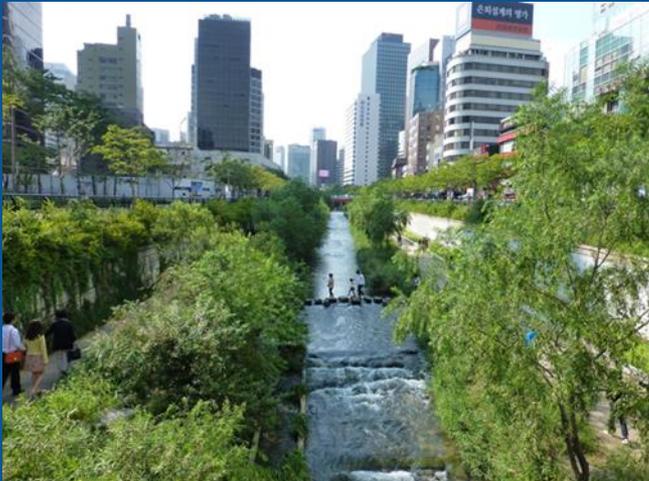




European Union Policy on nature-based solutions and green infrastructure



European Commission
DG Research and Innovation

Marco Fritz

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World Green Infrastructure Congress WGIC on 20-22 June
2017 in Berlin



Horizontally
promoted in e.g.
cohesion policy
(2014-2020)

- Towards better environmental options and flood management (2009)
- Water blueprint & natural water retention measures (2012)
- The EU Adaptation Strategy (2013)
- The EU Green Infrastructure Strategy (2013)
- Policy document on NWRM (2014)
- Towards a research agenda for Nature-based solutions (2014)
- Sendai framework for DRR (2015)
- The Urban agenda for the EU (2016)
- Action Plan for Nature, People and the Economy (2017)

EU policies on ecosystem-based approaches

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Commission



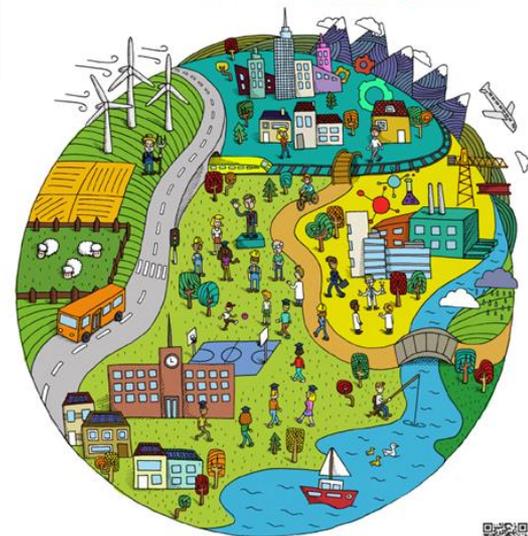
| Policy | Ecosystem-based initiative | Information mechanism |
|-------------------------|----------------------------------|-----------------------|
| Climate adaptation | Ecosystem-based adaptation | ClimateAdapt |
| Biodiversity | Green Infrastructure | BISE |
| Water retention | Natural water retention measures | NWRM platform |
| Disaster risk | Eco-DRR | DRMKC, PEDRR |
| Research and innovation | Nature-based solutions | Oppla, ThinkNature |



EU Policy Context on Cities

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**EUROPEAN
CAPITAL OF
INNOVATION** A place to bring
ideas to life



Urban Agenda for the EU – DG REGIO

<http://urbanagendaforthe.eu/>
EU Urban Partnerships

<http://www.uia-initiative.eu/>
Urban Innovative Actions

Joint Programming Initiative Urban Europe – DG RTD

<http://jpi-urbaneurope.eu/>

EU Member State initiative on Systemic Urban Innovation. Sustainable Research and Innovation Agenda: 'Transition towards sustainable and liveable urban futures'

