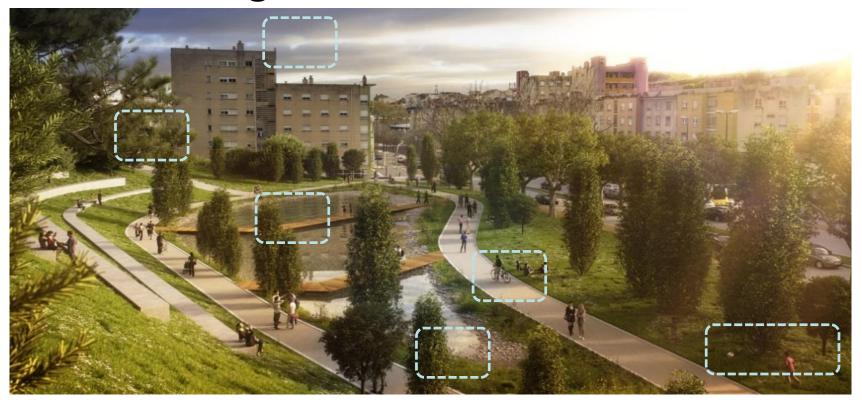


The EU R&I agenda for Nature-based Solutions



Interreg Europe Policy leanning Platform Brussels, 26/11/19

Julie Delcroix
DG Research and Innovation



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=naturebased-solutions







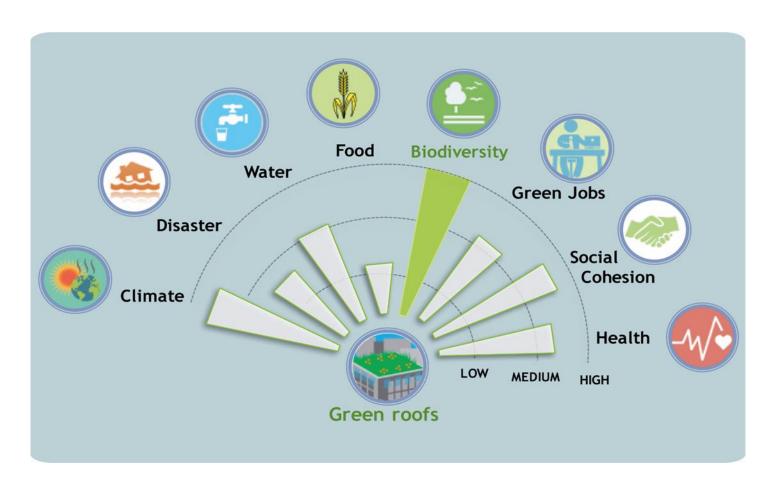








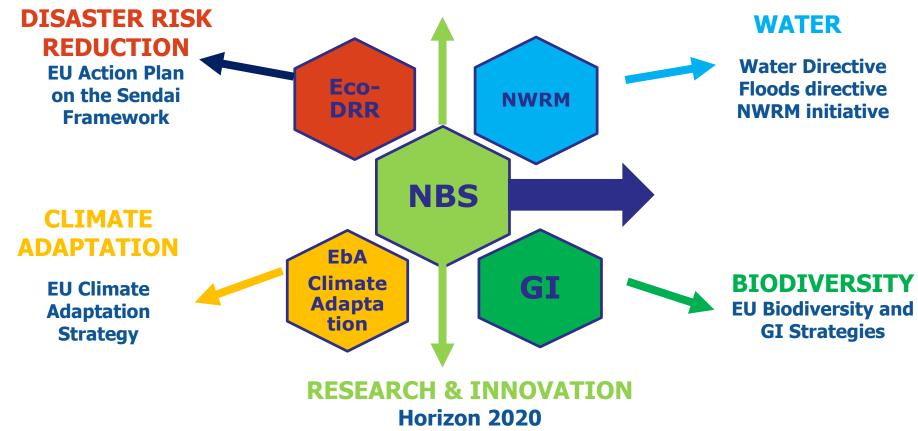
NBS provide multiple benefits and help tackle different societal challenges at the same time





SUSTAINABLE CITIES & TERRITORIES

Urban Agenda for the EU, Cohesion Policy (UIA)

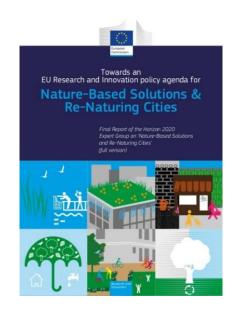


(locally adapted, systemic interventions, providing environmental, social and economic benefits)

EU R&I: the NBS roadmap



- 1. Enhance the framework conditions for NBS at EU **policy** level
- 2. Develop a European **community of innovators** through awareness and engagement
- 3. Provide the **evidence and knowledge base** for nature-based solutions
- 4. Advance the **development**, **uptake and upscale** of innovative nature-based solutions through systemic innovation and co-design, co-development, co-implementation of solutions and leverage of funding (large demos)
- 5. Mainstream nature-based solutions within the international R&I agenda.







