

# HELSUS SCIENCE-POLICY FORUM ON NATURE-BASED SOLUTIONS SUPPORTING CLIMATE AND BIODIVERSITY TARGETS

Prof. Christopher Raymond  
Helsinki Institute of Sustainability Science, UH

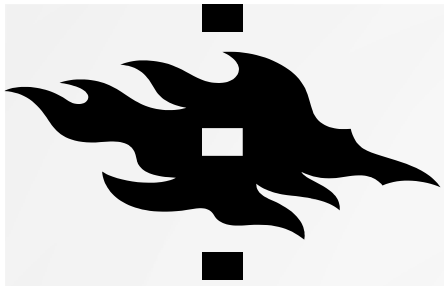




# AIMS OF THE FORUM

- to increase interaction and dialogue between researchers and policy-makers
- to develop ideas on how nature-based solutions (NBSs) could be integrated in different policy development processes
- to increase the societal impact of research and
- to enhance finding potential research collaborators





# SETTING THE SCENE ON NBS IN SCIENCE-POLICY RESEARCH ACROSS THE EU

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Helsinki Institute of Sustainability Science, UH



# RESCUING BIODIVERSITY: THE GREATEST CHALLENGES OF OUR TIME

Trends in nature's contributions to people (1960-2016 across Europe and Central Asia.

IPBES (2018): Summary for policymakers of the regional assessment report on biodiversity and ecosystem services for Europe and Central Asia of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.

		WE	CE	EE	CA	ECA
REGULATING NATURE'S CONTRIBUTIONS TO PEOPLE	Habitat maintenance	↘	↘	↘	☐	↘
	Pollination	↘	↘	↘	☐	↘
	Regulation of air quality	↕	↗	↗	↕	↗
	Regulation of climate	↗	↕	↗	↕	↕
	Regulation of ocean acidification	☐	☐	☐	☐	↕
	Regulation of freshwater quantity	↘	↕	↘	↘	↘
	Regulation of freshwater quality	↘	↘	↘	☐	↘
	Formation and protection of soils	↘	↘	↘	↘	↘
	Regulation of coastal and fluvial floods	↕	↘	↘	↕	↘
	Regulation of organisms (removal of carcasses)	↗	↕	↗	↗	↗
MATERIAL NATURE'S CONTRIBUTIONS TO PEOPLE	Food	↗	↗	↗	↗	↗
	Biomass-based fuels	↗	→	→	☐	↗
	Materials (wood and cotton)	→	→	→	→	→
NON-MATERIAL NATURE'S CONTRIBUTIONS TO PEOPLE	Learning derived from indigenous and local knowledge	↘	↘	↘	↘	↘
	Physical and psychological experiences	↕	↘	↘	☐	↕
	Supporting identities	☐	☐	☐	☐	↕

↗ Increase

→ Stable

Lack of evidence

↘ Decrease

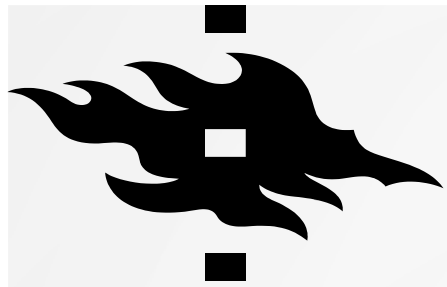
Variable

Confidence level

➔ Well established

➔ Established but incomplete/unresolved

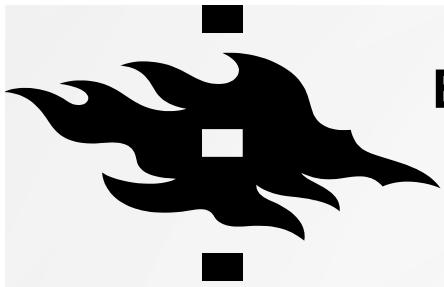
➔ Inconclusive



# EU BIODIVERSITY STRATEGY TO 2030

“The promotion of healthy ecosystems, green infrastructure and **nature-based solutions** should be systematically integrated into urban planning, including in public spaces, infrastructure, and the design of buildings and their surroundings.”

“To bring nature back to cities and reward community action, the Commission calls on European cities of at least 20,000 inhabitants to develop ambitious **Urban Greening Plans** by the end of 2021.”

