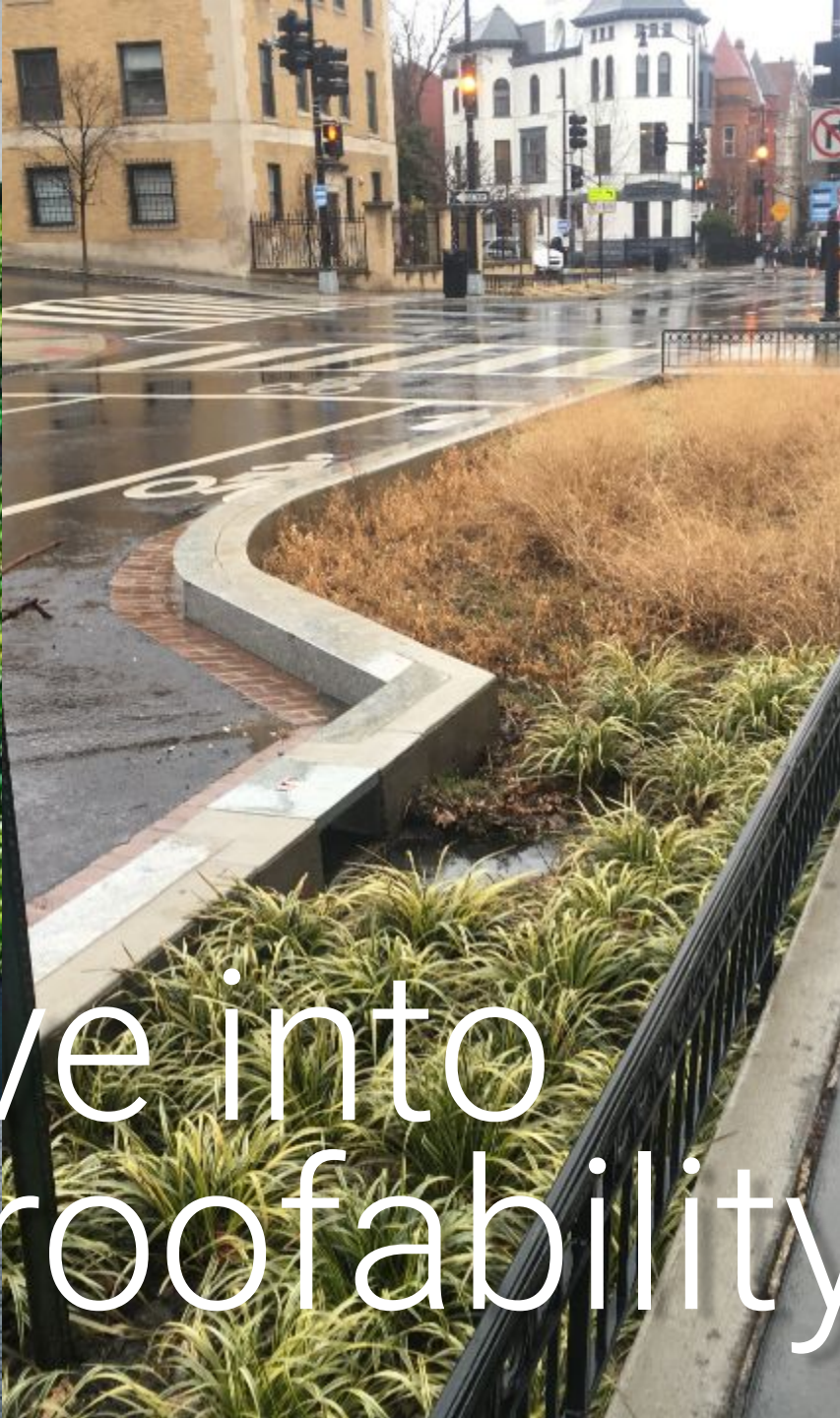


DIVEST

INVEST



Risks



Deep dive into
Futureproofability