Innovating Cities – Cities as actors of innovation & Systemic urban innovation

https://ec.europa.eu/research/environment/index.cfm?pg=future_cities

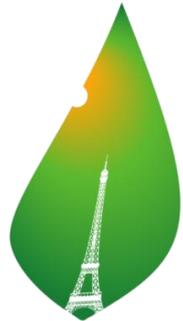
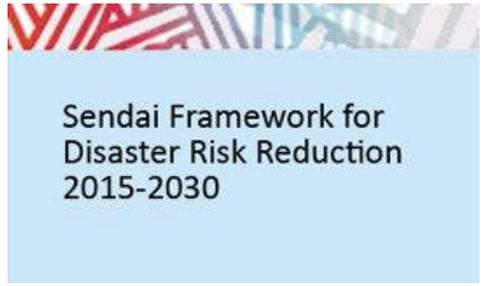
European Capital of Innovation Award – iCapital

<http://ec.europa.eu/icapital>

Deadline 21 June 2017

International policies working with GI/NBS

European Commission



PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21·CMP11



Research and Innovation

#NewUrbanAgenda
#InnovatingCities

“We will support science, research, and innovation, including a focus on social, technological, digital and **nature-based innovation**, robust science-policy interfaces in urban and territorial planning and policy formulation” [...]

Quito Declaration on sustainable cities and human settlements for all - New Urban Agenda

United Nations Conference on Housing and Sustainable Urban Development - Habitat III - October 2016



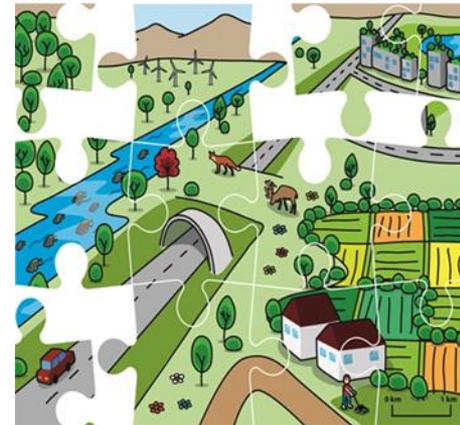
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All of these initiatives are becoming interlinked

What is Green Infrastructure?

The structure enabling healthy ecosystems to deliver their multiple, valuable, economically important goods and services to people, such as: clean water and air, carbon storage, pollination etc., mitigation and adaptation to climate change

Spatial and functional structure delivering nature benefits to people



What are Nature-based solutions?

Innovative solutions that use and deploy the properties of natural ecosystems and the services that they provides; based on nature for economic growth, creating jobs and enhancing our well-being;

Examples might be green and blue infrastructure, green roofs and vertical walls, natural water retention measures, salt marshes and dunes, floodplains ...



Working with nature for the benefits of people

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Green Infrastructure (GI) [the spatial-functional structure]

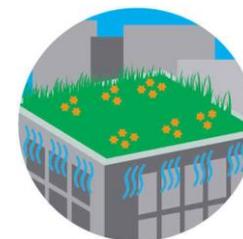
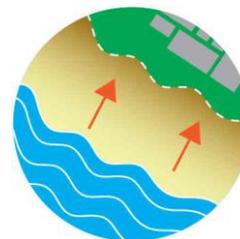
Green Infrastructure is defined as a strategically planned **network** of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services. It incorporates green spaces (or blue if aquatic ecosystems are concerned) and other physical features in terrestrial (including coastal) and marine areas. On land, GI is present in rural and urban settings.