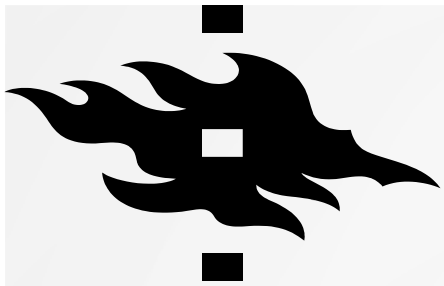


# EU URBAN GREENING PLATFORM UNDER A NEW 'GREEN CITY ACCORD'

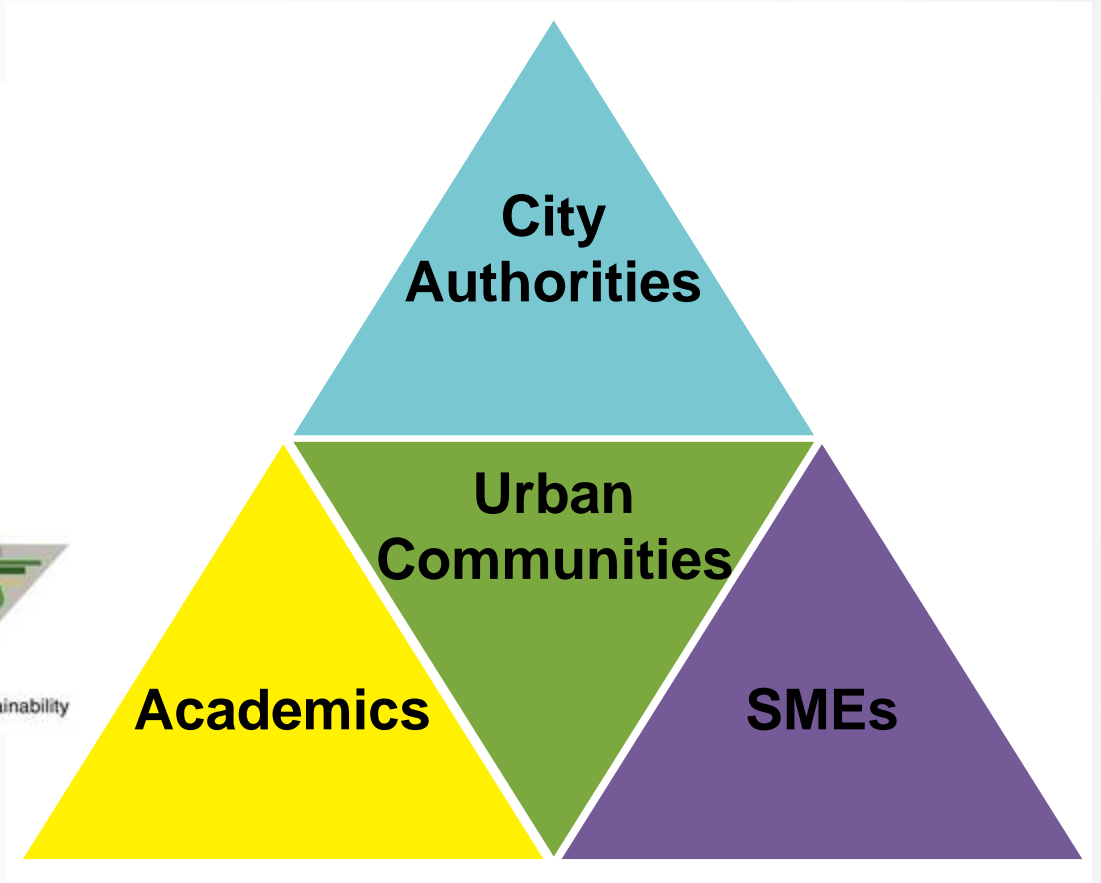
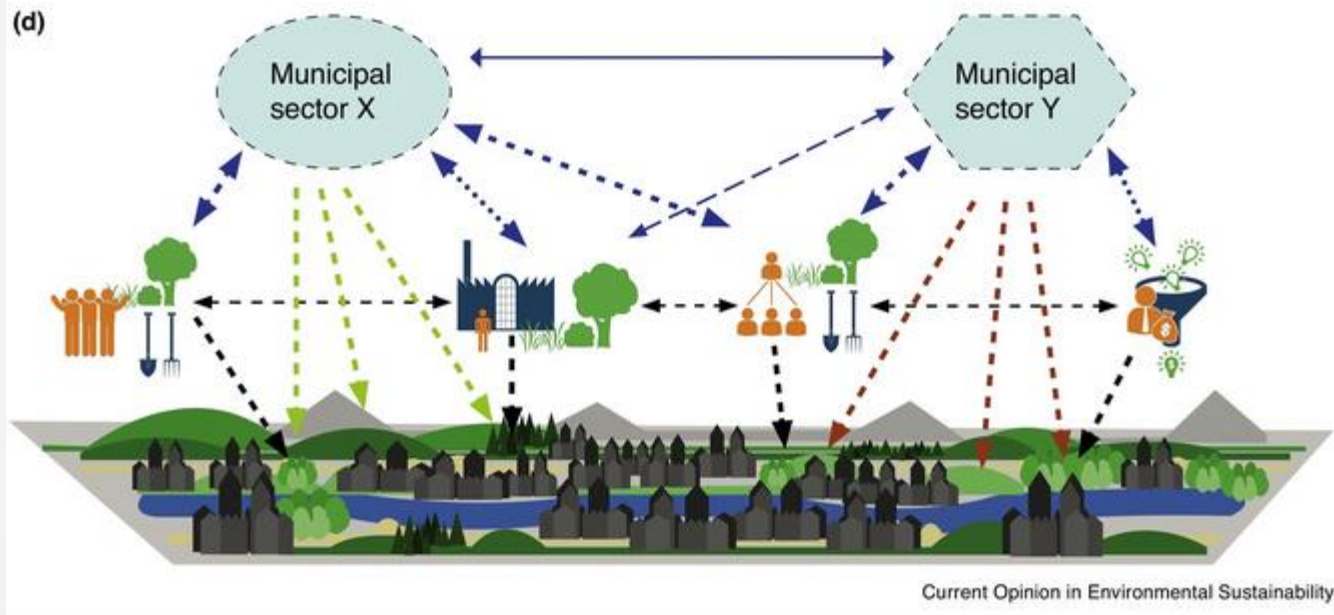
Mobilised by the City of Mayors.

The Accord focuses on mobilising cities to step up their ambitions to achieve cleaner and healthier environments, thereby improving the quality of life of citizens.