Target 3: Building the evidence base

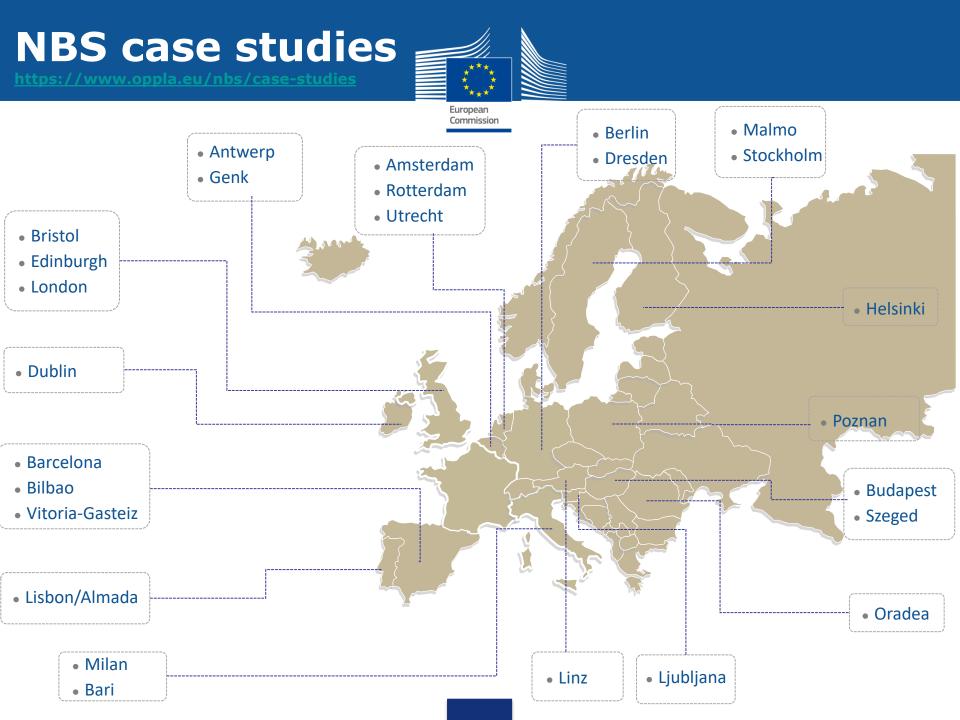
FP7 projects (2007-2014): not explicit about NBS but knowledge generated on