http://ec.europa.eu/environment/nature/ecosystems/index_en.htm

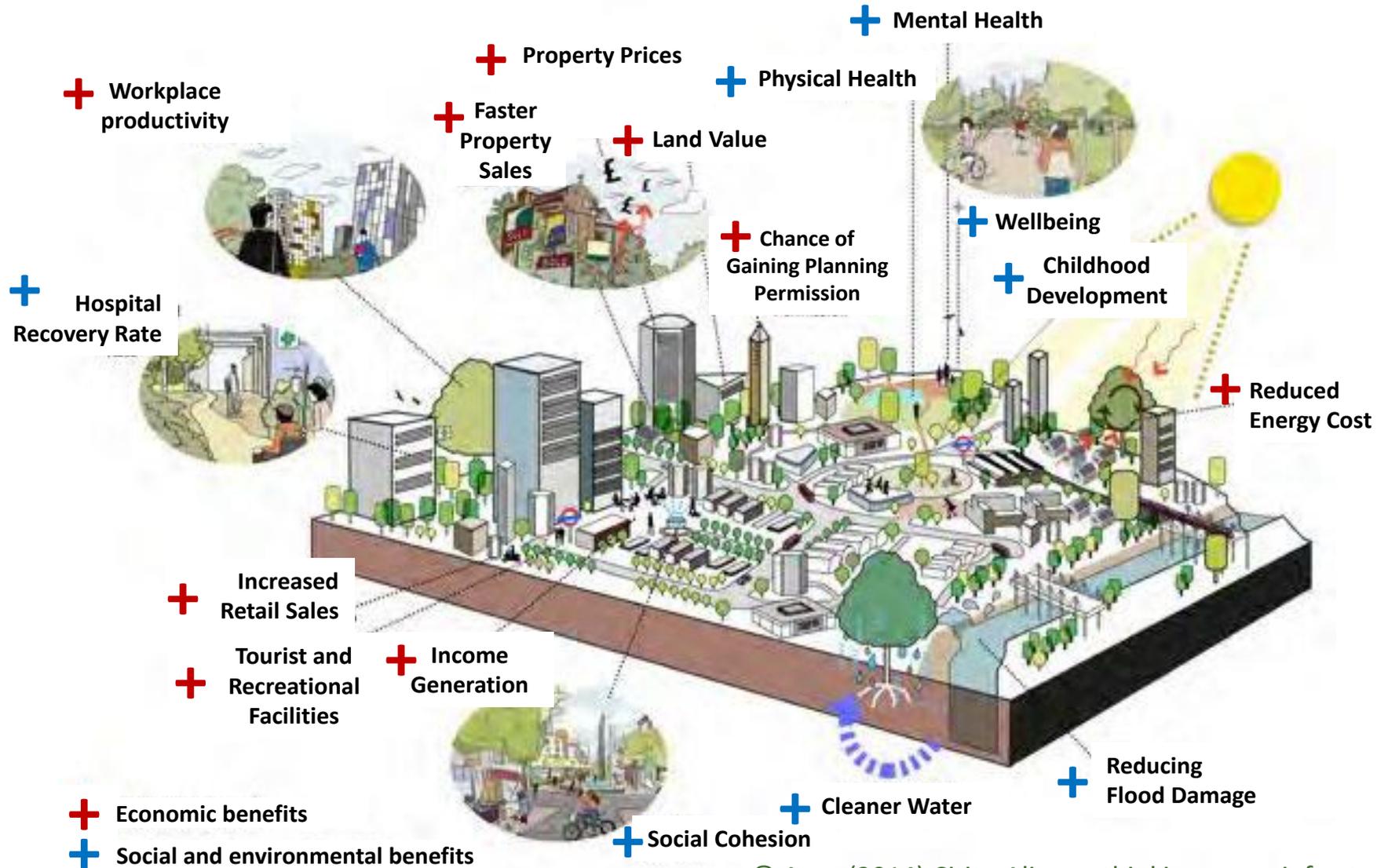
Nature-Based Solutions (NBS) [the innovative approach]

Nature-based solutions to societal challenges are solutions that are inspired and supported by nature, which are cost-effective, **simultaneously** provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through **locally** adapted, resource-efficient and **systemic interventions**.

https://ec.europa.eu/research/environment/index_en.cfm?pg=nature-based-solutions



BENEFITS OF RENATURING CITIES: Framework conditions for engineering buildings



The Commission gives

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Commission

Horizon 2020 calls on Nature-based solutions in 2016-17 (app. 130 mio EUR). Continues in Work Programme 2018-20