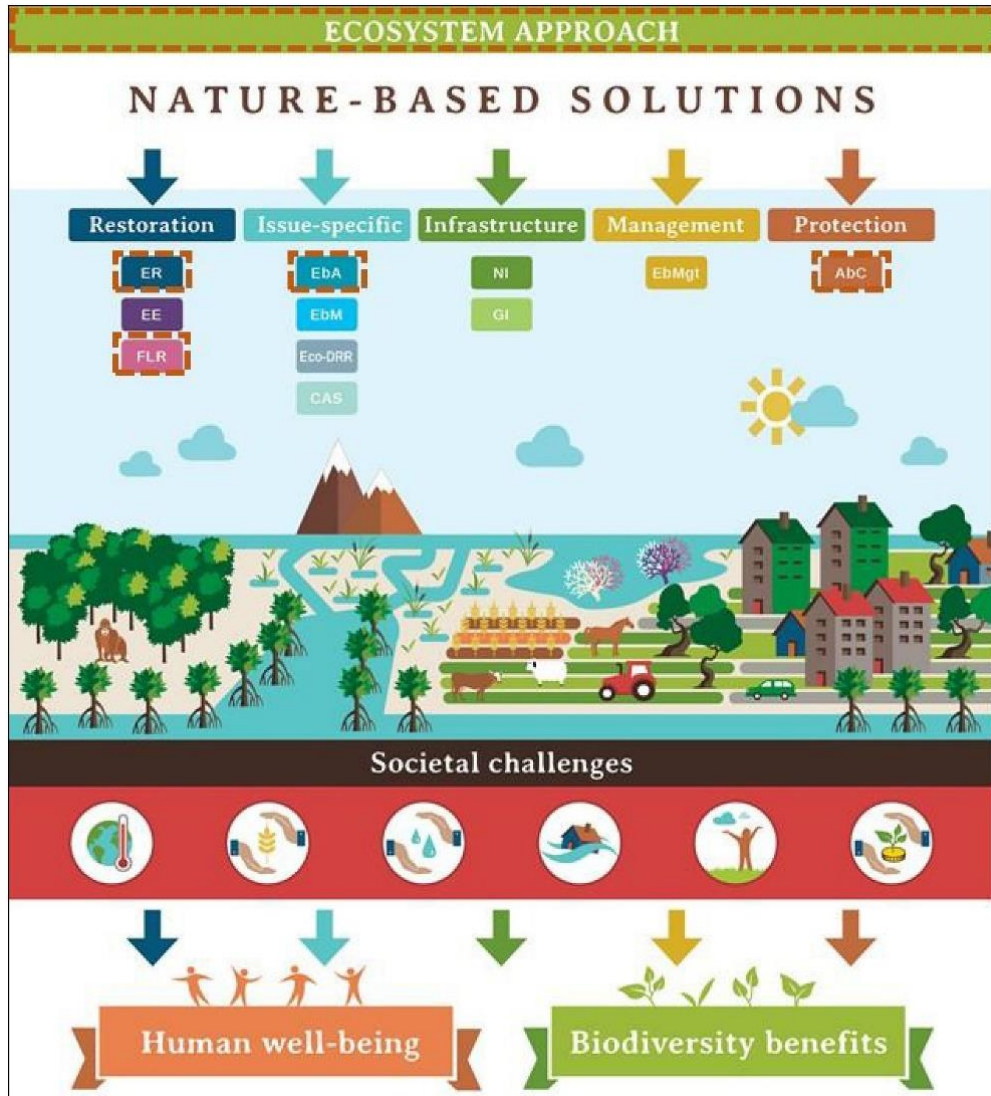
# NEW BIODIVERSITY GOVERNANCE FRAMEWORKS = KEY TO TRANSFORMATIVE CHANGE



Buijs et al. (2016) Active citizenship for urban green infrastructure  
<https://doi.org/10.1016/j.cosust.2017.01.002>

# WHAT ARE 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 (European Commission, 2016).

Emphasis on:

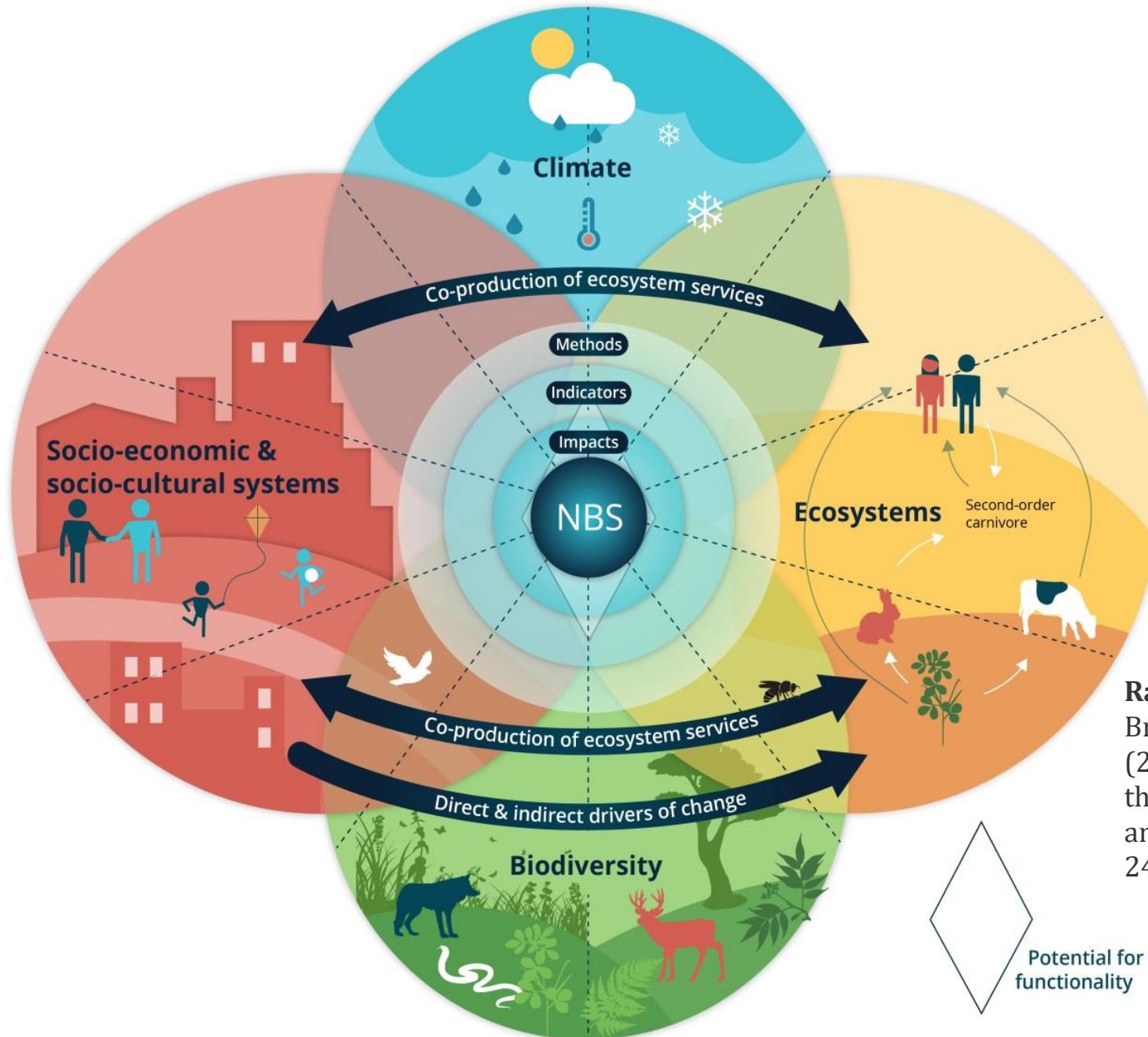
- Locally adapted, resource-efficient and systemic interventions (European Commission, 2016)
- Provision of benefits for human well-being and biodiversity (IUCN., 2016; Cohen-Shacham et al. 2019).