- Ecosystem-based approaches
- Various dimensions of urban sustainability

NBS city case studies: best practices in different EU contexts

Horizon 2020 (2014-2020): demonstration phase

Projects will provide evidence of NBS cost-effectiveness





Amsterdam - NBS for greening the city and increasing resilience



Bari - NBS for greening the urban space



Berlin - NBS for urban green connectivity and biodiversit



Bilbao - NBS for dealing with extreme temperature and rainfall events



Bristol - NBS for ensuring a sustainable future



Budapest - NBS for climate resilience and pollution control



Dresden - NBS for sustainable urban transition



Dublin - NBS for a more sustainable city by 2030



Edinburgh - NBS enhancing health, wealth and sustainability



Genk - NBS bridging green and industrial heritage



Linz - NBS as a motor for urban growth



London - NBS for a leading sustainable city



Milan - NBS for urban regeneration



Oradea - Improving quality of life with NBS



Poznań - NBS for a friendly, mobile city



Rotterdam - NBS for building a waterproof city

Horizon 2020: Over



200M € invested on NBS									
TYPE OF ACTION	TOPIC FOCUS	Focus Aurban Akca	BUDGET	Biodiversity					
1 CSA	Science-policy-business- society interfaces (2017)	Agenda All	3.6M €						
11 IAs (+3 in 2021) (demonstration	4 projects on water and climate resilience (2017)	Cities	49M €	Climate Adapt DRR					
actions)	4 projects on inclusive urban regeneration (2018)	Cities	49M €	Sustainable urbanization					
To provide a robust EU- wide evidence base and develop an EU reference	3 projects on hydro- meteorological events (2018)	Landscape/ watershed	35M €	Climate DRR Adapt					
framework on NBS	3 projects in 2021 on decarbonisation and air quality	Cities	30M €	Air Quali ty Climate Mitigat					
5 RIAs (+4 in 2021) To create knowledge and	2 projects on new governance , business , financing models (2017)	Cities	15M €	Sust. financing					
	1 project on insurance value of ecosystems/NBS for DRR/CA (2017)	Land/Cities	5M €	Climate DRR Adapt					
	2 projects on restoration of urban ecosystems (EU-CN) (2019)		10M €						
tools on specific areas	2 projects in 2021 on restoration of urban ecosystems (EU-CELAC)	Cities	10M €	Biodiversity					
	2 projects in 2021 on water quality and security (Int. Coop)	Cities	10M €	Water					

Demonstration projects - urban



SCC-02-2016/2017: Demonstrating innovative nature-based solutions in cities (IA)

- (2016) NBS for water and climate resilience in urban areas (40 M €)
- ✓ (2017) NBS to enhance health, wellbeing and social cohesion through inclusive urban regeneration (44 M €)







www.urbinat.eu

www.growgreenproject.eu



www.connectingnature.eu







www.urbangreenup.eu

8 Demonstration projects - urban



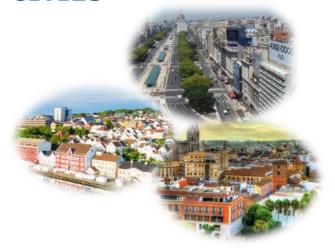
FRONT RUNNER CITIES





Mentoring scheme





- ✓ Cities as 'living laboratories' for the co-design, co-production, comonitoring of NBS
- ✓ Demonstration of NBS through implementation and monitoring
- ✓ Committed to the mobilization of financial resources for the deployment of NBS

- ✓ Seek advice, expertise, assistance, capacity-building...
- Have access and participate in the tools/methodologies developed in front-runners
- ✓ Committed to develop re-naturing urban plans integrating NBS

Horizon 2020: A community of practice on NBS

68 cities involved in urban demonstration projects (26 front-runners + 42 followers)

NATURE with:

- Technical innovation
- Social and governance innovation
- Regulatory innovation
- Landmanagement & urban planning innovation
- Business and finance innovation



8 Demonstration projects - urban



These 8 projects together are expected to provide a robust evidence at the EU-level of the value of NBS to address the different challenges that cities are facing nowadays

- ✓ Develop and implement monitoring schemes to assess efficacy and performance of nature-based solutions, looking at benefits and co-benefits
- ✓ Develop methodologies for replication and up-scaling, including investment strategies, governance and business models and integration in urban and land-use planning
- ✓ Identify and assess regulatory, economic, social and technical barriers and ways to overcome them
- ✓ Establishing sustainable data platforms

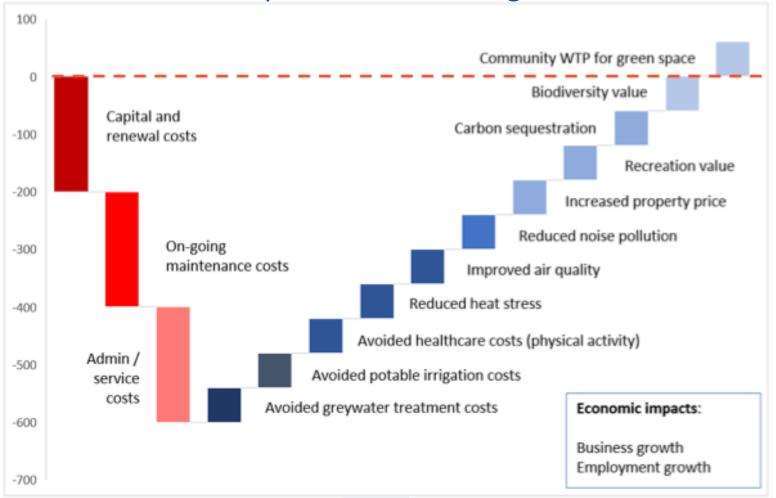
A dedicated TF on Financing & Governance Models European Commission

- > 3 work-streams identified:
 - 1. Mapping financing (funding) mechanisms and business typologies: Ongoing work: every voluntary project contribute to GROW GREEN guideline by providing exemples of implementation
 - 2. Identifying essential elements of NBS business case
 - including as compared to green/grey/hybrid solutions:
 - aiming also at the creation of a pipeline of NBS projects
 - Ongoing common publication on this
 - 3. NBS and public procurement : guidelines being developped with UNALAB as lead, and input from other projects
- Engage with financial institutions and policy (NCFF, B&B, sustainable finance, EU urban agenda partnership on NBS and sustainable land use etc.)