- *Demonstrating innovative nature-based solutions in cities: NBS for **climate and water resilience in cities and urban regeneration** (SCC-02-2016-2017)*
- *New governance, business, financing models and economic impact assessment **tools** for sustainable cities with nature-based solutions (urban re-naturing) (SCC-03-2016)*
- *Operationalising **insurance value** of ecosystems (SC5-09-2016)*
- *Multi-stakeholder **dialogue platform** to promote innovation with nature to address societal challenges (SC5-10-2016)*
- *Large-scale demonstrators on **nature-based solutions for hydro-meteorological risk reduction** (SC5-08-2017)*

The Commission wants

Results of funding should (demonstration projects):

- *Combine technological, organisational, societal, cultural and behavioural innovation, projects to be co-designed, co-developed and co-implemented in a trans-disciplinary, multi-stakeholder and participatory context.*
- *Provide evidence about cost-effectiveness of innovative NBS and longer-term social, economic, cultural and ecological benefits;*
- *Contribute to creation of a global market for these solutions (supporting both supply and demand)*
- *Position Europe as world leader in innovation through nature-based solutions for sustainable and resilient societies;*
- *Mobilise and leverage new investments to open up new business opportunities;*
- *Develop, test, demonstrate and upscale functionality of NBS;*
- *Use a twinning approach: frontrunner and follower cities > community of practice with different stage of experiences.*

Key for success

Innovative approaches

Integration from the beginning of initiative/action

Stakeholder involvement

Multiple benefits/trade-offs worked out

Clear rules

*Knowledge and arguments (in EUR, in n° of jobs)
available and accessible*

Political will



TARGETS

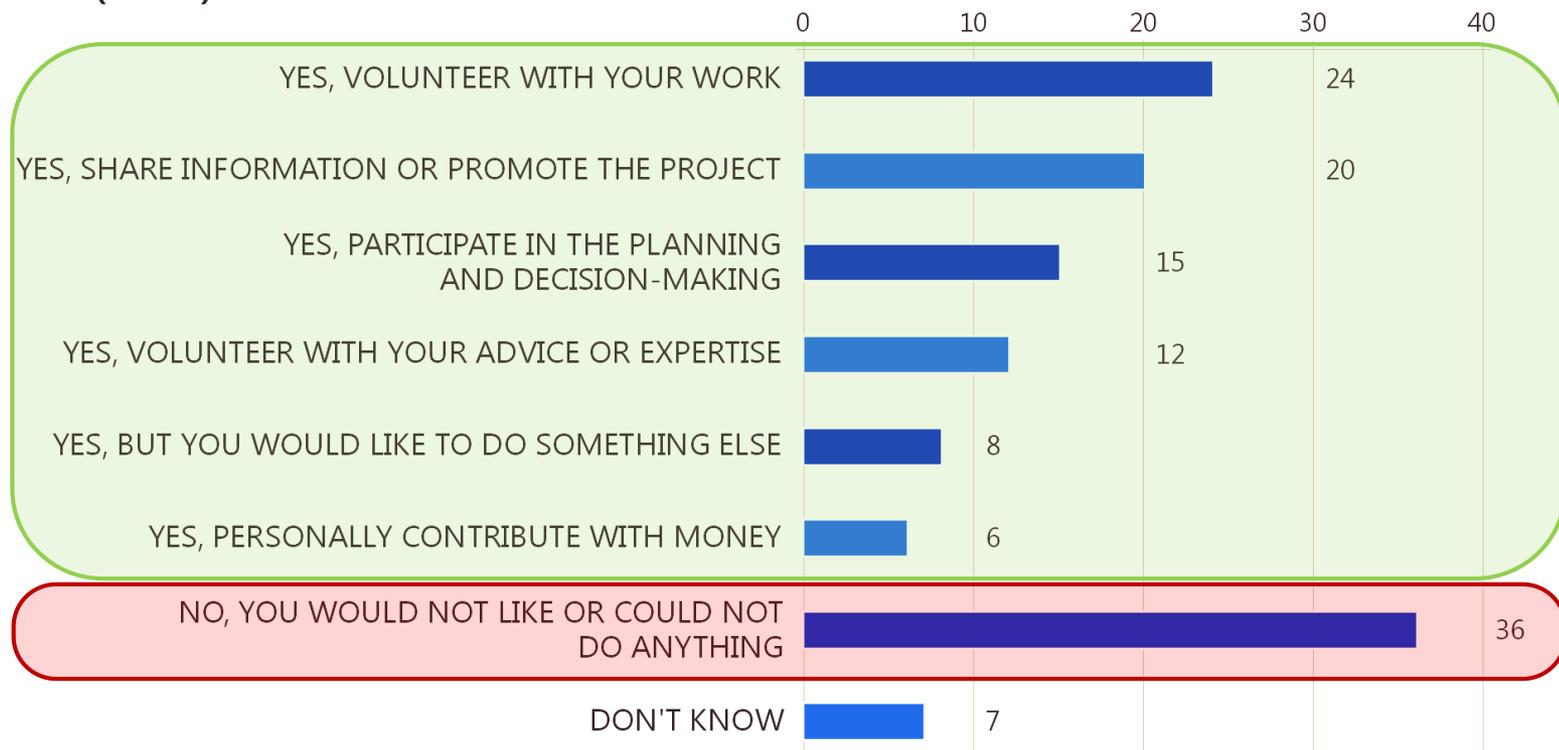
- 1. Enhance the framework conditions for nature-based solutions at EU policy level.*
- 2. Develop a European community of innovators.*
- 3. Provide the evidence and knowledge base for nature-based solutions.*
- 4. Advance the development, uptake and upscale of innovative nature-based solutions.*
- 5. Mainstream nature-based solutions within the international R&I agenda.*

