



# *Innovating with Nature to solve societal challenges*

## *H2020 Societal Challenge 5*

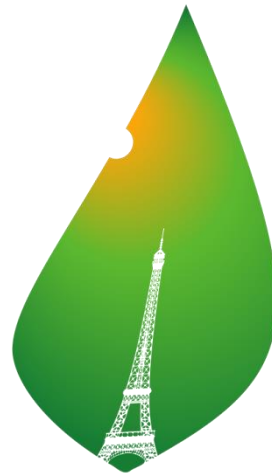
*Nature based solutions for sustainable and resilient cities  
Orvieto, 4-7 April 2017*

*Christos Fragakis  
Deputy Head of Unit  
Sustainable Management of Natural Resources,  
DG Research & Innovation*



## Current international policy drivers for EU R&I

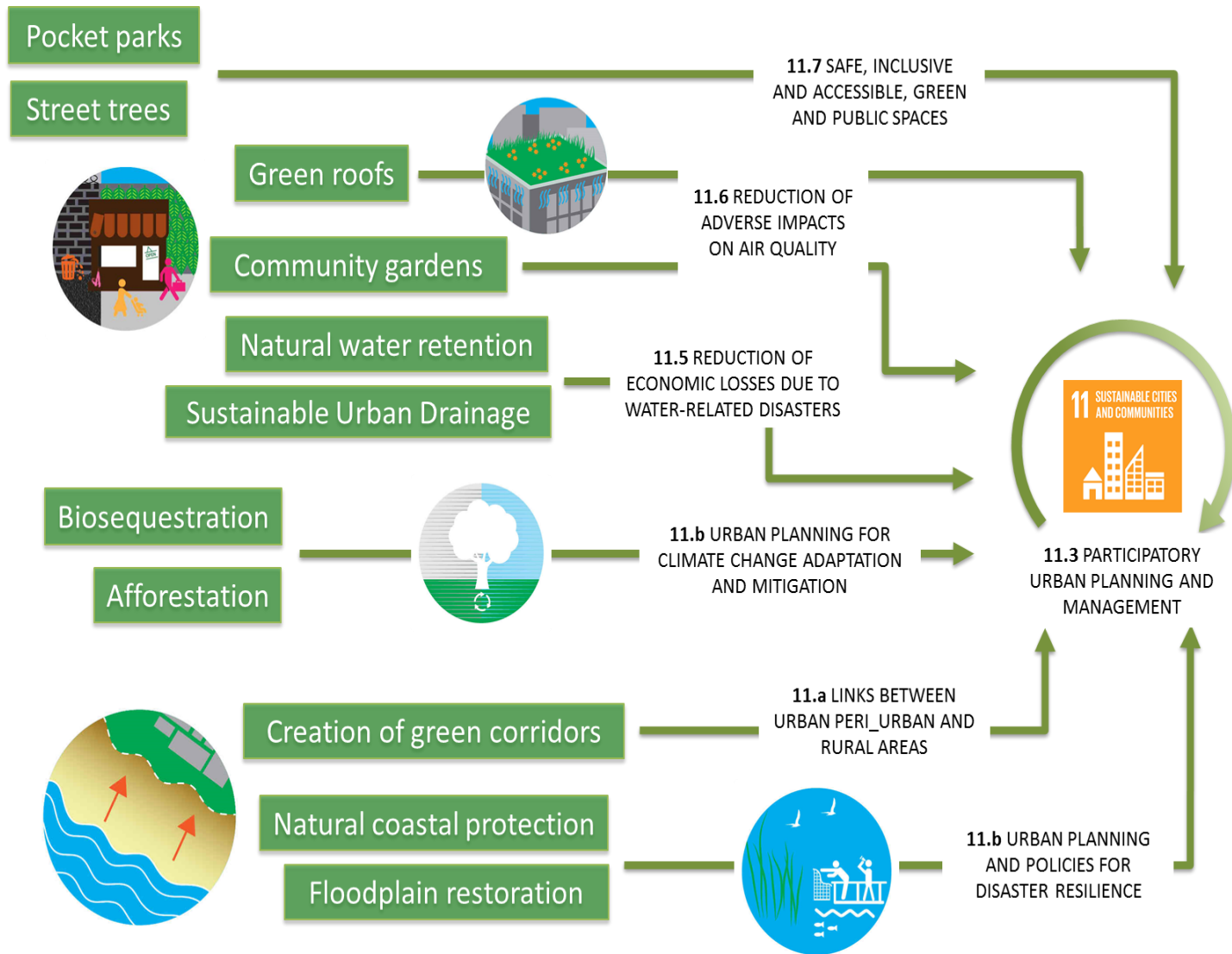
Sendai Framework for Disaster Risk Reduction 2015-2030