NBS benefits can be delayed/non-monetary.

→ need of adapted business and governance models



Exemples of outcomes which would be illustrated by other H2020 projects

European Commission



Approaches to financing nature-based solutions in cities

Types of instruments falling under the first category above include:

- Innovative use of public budgets, such as pooling funding from different government departments or making use of previously untapped sources such as the public health budget.
- Grant funding and donations, including: EU funding; grants from regional and national public bodies; philanthropic contributions; and crowdfunding.
- Instruments generating revenue (including value-capture mechanisms), such as: revenues
 from land sales or leases; taxes (aimed at cost-recovery); user fees; developer contributions
 or charges; betterment levies; voluntary contributions from beneficiaries; sale of
 development rights and leases; funds linked to offsetting or compensation requirements;
 and other voluntary schemes that generate revenues.
- 'Green finance' (or debt-based instruments): loans from public or private financial institutions; green bonds; and the Natural Capital Financing Facility (NCFF).

Types of instruments covered by the second category include:

- Market-based instruments: user charges; taxes (as incentives rather than a cost-recovery mechanism); subsidies; tax rebates; credit-trading systems; offsets for residual impacts on biodiversity/GI; and payments for ecosystem services (PES).
- Developing 'Business Improvement Districts' (BID)
- Setting up endowments
- Creating Public-Private Partnerships
- Revolving funds
- Community asset transfers

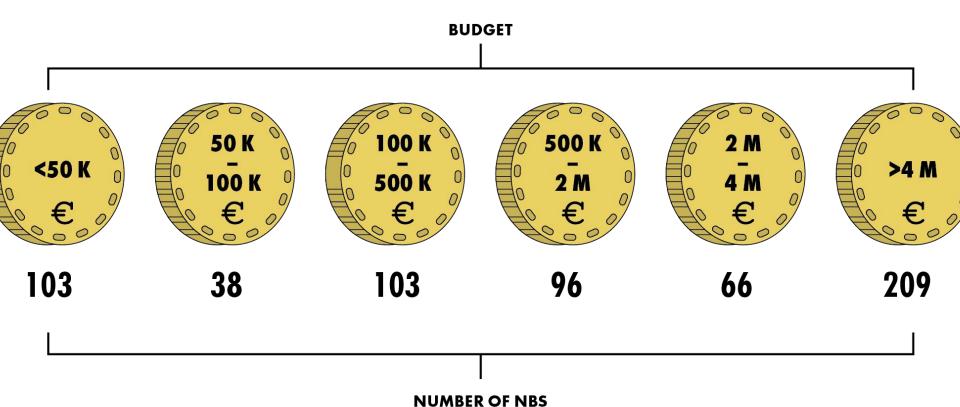
Public and Private Investment in NBS



SCC-03-2016 projects



Size of urban NBS investments, analysis of 1000 case studies across Europe



Business & Governance models



SCC-03-2016 projects



Business Model Catalogue & Business Model Puzzle

for urban nature-based solutions



 Choose a type of NBS or a specific case





i.e. street trees, green roofs, sustainable drainage systems) or a specific project you are working on in your city or neighborhood.

2. Identify the values it creates, for whom ('puzzle')

NBS type/case:				
	Economic benefits	Biophysical benefits	Social benefits	Cultural benefits
Who values what?	flood risk reduction: material & energy efficiency; higher revenues; economic growth; employment; employee wellbeing	biodiversity; water quality; cooling: pollination; air filtering	Health, social cohesian, relaxation, safety, noise reduction, concentration, justice	Identity, aesthetic value, sense of place, cultural heritage, symbolism, creativity
Public actors (municipalities, water boards, provinces, national government)				
Private actors (insurers, real estate developers, roofing lirms, gardening lirms, landscape architects)				
Not-for-profit organisations (NGO's, stakeholder networks)				
Cifizens & local communities				

Use the **puzzle pieces**: who values what? Use empty pieces if you want to add additional benefits (or write with a pen).

















pace Education

ordinari ordinari

3. Mix & match NBS business models



Use your puzzle template to select NBS business models that could be used for upscaling your NBS. Use the Business Model Catalogue as inspiration.