Consultation upcoming

Special Eurobarometer 444: Citizens' view on nature-based solutions

Although just above a third (36%) of EU citizens say they could or would not contribute to implement nature-based solutions in the area where they live, a quarter (24%) would volunteer and a further 20% would promote the project

QD11 If a nature-based solution were to be implemented in the area where you live, would you like to do any of the following? (MULTIPLE ANSWERS POSSIBLE)
(% - EU)



Green Infrastructure Strategy

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Commission

'to promote the deployment of green infrastructure in the EU in urban and rural areas'.

Priority work streams:

- i) promoting green infrastructure in the main policy areas;*
- ii) improving information, strengthening the knowledge base and promoting innovation;*
- iii) improving access to finance;*
- iv) developing EU-level green infrastructure projects.*

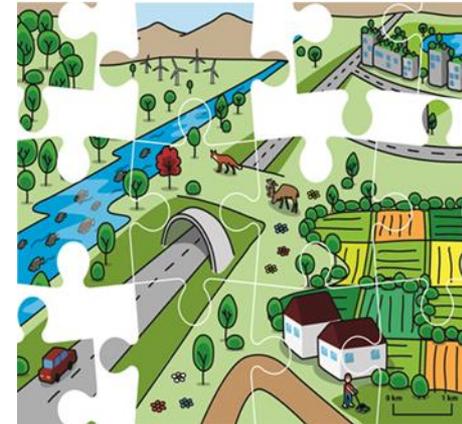
Policy context: EU Biodiversity strategy to 2020; 7th EAP (1st priority "to protect, conserve and enhance the Union's natural capital")



Urban Green Infrastructure

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- *Urban GI provides multiple solutions in cost-effective way*
- *EU develops knowledge on urban GI: a **flexible indicator framework** to support assessment of urban ecosystems condition and their services in cities across the EU:*
http://ec.europa.eu/environment/nature/knowledge/ecosystem_assessment/pdf/102.pdf
- *Next phase: testing it with volunteer cities (EnRoute project)*
- *EKLIPSE impact evaluation framework to support planning and evaluation of NBS*
http://www.eclipse-mechanism.eu/ongoing_processes