<https://doi.org/10.1016/j.envsci.2019.04.014>

# NBS have the potential to respond to multiple urban challenges



**Raymond, C.M.**, Frantzeskaki, N., Kabisch, N., Berry, P., Breil, M., Nita, M.R., Geneletti, D., and Calfapietra, C., (2017), A framework for assessing and implementing the co-benefits of nature-based solutions in urban areas, *Environmental Science and Policy*, 77, 15-24, [doi.org/10.1016/j.envsci.2017.07.008](https://doi.org/10.1016/j.envsci.2017.07.008)



**Raymond, C.M.,** Frantzeskaki, N., Kabisch, N., Berry, P., Breil, M., Nita, M.R., Geneletti, D., and Calfapietra, C., (2017), A framework for assessing and implementing the co-benefits of nature-based solutions in urban areas, **Environmental Science and Policy**, 77, 15-24, [doi.org/10.1016/j.envsci.2017.07.008](https://doi.org/10.1016/j.envsci.2017.07.008)

# What do nature-based solutions look like?



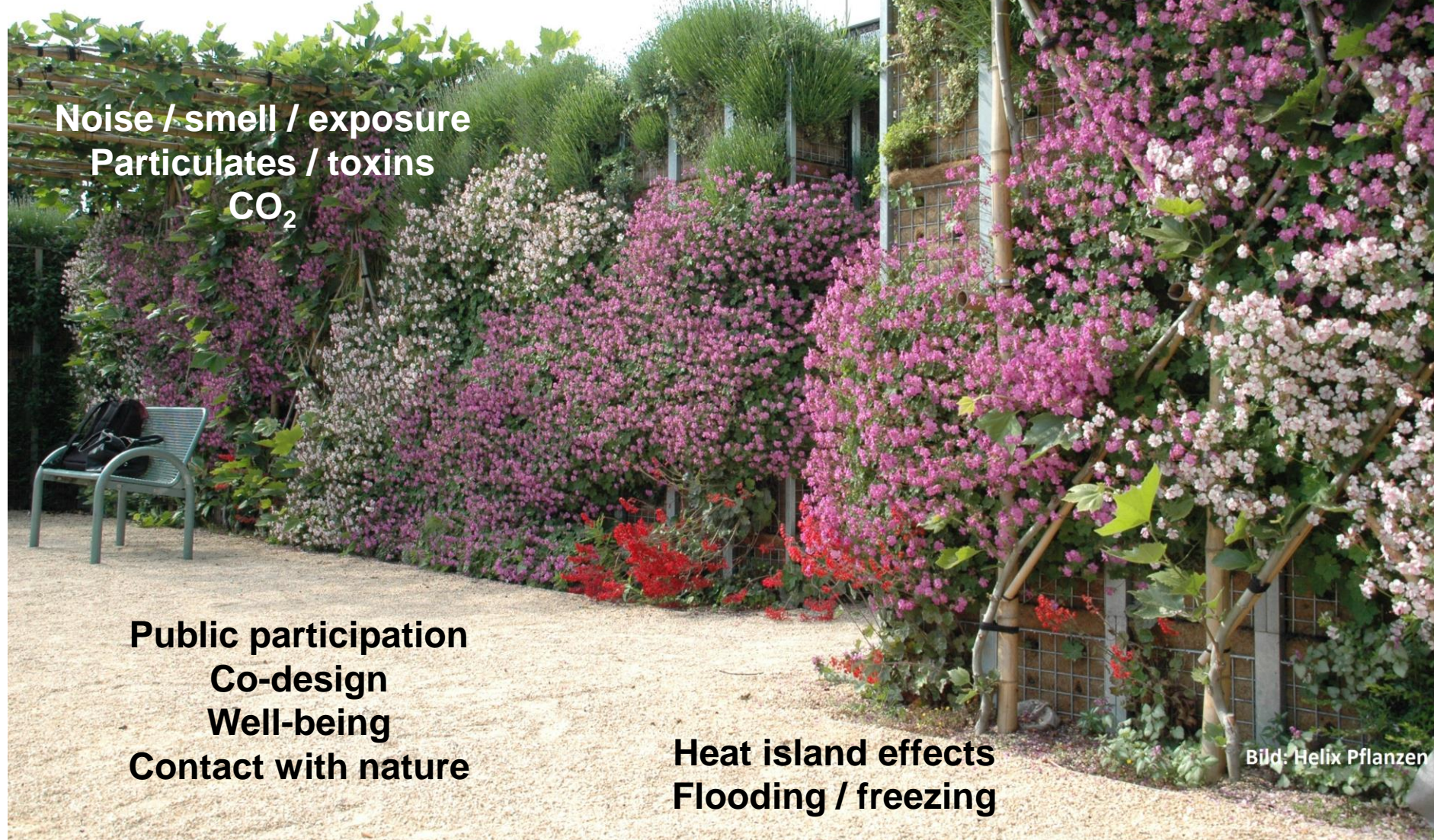
## Co-benefits



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 730222

# Nature-based climate innovation

Lack of biodiversity



Noise / smell / exposure  
Particulates / toxins  
CO<sub>2</sub>

Public participation  
Co-design  
Well-being  
Contact with nature

Heat island effects  
Flooding / freezing

Bild: Helix Pflanzen



Bringing cities to life,  
Bringing life into cities.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 730222