PARIS2015  
UN CLIMATE CHANGE CONFERENCE  
COP21·CMP11



EU Urban Agenda





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## Current EU policy drivers for EU R&I

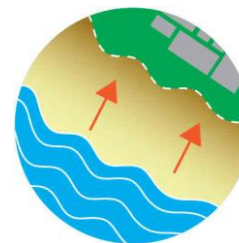




## Defining Nature-based solutions

**Living solutions inspired and supported by nature** that simultaneously provide environmental, social and economic benefits and help to build resilience

**Solutions that bring more nature** and natural features and processes into cities, landscapes and seascapes, through **locally adapted, resource-efficient** and **systemic interventions**



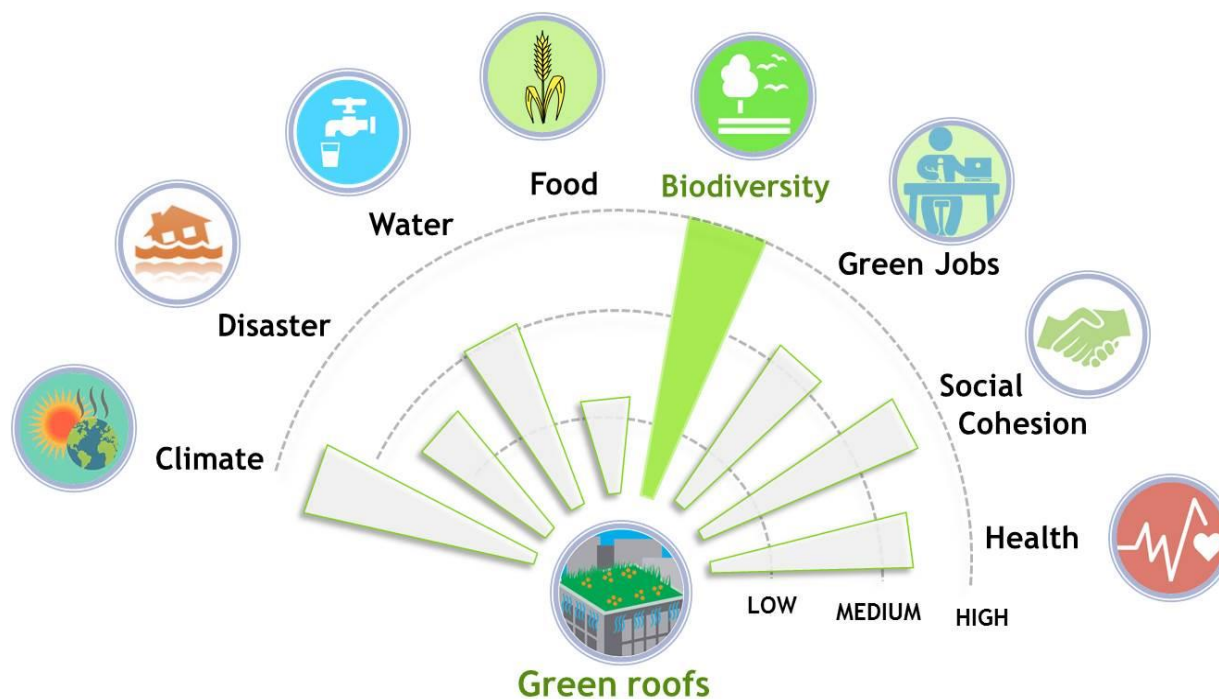
# NBS initiative, the way forward



- Position **Europe** as **world leader** in **innovating with nature (NBS)** to enhance **sustainability, resilience** and promote **green economy, jobs and growth**;
- Provide EU-wide **evidence** about **multi-functionality** and **cost-effectiveness** of NBS accounting for all **benefits**;
- Promote **systemic interventions** to foster **system-wide transformation** and **replicable solutions** integrating **all forms of innovation**;
- Build a **community of innovators** and **practitioners** on NBS;
- Contribute to creation of a **global market** for such solutions/interventions;