Current GI initiatives

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- Action Plan for Nature, People and the Economy: N2000 alone cannot deliver Nature Directives' objectives. GI measures needed, incl. to ensure coherence of N2000 network, whilst delivering multiple benefits through enhanced ecosystem services (April-June 2017)
- *By end 2017: Commission report on the review of implementation of the EU GI Strategy*
- *COM to develop guidance for further supporting EU-level Green Infrastructure projects that contribute to the goals of the Nature Directives, so as to enhance the delivery of essential ecosystem services throughout EU territory (by mid-2018).*



- **Structural Funds** (European Regional Development Fund & European Social Fund), **Cohesion Fund, European Maritime and Fisheries Fund, European Agricultural Fund for Rural Development, LIFE+, & research funding programmes (Horizon 2020)**
- **Funding for climate change mitigation and adaptation** could also provide significant co-benefits for GI/NBS
- **Natural Capital Financing Facility (NCFF)**

NBS/GI Example:



The Ruhr region: 5 million inhabitants with 11 big cities

Industrial decline. Huge social and economic problems. The river Emscher heavily affected by industrial activities - pollution, biodiversity loss and ecological fragmentation.

Large-scale reconversion of old industrial landscapes into Green Infrastructure: Emscher Landscape Park (covering 457 km²/400 projects) with 1 billion € investments into the restoration of green areas.

Second element: renewal of the Emscher river system (350 km ecological converted rivers /350 projects) with further 4.5 billion € green investments.

Direct employment effect 1.400 jobs/year. Additional production effects: 11,9 billion €, additional employment effects 3.700 jobs/year.

Fiscal effects app. 1,1 billion € tax revenue + 580 million social insurance.



The NBS case study exercise

3 already published, 26 more in preparation

[Barcelona](#)

[Lisbon](#)

[Ljubljana](#)

Nature-based Solutions Case Studies

EU Research and Innovation on Nature-Based Solutions (NBS) aim to position the EU as leader in 'Innovating with nature' for more sustainable and resilient societies. Nature-based solutions to societal challenges can be defined as living solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience and adapt to climate change.

This Research and Innovation agenda is implemented through Horizon 2020, the EU Framework Programme for Research and Innovation, but also through other means to enhance the awareness and engagement of end-users, stir the supply and demand towards the market and develop an EU-wide knowledge base on NBS.

Case Studies

The EU-wide knowledge base on NBS can certainly benefit from already existing examples across the EU. In fact, many European cities and regions have undertaken NBS-inspired actions to tackle a series of societal challenges through the provision of key ecosystem services.

This collection of case studies has been compiled by DG Research and Innovation at the European Commission from publicly available information and cross-checked by city administrations. It provides examples of the multiple benefits delivered by NBS. In doing so, it is a first step and a reference tool for the creation of an EU-wide NBS knowledge repository. This constitutes a tool for the dissemination of knowledge on NBS effectiveness (e.g. multiple benefits, returns of investment and development opportunities), which may in turn help the future uptake of NBS across the EU.



