

# The potential of nature-based solutions for urban sustainability challenges – outputs and insights from the Naturvation project

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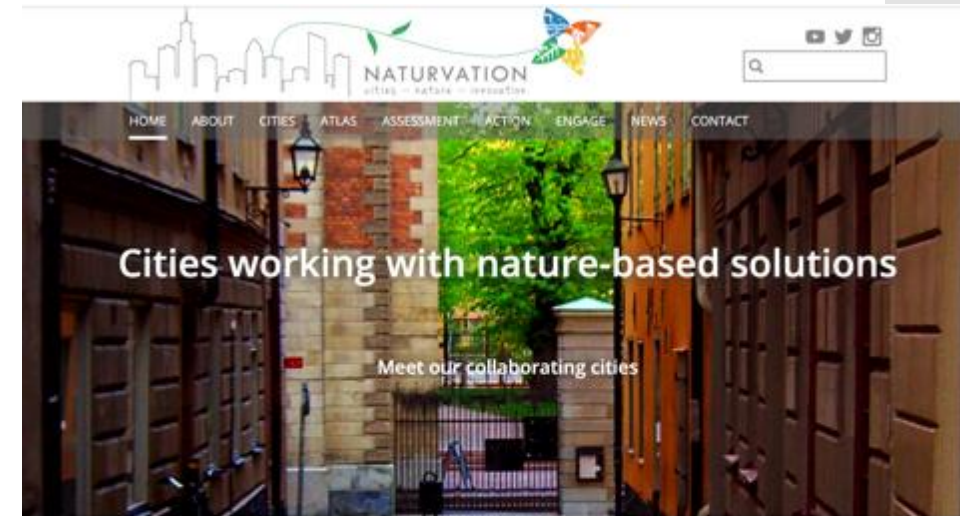
Global Forum on Human Settlements  
December 16, 2022



# NATURVATION

NATure-based **Urban**  
innoVATION

- 4-year research project (2016-2020+)
- Involving 14 institutions across Europe
- Funded through the EU Horizon 2020 Programme
- *Seeks to develop understanding of **what NBS can achieve**, examine how **innovation** can be fostered in this domain, and contribute to **realising the potential of NBS** for responding to urban sustainability challenges.*



LEARNING  
TOGETHER



INNOVATING  
IN CITIES



EXPLORING  
THE ATLAS



ASSESSING  
VALUE

# Welcome to the Atlas

A collection of more than 1000 inspiring nature-based solutions from European cities and beyond

### Select Key Challenges



### Select Nature-based Solutions



### Global focus on Climate i

Show projects

Search

### Advanced Filter i

- Challenges addressed
- Nature-based solutions
- Region
- Country
- City
- Focus
- Management set-up
- Initiating organisation
- Project cost
- Type of financing source
- Environmental impacts
- Social impacts
- Economic impacts
- Presence of formal monitoring system



**Funders**

This project has been funded by the European Union's Horizon 2020 research and innovation programme under grant agreement No. 730243

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**Partners**

CitiesWithNature LOCAL & SUBNATIONAL GOVERNMENTS COMMITTED TO SUSTAINABILITY

INTERACT-Bio Integrated action on biodiversity

ICLEI Local Governance for Sustainability



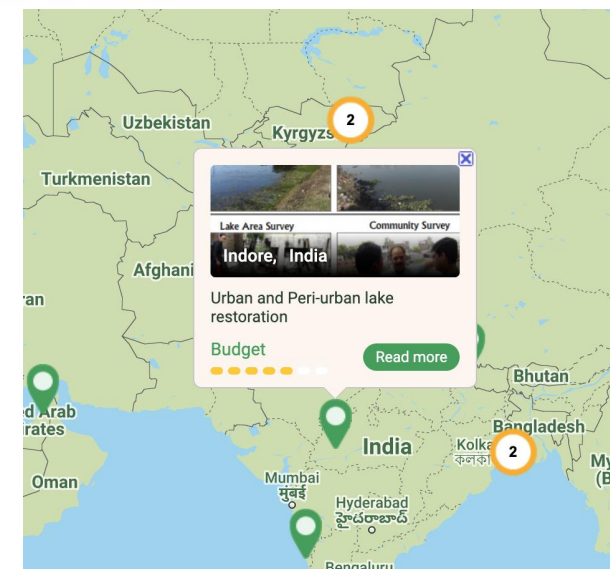
## Example from UNA:

## Urban and peri-urban lake restoration in Indore, India



### Project objectives

1. Protect lakes through better management of catchments undergoing rapid urbanization and to increase residents' resilience to water scarcity.
2. Engaging with multiple stakeholders especially the community to reduce the flow of untreated sewage into the lakes.
3. Improve the micro-climatic condition and reduce the rapid growth of weeds, increase the fish production as well as the variety of ducks and wild birds seen.