# Nature-Based Solutions: economic, social and environmental benefits





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# Enhancing EU R&I impact for "Urban re-naturing"

## Open Innovation

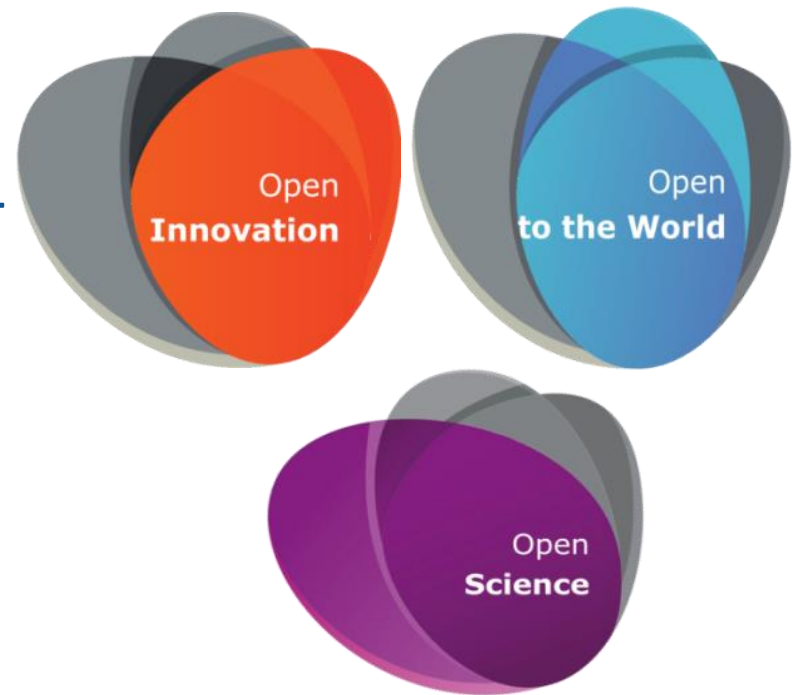
- cities as 'living labs' and actors of innovation
- promotion of trans-disciplinary and multi-stakeholder participatory approaches
- co-creation of solutions

## Open Science

- open access, open platforms, open data, etc.