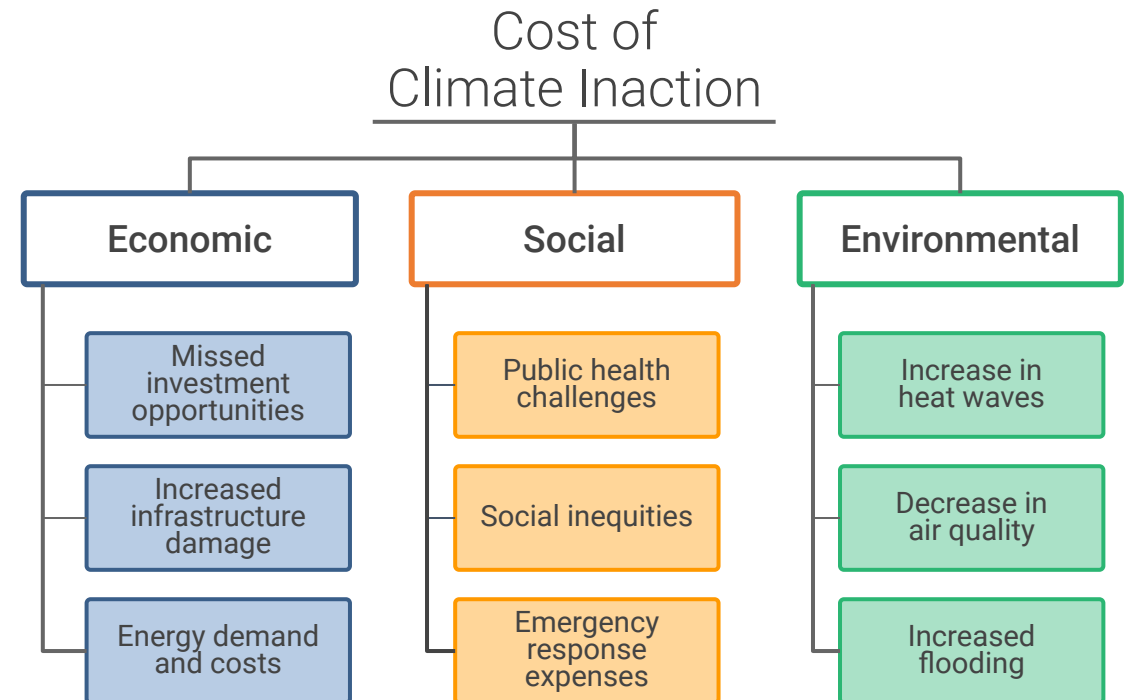
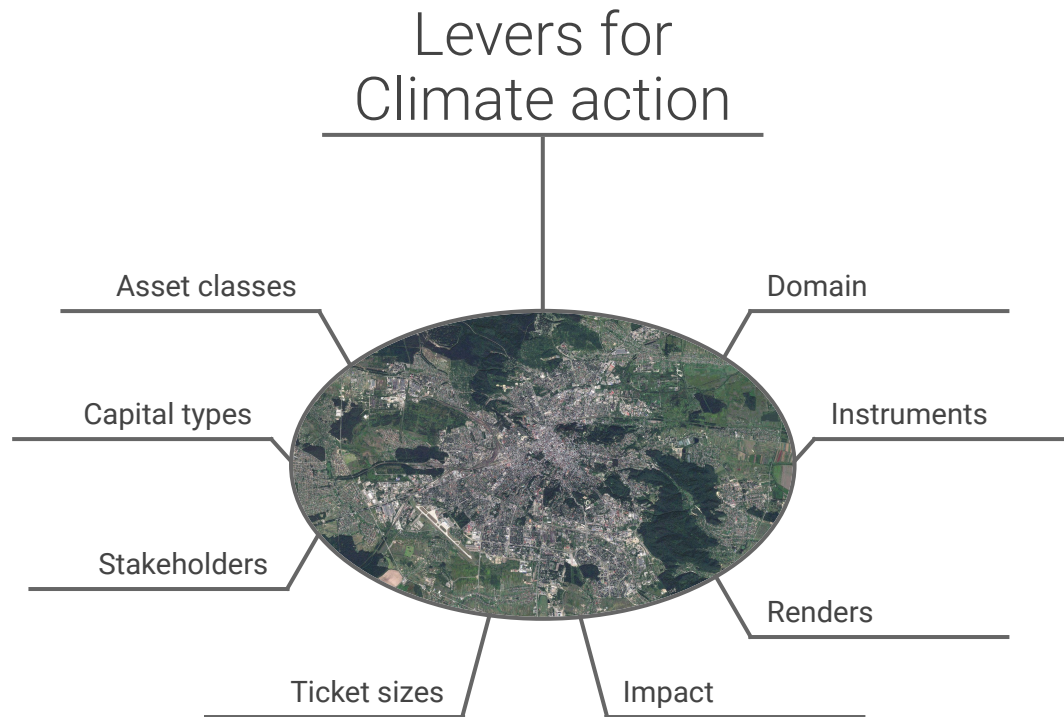
Water risks and future-proofing cities