Lead: Taru Leading Edge

Duration: 2013-2016

Scale: district / neighbourhood

Key challenges: climate adaptation/mitigation (SDG13), water management (SDG6), green space, habitat, biodiversity (SDG16), environmental quality, inclusive and

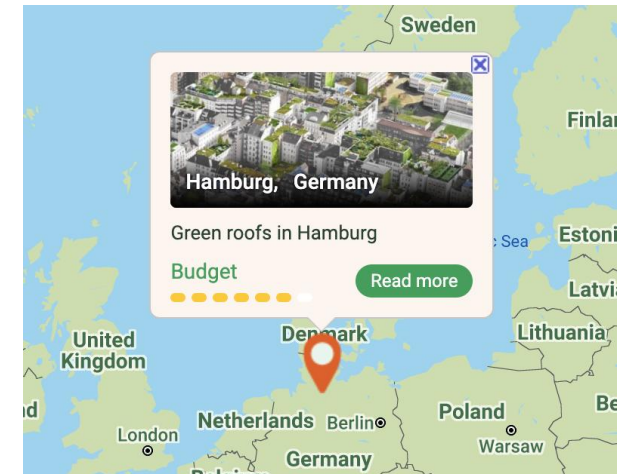
## Example from UNA:

## Green roofs in Hamburg, Germany



### Project objectives

1. Improving the quality of open green city spaces
2. Encouraging space efficient leisure areas
3. Improving the city's rainwater retention capacity
4. Increasing biodiversity
5. Improving the city climate (reduction of the heat island effect)
6. Improving liveability of a rapidly growing