Connecting Nature



Trinity College Dublin

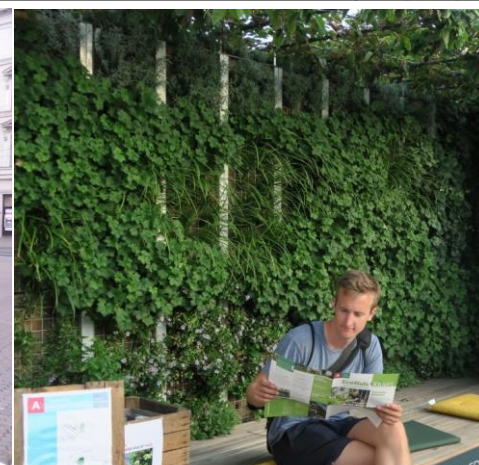
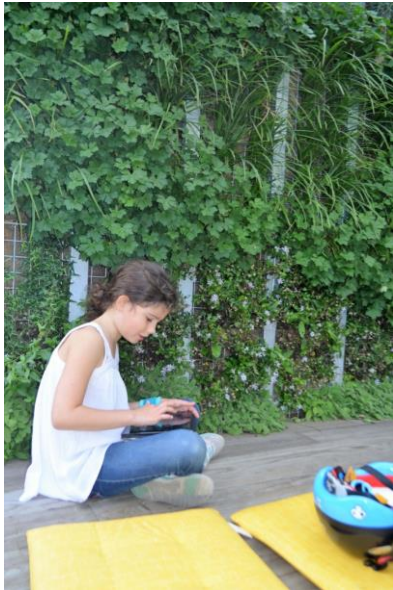
The University of Dublin

TANGENT 28  
Trinity's Innovation Festival



TURAS

Bringing cities to life,  
Bringing life into cities.



Awareness



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 730222



# Living roof experiments (no longer 'green' roof) – co-benefits





Bringing cities to life,  
Bringing life into cities.

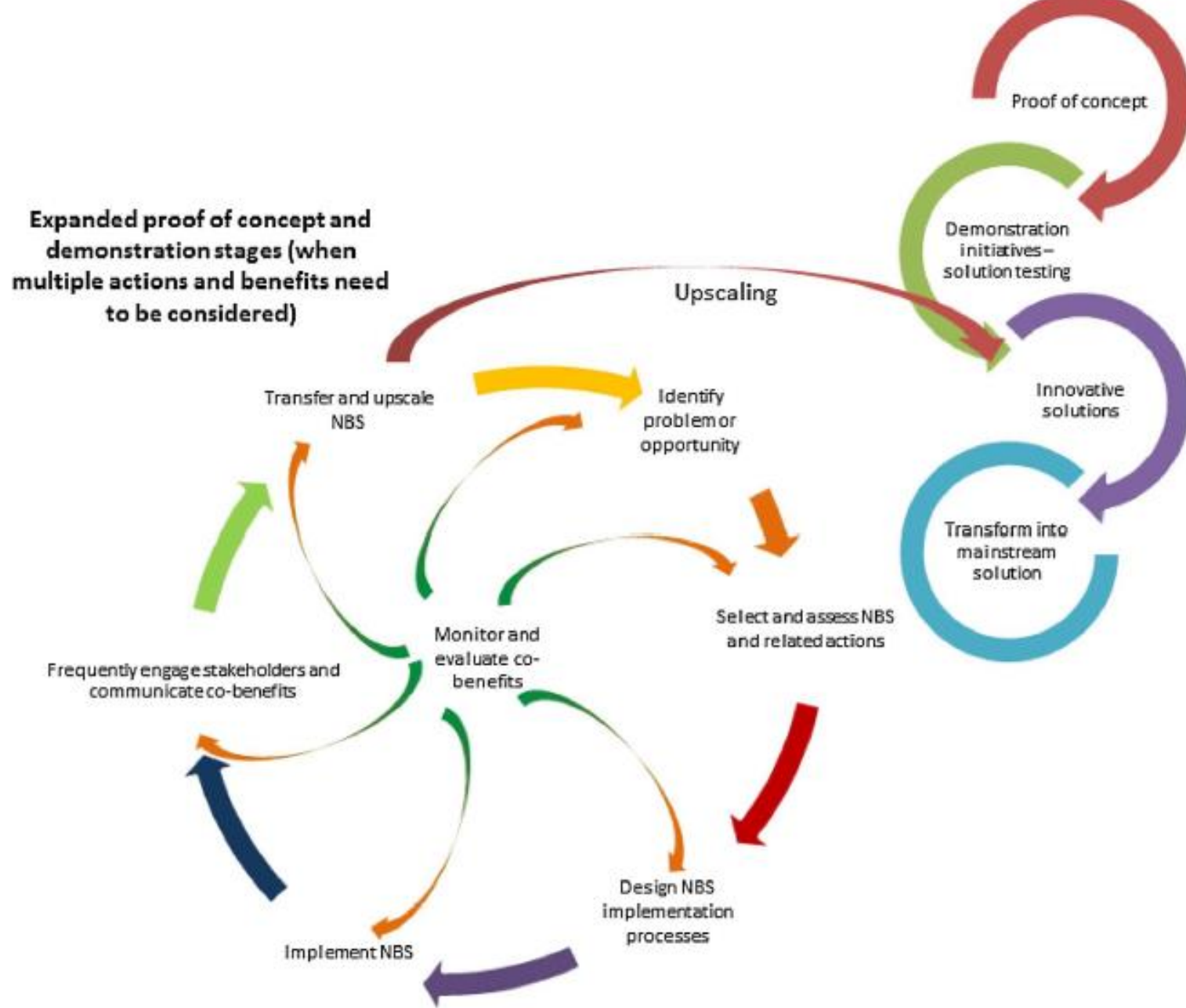
# Biosolar roof (London Olympic Site)