LEUVEN **LEUVEN 2030**  leuven

CLIMATE CITY CONTRACT

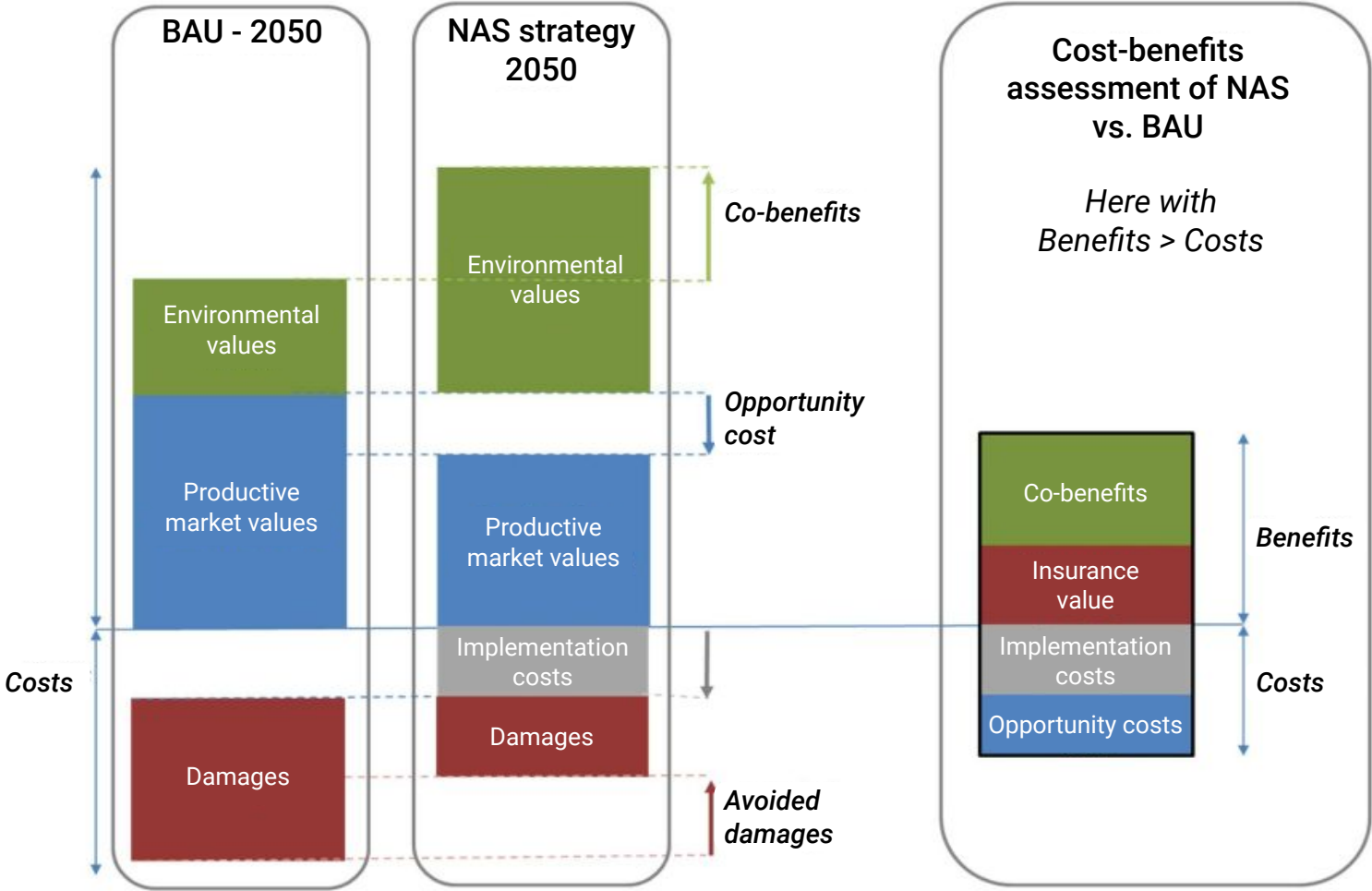


Investing in water Security through hyper-blending