Business & Governance Models



SCC-03-2016 projects



www.naturvation.eu/atlas

- Urban Nature Atlas
- Database on the values and assessment methods of NBS







- NBS Database
- Implementation Models Online Database

www.nature4cities.eu/platform

Leaflet LOSM Manni

Business & Governance models



Pipeline of Project Types

High / predictable revenue streams

Currently most investible

- Habitat bank for biodiversity net gain
- Woodland management and new woodland creation
- Catchment scale initiatives
- Sustainable drainage schemes
- Place-based portfolio model
- Peatland restoration

Green Improvement District for urban areas

for agri-business

Outcomes payment models

- Outcomes payment models for water quality
- Outcomes payment models for flood mitigation

Investible in 1-3 years

- Green infrastructure models for social prescribing
- Community levies for flood protection
- Wetland creation

INVESTMENT OPPORTUNITIES

Outcomes payment models for physical and mental health

- Outcomes payment models for air quality
- Sustainable travel infrastructure (as a standalone project)

> 3 years

Source: City of Manchester (Grow Green)

Low / uncertain revenue streams

Valuing the multi-benefits of NBS: assessme

- A common Handbook with:
 - ✓ Guidance on the co-creation process
 - ✓ As many challenges (co-benefits) as possible
 - ✓ A set of "umbrella indicators", with at least 1-2 indicators that will be measured by all the projects
 - ✓ List of additional relevant indicators
 - ✓ Guidance on protocols/methodologies
- ➤ Linking with relevant initiatives (EnRoute, EEA, EU Urban Agenda NBS partnership)







NBS Calls for 2020

- Innovative nature-based solutions for carbon neutral cities and improved air quality
- Enhanced natural treatment solutions for water security and ecological quality in cities

And also considering NBS:

- Multi-hazard risk management for risk-informed decision-making in the E.U.
- > Climate Resilience of European coastal cities



Commission proposal for

Horizon Europe

THE NEXT EU RESEARCH & INNOVATION PROGRAMME (2021 – 2027)

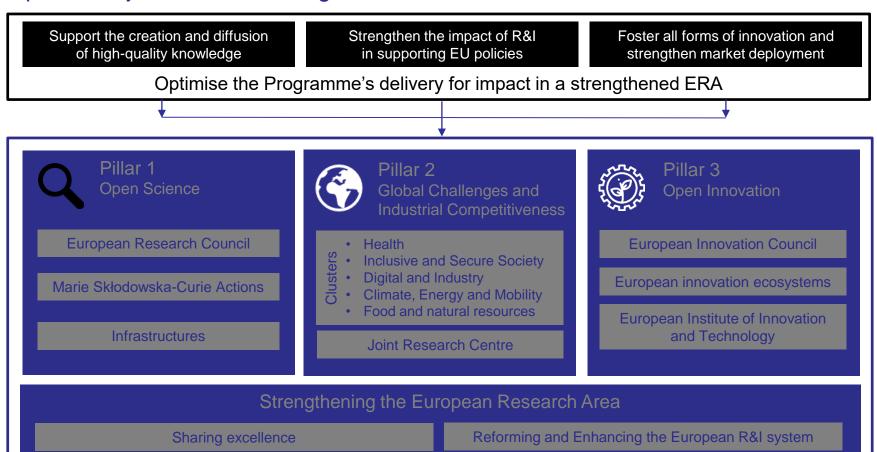
#HorizonEU

http://ec.europa.eu/horizon-europe





Specific objectives of the Programme







Cluster 6 (circa EUR 10 billion):

- > accelerate the uptake of nature-based solutions to climate mitigation and adaptation
- > Innovative nature-based solutions for pollution reduction, degraded ecosystems revitalization, biodiversity decline reversing
- comprehensive assessment methodologies for nature-based solutions in business and for social justice:
- A robust science and evidence base contributing to EU coordinated action on **the sustainable finance action plan**, so as to shift investment towards more biodiversity-friendly activities.
- Assessing and valuing biodiversity, ecosystem services and nature-based solutions (incl. natural capital accounting, long-term integrated monitoring frameworks
- Deploy nature-based solutions to enhance biodiversity in Agriculture, Forestry and Rural Areas (IA3 in cooperation with IA on Biodiversity and Natural Capital).

<u>Cluster 3:</u> use of sustainable, cost- effective and inclusive approaches, like **nature-based solutions** for **Disaster Resilient Societies**

<u>Cluster 5:</u> Nature-based solutions and circular material, reduced life-cycle environmental footprint and pollution in cities for developing sustainable infrastructure, services and systems for smart and sustainable communities and cities

<u>Missions</u>: Adaptation to climate change; Healthy seas, oceans and natural waters; Climate-neutral and smart cities; Soil health and food