Co-locating technologies



# Science-policy interface plays a crucial role in NBS innovation



# Policy needs for implementing nature-based solutions

## Knowledge needs

- systems' thinking
- understand social innovation
- monitoring and evaluating frameworks

## Skills

- collaboration
- advocacy

## Partnerships

- within municipality
- with social innovation initiatives

**Genk,  
Belgium**

- monitoring and evaluation methods and frameworks
- green space management
- social innovation

- entrepreneurship
- analytical skills for selecting type of NBS
- technical skills
- collaboration

- communities in flood prone areas
- within municipality

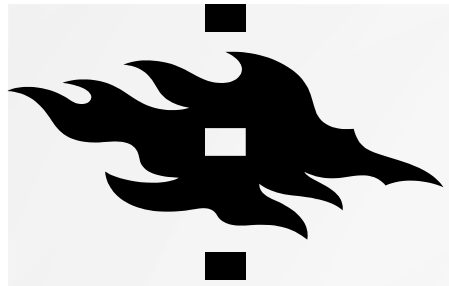
**Glasgow,  
Scotland/UK**

- impact and fitness of NBS
- procurement
- multifunctionality of NBS
- types of NBS

- collaboration
- engagement with grassroots
- advocacy

- citizens and grassroots

**Poznan  
Polland**



# NBS AT HELSUS

# HELSUS URBARIA

HELSINKI INSTITUTE OF SUSTAINABILITY SCIENCE

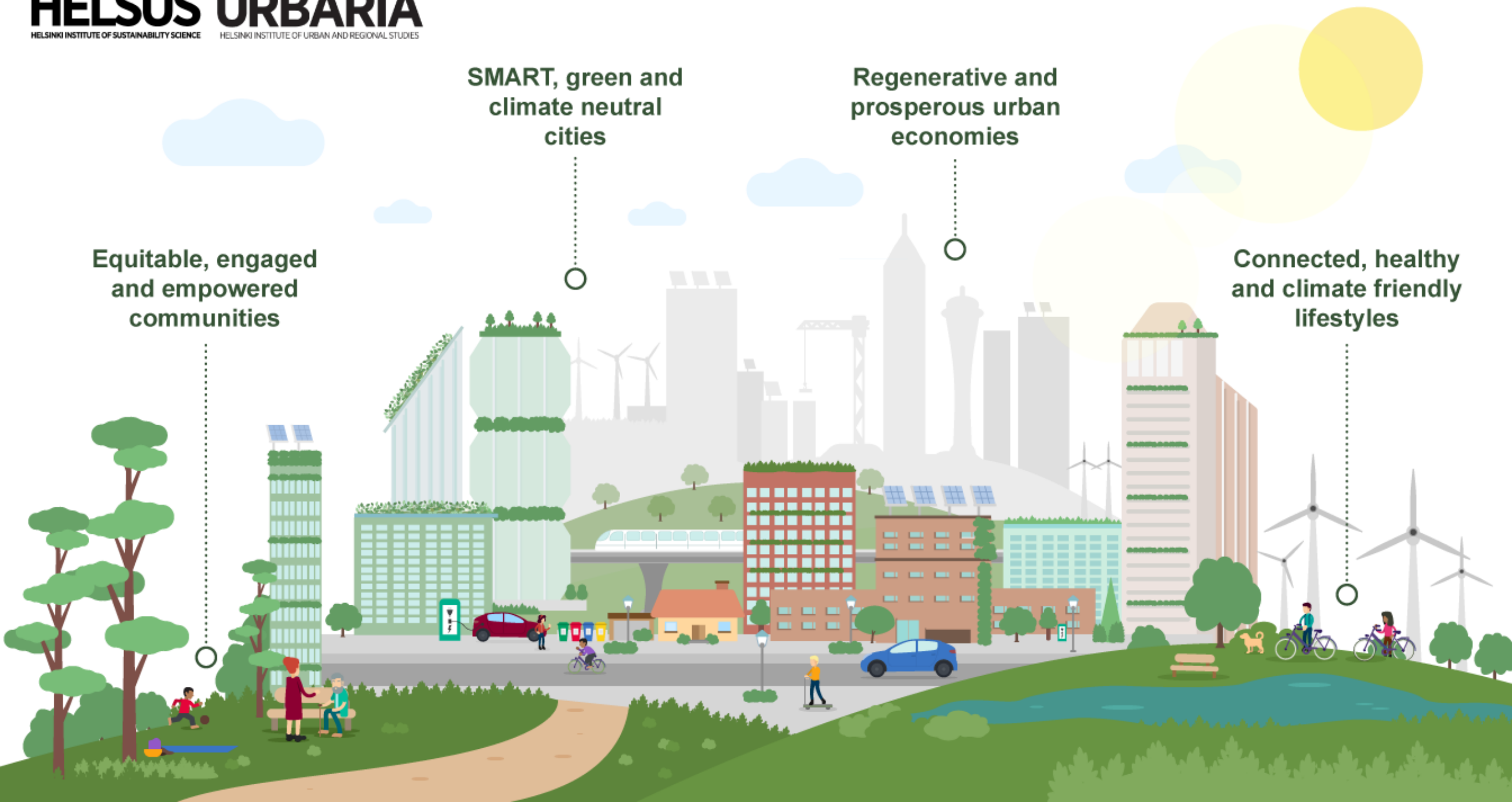
HELSINKI INSTITUTE OF URBAN AND REGIONAL STUDIES

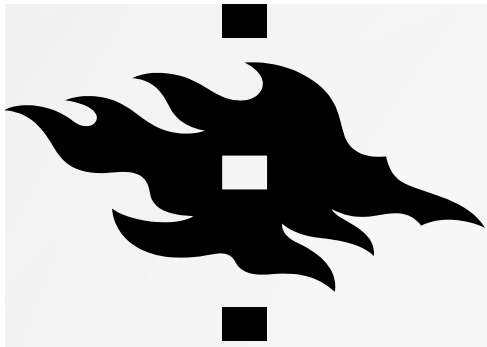
Equitable, engaged  
and empowered  
communities

SMART, green and  
climate neutral  
cities

Regenerative and  
prosperous urban  
economies

Connected, healthy  
and climate friendly  
lifestyles





# NBS PROJECTS ACROSS THE EU



# INVESTING IN NATURE-BASED SOLUTIONS!

## HORIZON 2020 ACTIONS:

### Connecting Nature

- UNaLab
- UrbanGreenUp
- GrowGreen
- ProGfreg (regeneration)
- PHUSICOS (mountains)
- URBINAT (regeneration)
- Reconnect (rural / water)