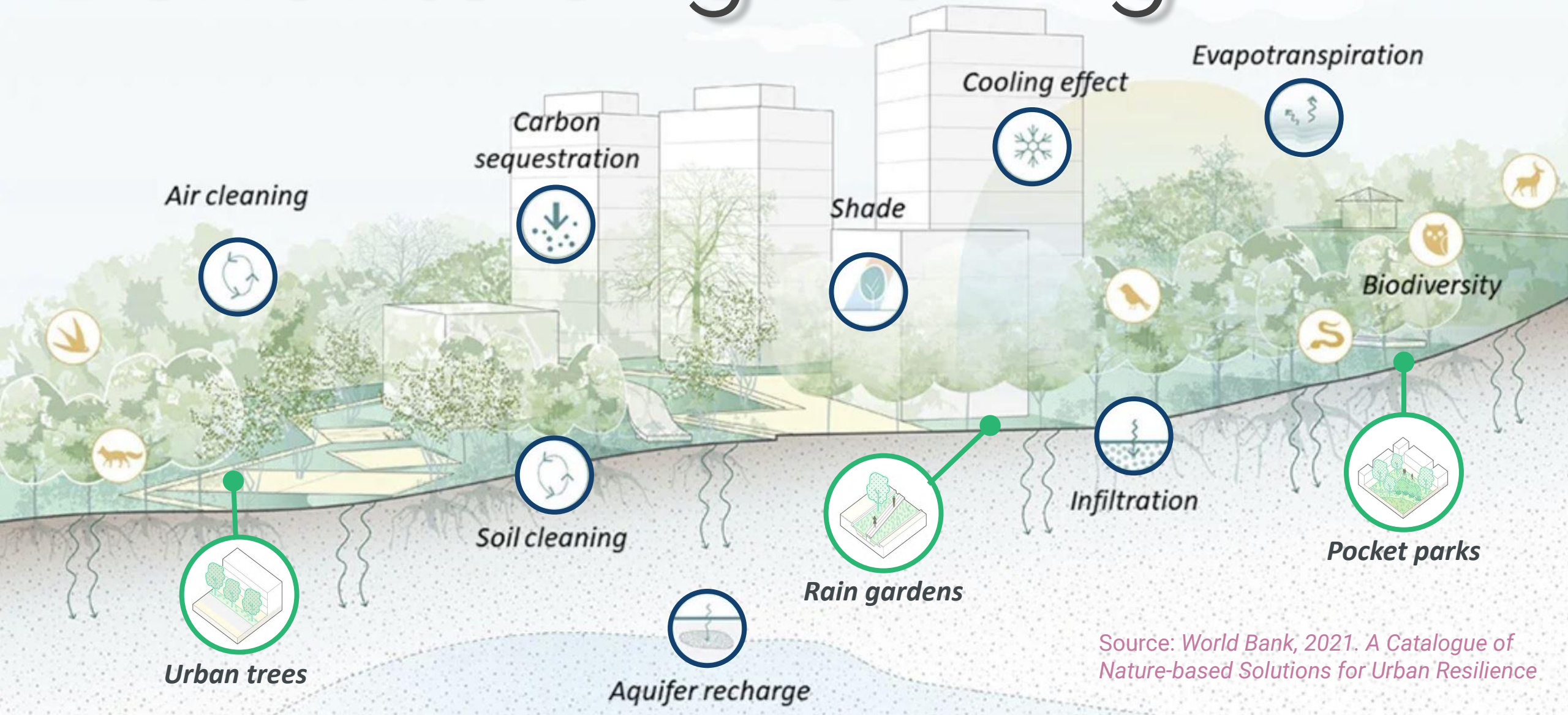
Source: Coenen et al., 2024 - Financing of the Climate Transition - Leuven