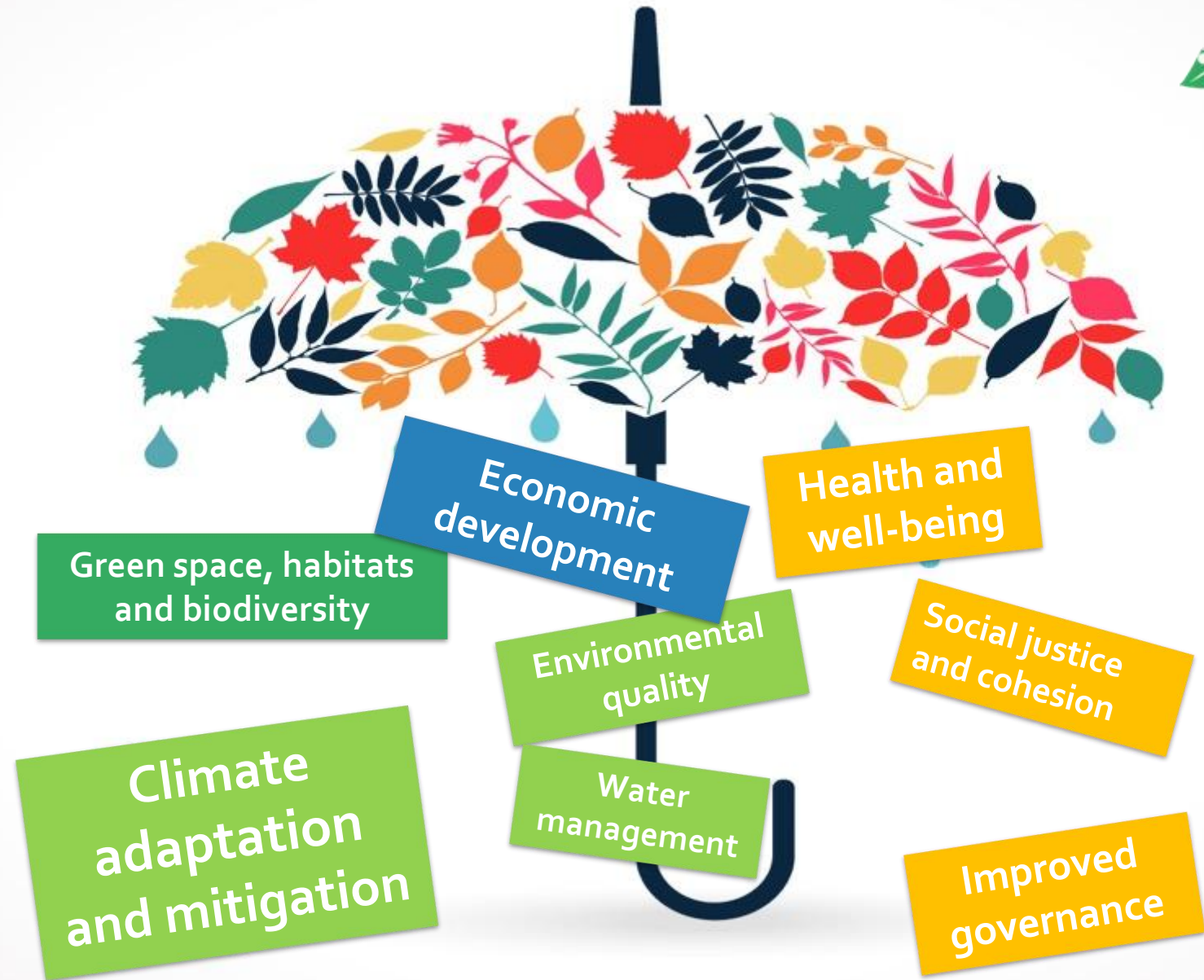
Lead: City of Hamburg

Duration: 2015-2019

Scale: meso-scale (Regional, metropolitan and urban level, Sub-microscale: Street scale (including buildings))

Key challenges: Climate action for adaptation, resilience and mitigation (SDG 13); Water management (SDG 6); Green space, habitats and biodiversity (SDG 15); Environmental quality; Regeneration, land-use and urban development; Health and well-being (SDG 3); Economic development and employment (SDG 8)

Nature-Based Solutions can address various sustainability challenges





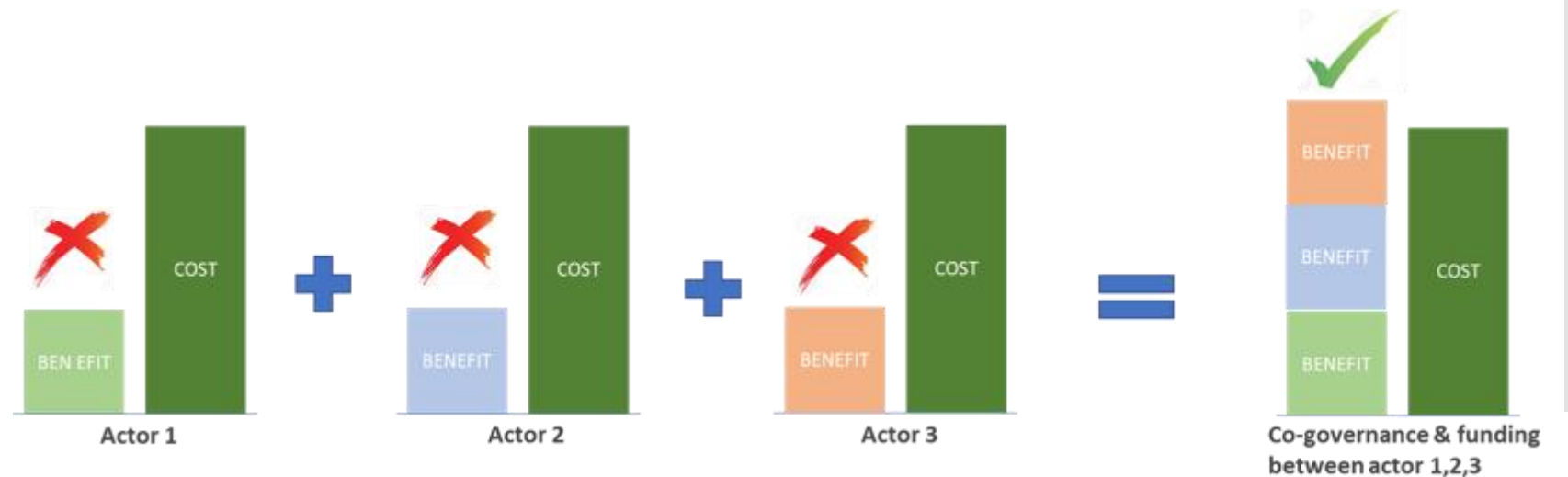
# Impacts associated with climate and biodiversity

Source: Almássy, D., L. Pintér and S. Maia (2022) Addressing climate change in cities through nature-based solutions. Cases beyond Europe in the Urban Nature Atlas. Policy brief prepared for the British Academy. Vienna: Department of Environmental Sciences and Policy, CEU.