- Operandum (hydrology)
- Nature4Cities (platform)
- CLEARINGHOUSE (EFI)
- RUGGEDISED (lighthouse)
- ReGreen (labs)
- EdiCitNet
- FutureMARES (Marine)
- Ponderful (ponds as NBS)
- MacOBioS (coastal)

### CleverCities

- CONEXUS
- INTERLACE
- EuPOLIS
- GO GREEN ROUTES
- IN-HABIT
- VARCITIES

### **EC Cluster Taskforces**

1. Knowledge/data
2. Impact/evaluation
3. Business/finance
4. Communication
5. Hydrology?
6. Co-creation/governance
7. Global?

### **Active Horizon 2020 NBS projects (2017-2024):**

**>485 partners**  
**>160 cities**  
**>€280m and growing!**

## Other Horizon 2020 Actions:

- Eclipse CSA (policy)
- BiodivERsA ERA-NET (cofund)
- NaturVation R&I (atlas) completed
- NAIAD R&I (insurance) completed
- ThinkNature CSA completed
- NetworkNature CSA
- ReNature (CSA) Malta
- WeValueNature (CSA nat. cap.)
- ACTonNBS (Climate KIC)

### **Also:**

- Encore (nat. cap)
- UrbanGaia (Ecosystem services)
- Oxford (policy platform)
- Natura (network of networks) NSF
- Building with Nature (design)
- Viva Plan (Nordic)

### Platforms

Network Nature

Oppla  
(Marketplace)

Nature-based enterprise  
(Platform)

# URBAN NATURE ATLAS

## ABOUT THE ATLAS

Welcome to the Urban Nature Atlas! It contains 1000 examples of Nature-Based Solutions from across 100 European cities.

Use the Quick Search by icon (to the right of the map) or the Advanced Search (below the map) to identify the projects fitting your interests.

The map will be updated to display the results of your search, and a list of all relevant projects is displayed below. Click on the title of projects for further information.