Cost-benefit assessment considering damage



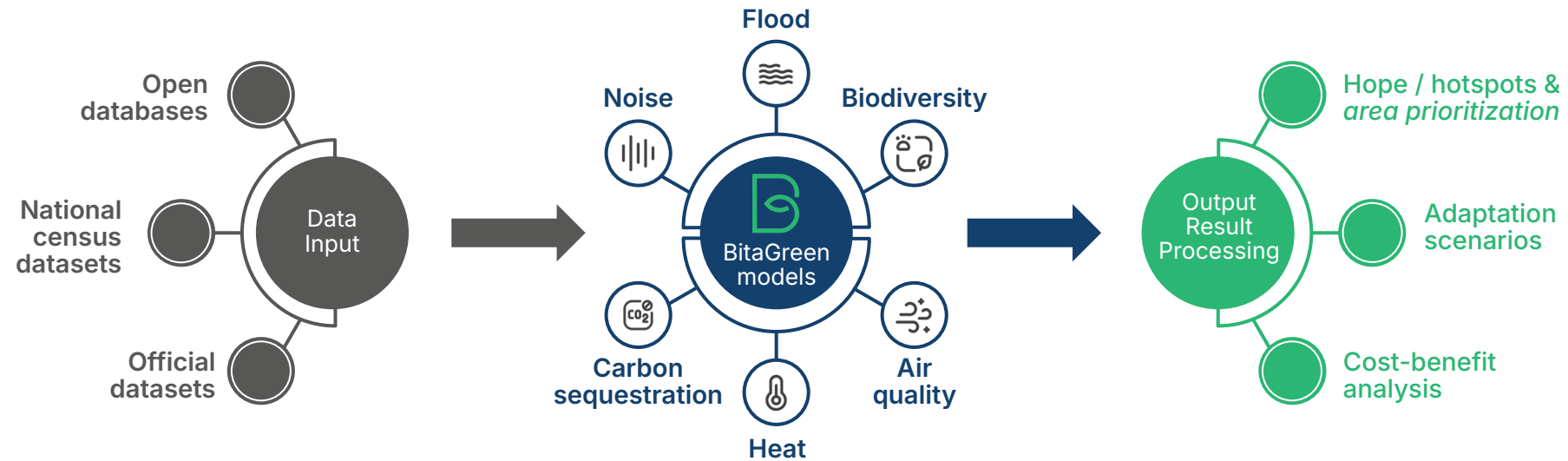
Source: Lopez Gunn et al. 2023, Greening Water Risks - Natural Assurance Schemes, Springer - NAIAD HEU Project

Benefits of greening

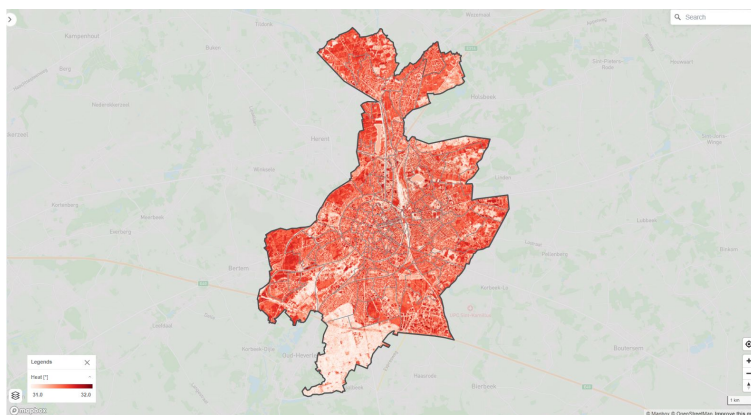


Source: World Bank, 2021. *A Catalogue of Nature-based Solutions for Urban Resilience*