# NBS benefits?

- Urban NBS deliver multiple benefits; the ownership of these benefits is scattered between different actors
- Leads to 2 coordination problems:
  1. Valuation of **multiple benefits** (budget often earmarked for one benefit)
  2. Collaboration between **multiple actors** to co-fund and each reap benefits
- Calls for an **integrative business case** – of benefits and actors
- Need for **investment template** that recognizes value of relevant benefits





# Urban Nature Explorer



Sustainability  
challenges

Sustainability  
goals and  
targets

Nature Based  
Solutions

**Impacts!**



## Urban heat island effect



### NATURE-BASED SOLUTIONS

#### Nature on buildings

- Green roof
- Green courtyard
- Green wall

#### Blue areas

#### Water management

#### Grassy areas

#### Urban parks

#### Street trees

#### Biodiversity support

### AMENITIES

#### Physical activity

#### Education

#### Recreation



### YOUR PROGRESS

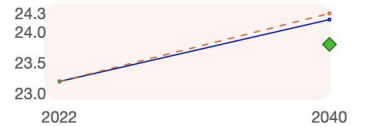
Implementation period: 2022-2040

#### AVAILABLE BUDGET

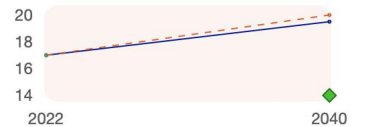
**1668148 €** 2000000

#### YOUR IMPACT

**Average daily temperature during summer** **23.1 °C**



**Number of hot days per year** **16.5 days**



#### STAKEHOLDER SATISFACTION

**0** 5

#### TOTAL ECONOMIC VALUE

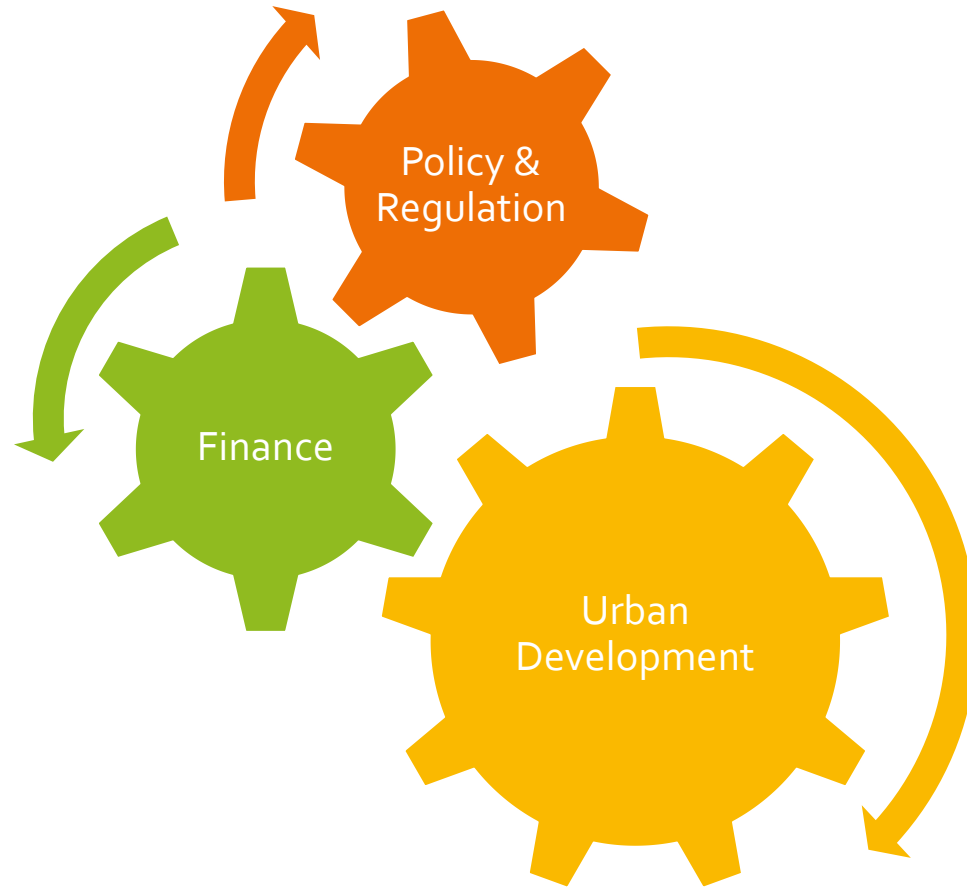
**419775.4 €**

**OVERALL SCORE** **7 / 100**

**Finish your plan**



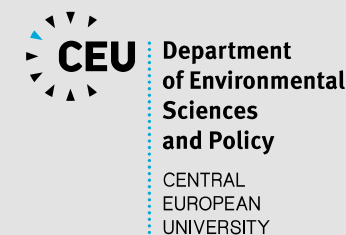
# The conditions for shifting gears



- Urban planning and development has key role in shifting gears for nature in cities
- New regulation that supports using nature based solutions
- Potential to work with partners in urban development & finance to recognise value of nature
- Entrench nature as essential part of infrastructure in urban culture and politics



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[www.naturvation.eu](http://www.naturvation.eu)

[www.una.city](http://www.una.city)

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Malmö stad

PBL Netherlands Environmental Assessment Agency

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