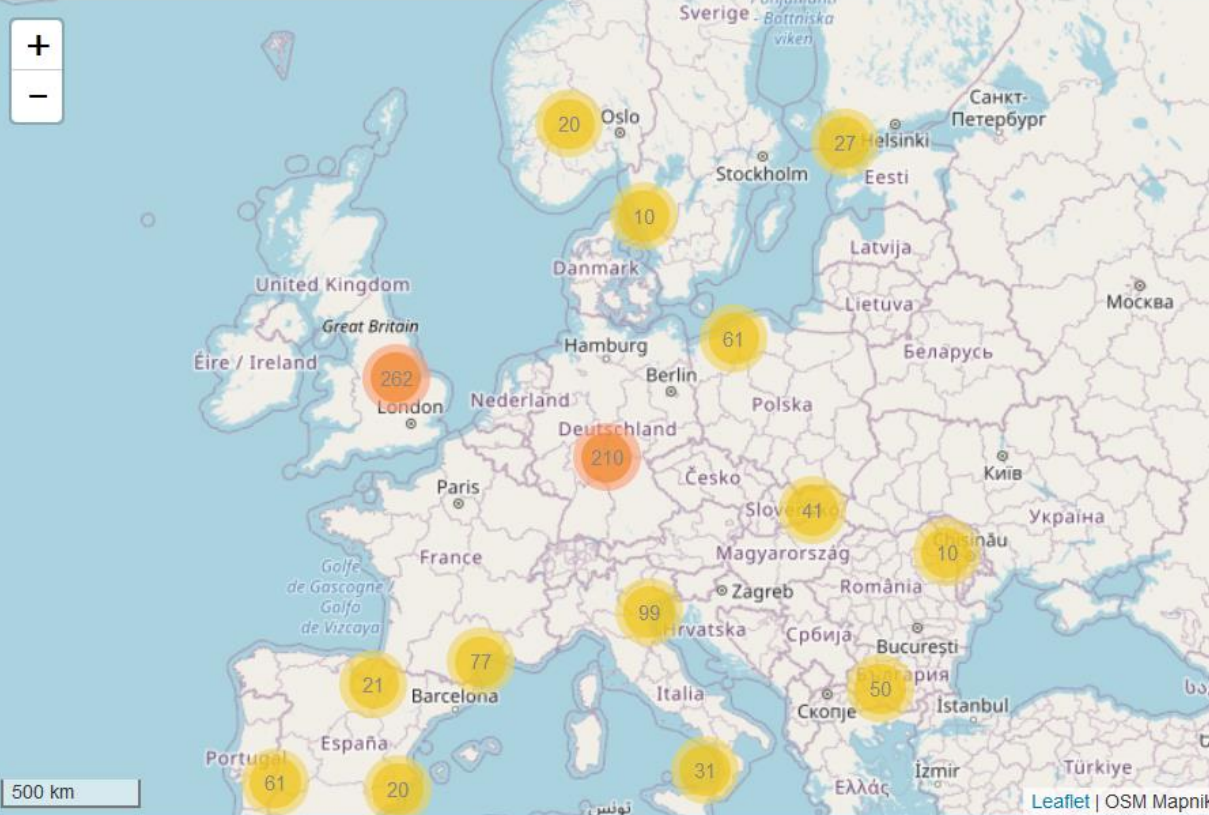
FAQ



Methodology



Results



## QUICK SEARCH BY ICON

Select one or multiple icons to launch a search.

### KEY CHALLENGES



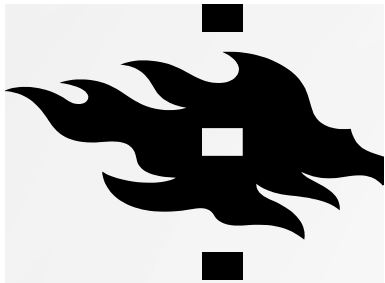
### URBAN SETTING



### PROJECT COST



<https://naturvation.eu/atlas>



## SEARCH RESULTS

Displaying 1 - 10 of 10 matching NBS projects

### [Kuninkaantammi Ecological District](#), Helsinki / Helsingfors, Finland

Kuninkaantammi is a new district that will be built to a dense, urban design and consistent with the ecological, experiential and community requirements of modern housing. It will become a climate smart neighbourhood for 5,000 inhabitants. Kuninkaantammi will be a pilot project for storm water runoff management in Helsinki using green infrastructure. The construction is ongoing (2013-2030) (Ref 1, 2). [Read more](#)



### [Vuosaari Landfill Restoration](#), Helsinki / Helsingfors, Finland

The unused Vuosaari landfill hill has been transformed into a natural area where now domestic plants grow in meadows and rocky conditions. The area is now also used for recreational, educational and scientific purposes (Ref 1, 2) [Read more](#)



### [CITYWATER: Biofiltration At Maunulanpuisto Park](#), Helsinki / Helsingfors, Finland

As part of the EU Life+ CITYWATER project (3 cities), a sustainable storm water management solution based on biofiltration was realised in Maunulanpuisto Park in

## ADVANCED SEARCH

Free search

Country

City

Starting year

Challenges addressed

Urban setting

Project cost

Initiating organisation

Management set-up

Type of financing sources

Monitoring process in place

Citizens involved in monitoring



# The Connecting Nature Enterprise Platform

## Connects :

**Suppliers** of nature  
with **buyers** of  
nature

Nature-based  
**enterprises** with  
**financing**

**Innovators** with  
those seeking  
**inspiration**

**Policy-makers** with  
**practitioners**

**Everyone** with the  
latest nature-based  
**research.**

\* **Nature-based enterprises** (NBEs) are defined as enterprises, engaged in economic activity, that use nature sustainably as a core element of their product/service offering for the planning, delivery and/or stewardship of nature-based solutions. Nature-based enterprises differ from **nature-based organisations** who deliver nature-based products and services but not as a core economic activity e.g. parks department, conservation charity etc.

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

Post Opportunity

Post Challenge



Name

## The Quantum Biodynamic Education, Research and Training facility.

Description

Project Description: Develop spaces/ places (inside 3yrs) within a sustainably productive aquatic and mixed agroforestry setting for; Alternative energy production, Research, Demonstration, Event...

Location

Brazil, Brasília

Web

<https://qatuan.com.br/>

[View Opportunity](#)
[Respond to Opportunity](#)


Name

## Grant for hiring unemployed persons by enterprises linked to the blue/green economy

Description

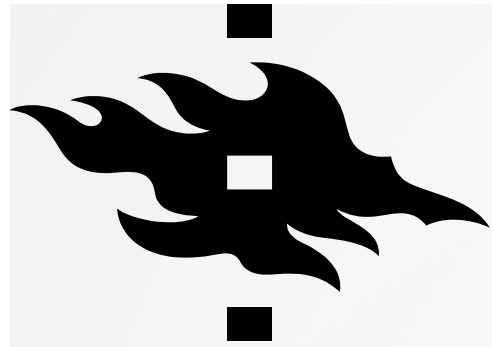
Are you an enterprise or start-up based in Spain, working in the fields of green and blue economy? The Biodiversity Foundation offers subsidies for hiring full-time unemployed persons, for a minimu...

Location

Spain, Madrid

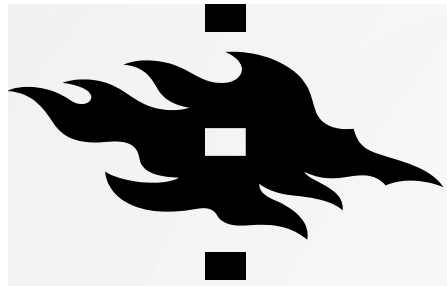
Web

<https://fundacion-biodiversidad.es/es/convocatorias/convocatorias->



# KEY MESSAGES

- Nature-based solutions offer systemic solutions to urban and regional challenges
- Focus on co-benefits and costs
- Enormous investments in NBS over the past 5 years, and this will continue under Horizon Europe
- Established platforms for guiding science and policy
- Monitoring and evaluation has a key role in NBS implementation – active urban experimentation
- Multiple knowledge gaps at the science-policy interface on NBS – exploring today



# **INTRODUCING**

# **DR. APN (SANDER) VAN DER JAGT**

WAGENINGEN UNIVERSITY & RESEARCH

**Best practices of nature-based solutions in policy and planning**