Building trust in risk / benefit distribution



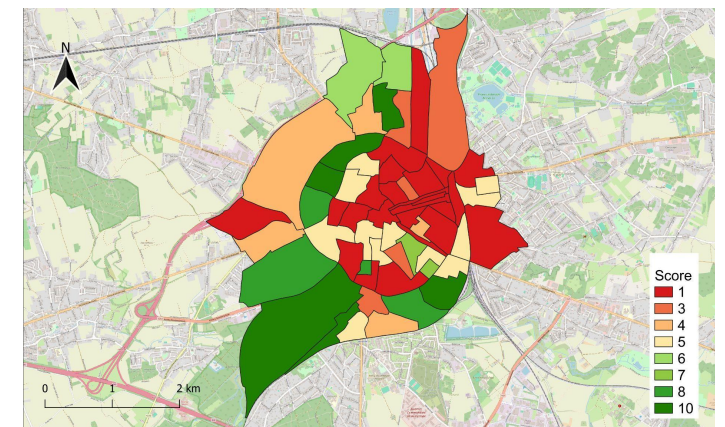
HEAT



FLOOD



ACCESS TO GREEN SPACE



Workspace > Conservative

Conservative

This is a predefined Scenario of how this district would be if you added conservative Blue green infrastructure such as green roofs, rain gardens, trees, etc.

Details:

- Rain Garden 0.59 km²
- Porous Pavement 0.22 km²
- Green Roof 1.11 km²
- Urban Trees 50

Total Area 57.51 km²

Legends

- Green Infrastructure
 - Urban Trees
 - Green Roof
 - Porous Pavement
 - Rain Garden

Base

- Population Density
- Landuse
- Soil
- Trees
- Elevation

Risk

Green Infrastructure

- Rain Garden
- Porous Pavement
- Green Roof
- Urban Trees

Source: BitaGreen BGI-Builder

Adaptation scenarios: ROI vs Impact

Conservative scenario

Ambitious scenario

Conservative

This is a predefined Scenario of how this district would be if you added Conservative Blue green infrastructure such as green roofs, rain gardens, trees, etc.

Details:

● Rain Garden	0.59 km ²
● Porous Pavement	0.22 km ²
● Green Roof	1.11 km ²
● Urban Trees	50

Total Area 57.51 km²

Scenario Performance i

Score i

7.1/10 Low Risk

Baseline: 6 (Medium risk)

ROI i

12%

Scenario Cost-Benefits

Benefit i **123 M EUR**

Cost i **109.8 M EUR**

Impacts on risks

🔥 Heat	4.2 (1.9%)
🌳 Green Access	7.3 (31.5%)
🌧️ Flood	8.8 (8.2%)

Ambitious

This is a predefined Scenario of how this district would be if you added Ambitious Blue green infrastructure such as green roofs, rain gardens, trees, etc.

Details:

● Porous Pavement	0.86 km ²
● Rain Garden	0.98 km ²
● Green Roof	1.52 km ²
● Urban Trees	473

Total Area 57.51 km²

Scenario Performance i

Score i

7.3/10 Low Risk

Baseline: 6 (Medium risk)

ROI i

-40%

Scenario Cost-Benefits

Benefit i **153.7 M EUR**

Cost i **255.7 M EUR**

Impacts on risks

🔥 Heat	4.2 (1.5%)
🌳 Green Access	8.1 (39.5%)
🌧️ Flood	8.8 (5.8%)

About

Nora Van Cauwenbergh, PhD

Associate Professor Water and Societal Transition

- Expert water and sustainable development, bio-engineer
- Co-design innovative NRM → green and inclusive
- Academia (IHE Delft, VUB) and business (Bitagreen BV)

- Over 20 years experience in academia and private sector
- Participatory water planning and management
- Nature-based solutions for climate risks
- Value of water and nature
- Co-design/build green buildings and districts





CONTACT:
Dr. Nora Van Cauwenbergh
n.vancauwenbergh@un-ihe.org



**Institute for
Water Education**
under the auspices of UNESCO

Bitagreen
green assurance solutions

Q&A



A vibrant peacock is shown from a rear perspective, with its tail feathers fully fanned out. The feathers create a dense, repeating pattern of 'eyes'—circular motifs with a blue center, a green ring, and a brown outer edge. The peacock's body is a deep blue, and its neck is a lighter, iridescent blue. The overall image is rich in color and texture.

Thank you for joining!