Barcelona



Lisbon

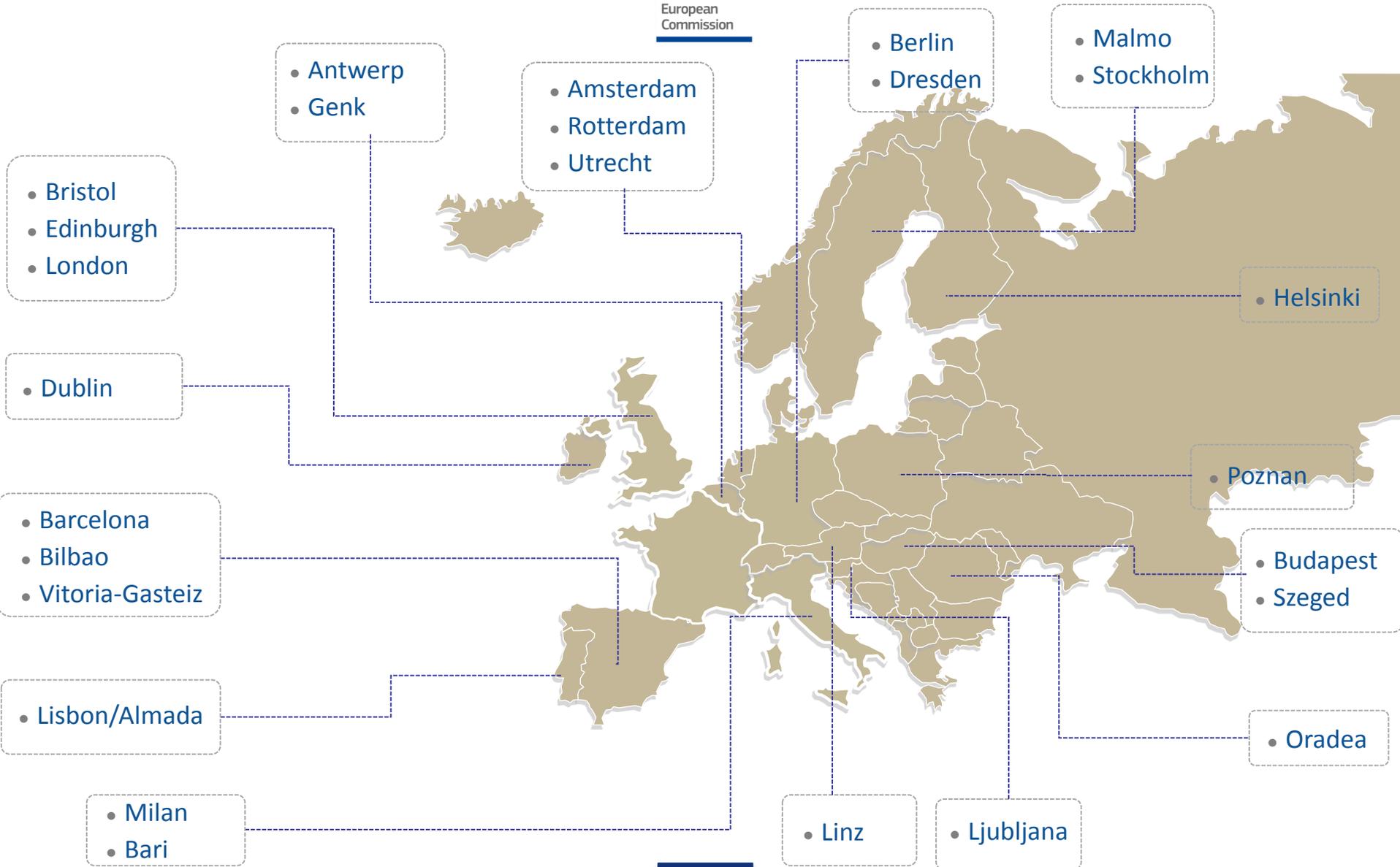


Ljubljana

NBS case studies



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NBS case studies



Prinzessinnengarten, Berlin



Recreation area Solarcity, Linz



Augustenborg, Malmo

NBS case studies



Bosco Verticale, Milan



The Ciutadella-Collserola green corridor, Barcelona

NBS case studies



Vale de Alcantara green corridor, Lisbon

NBS case studies



Tidal Park Esch, Rotterdam



The Ljubljanica river restoration,
Ljubljana



What is Oppla?



COLLABORATION

Make Oppla a part of your project



ASK OPPLA

Increase the impact of your outputs



INTEGRATION

Build yourself a home within Oppla



MARKETPLACE

Increase the impact of your outputs



MATCHMAKING

Network with new audiences



GOVERNANCE

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- ✓ Case studies portofolio
- ✓ ThinkNature Handbook
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