## Openness to the World

- strong international component

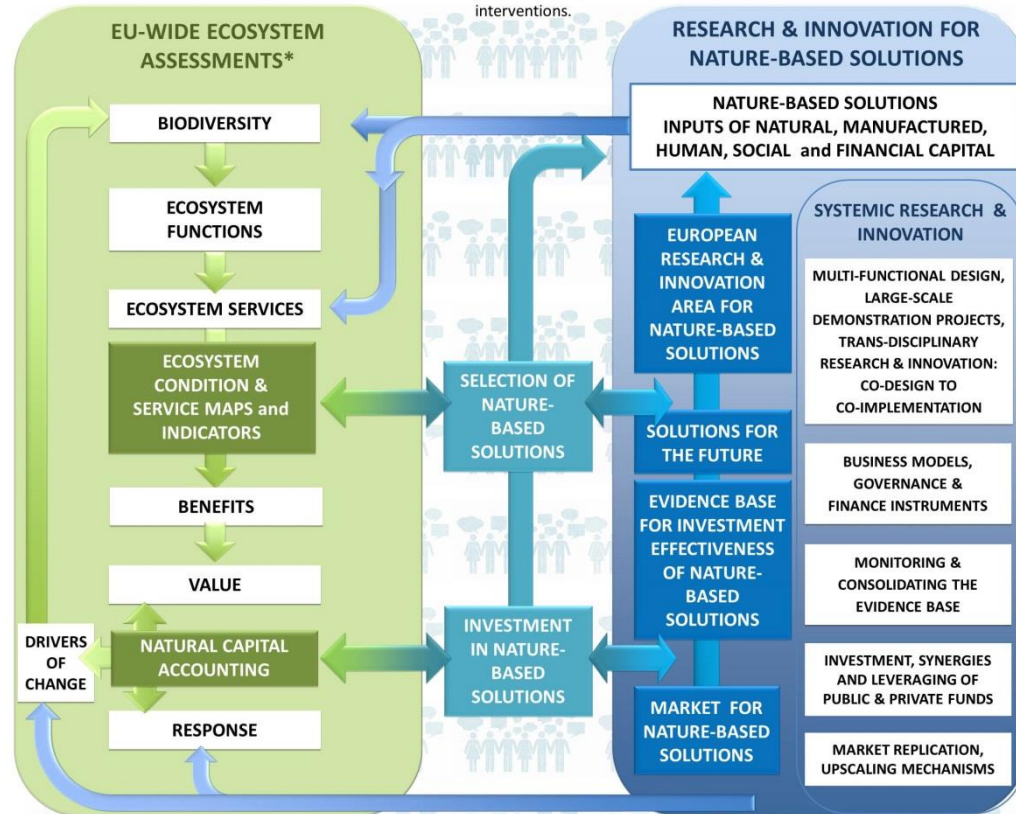




## RESEARCH & INNOVATION FOR NATURE-BASED SOLUTIONS AND EU-WIDE ECOSYSTEM ASSESSMENTS :

### A 'SPRINGBOARD' FOR DISCUSSION

**NATURE-BASED SOLUTIONS** are understood as living solutions that are inspired and supported by nature, which are efficient and cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Nature-based solutions bring more nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions.



\* Freely adapted from MAES Working Paper 2013

This is a preliminary attempt at linking MAES with Nature-based Solutions R&I. Further links need to be made to Green Infrastructure, Ecosystem Based Adaptation, eco-Disaster Risk Resilience, Natural Water Retention Measures

#### HORIZON 2020 WORK PROGRAMME 2017

SOCIETAL CHALLENGE 5: NATURE-BASED SOLUTIONS FOR TERRITORIAL RESILIENCE, CULTURAL HERITAGE FOR SUSTAINABLE GROWTH, SME INSTRUMENT  
CROSS-CUTTING ACTIVITIES - SMART AND SUSTAINABLE CITIES: SUSTAINABLE CITIES THROUGH NATURE-BASED SOLUTIONS

[RTD-ENV-NATURE-BASED-SOLUTIONS@ec.europa.eu](mailto:RTD-ENV-NATURE-BASED-SOLUTIONS@ec.europa.eu)



Research and  
Innovation





# EU R&I agenda on Nature-based solutions



1. Improved framework conditions
2. Community of innovators
3. Solid knowledge and evidence base
4. Development, upscaling and uptake
5. International co-operation

# Implementation: H2020 2016-2017 Work Programme

Calls	Priorities	Topic	Actions	funding type	2016	2017
Smart and Sustainable Cities	Nature-based solutions	SCC-02-2016-2017	<p>Demonstrating innovative nature-based solutions in cities</p> <p>- 2016: Demonstrating innovative nature-based solutions for climate and water resilience in cities</p> <p>- 2017: Nature-based solutions for inclusive urban regeneration</p>	IA	40	44
		SCC-03-2016	New governance, business, financing models & economic impact assessment tools for sustainable cities with nature-based solutions (urban re-naturing)	RIA	15	
		SCC-04-2016	Sustainable urbanisation	ERA-NET Cofund	5	
SC5	Nature-based solutions	SC5-8-2017	Large-scale demonstrators on nature-based solutions for hydro-meteorological risk reduction	IA		29
		SC5-9-2016	Insurance value of ecosystems	RIA	5	
		SC5-10-2016	Multi-stakeholder dialogue platform to promote innovating with nature to address societal challenges	CSA	3	

## Maximize impacts through clustering & synergies across H2020 "NBS" projects portfolio

<b>EKLIPSE NBS EWG</b>	CSA	SC5-09-2014	European Knowledge and Learning Mechanism to Improve the Policy-Science-Society Interface on Biodiversity and ESS
<b>INSPIRATION</b>	CSA	SC5-10b-2014	Towards a strategic research agenda on soil, land-use and land management in Europe
<b>ThinkNature</b>	CSA	SC5-10-2015	Development of a multi-stakeholder dialogue platform and Think tank to promote innovation with Nature based solutions
<b>NAIAD</b>	RIA	SC5-9-2015	Insurance Value of Nature
<b>Nature4Cities</b>	RIA	SCC-03-2015	New governance, business, financing models and economic impact assessment tools for sustainable cities with NBS
<b>Naturvation</b>		SCC-03-2015	
<b>CONNECTING GROW GREEN UNALAB Urban GreenUP</b>	IA	SCC-02-2016 SCC-02-2016 SCC-02-2016 SCC-02-2016	Demonstrating innovative NBS in cities/ water and climate resilience
<b>BiodivERsA3</b>	ERA-NET	SC5-09-2014	Consolidating the European Research Area on biodiversity and ecosystem services



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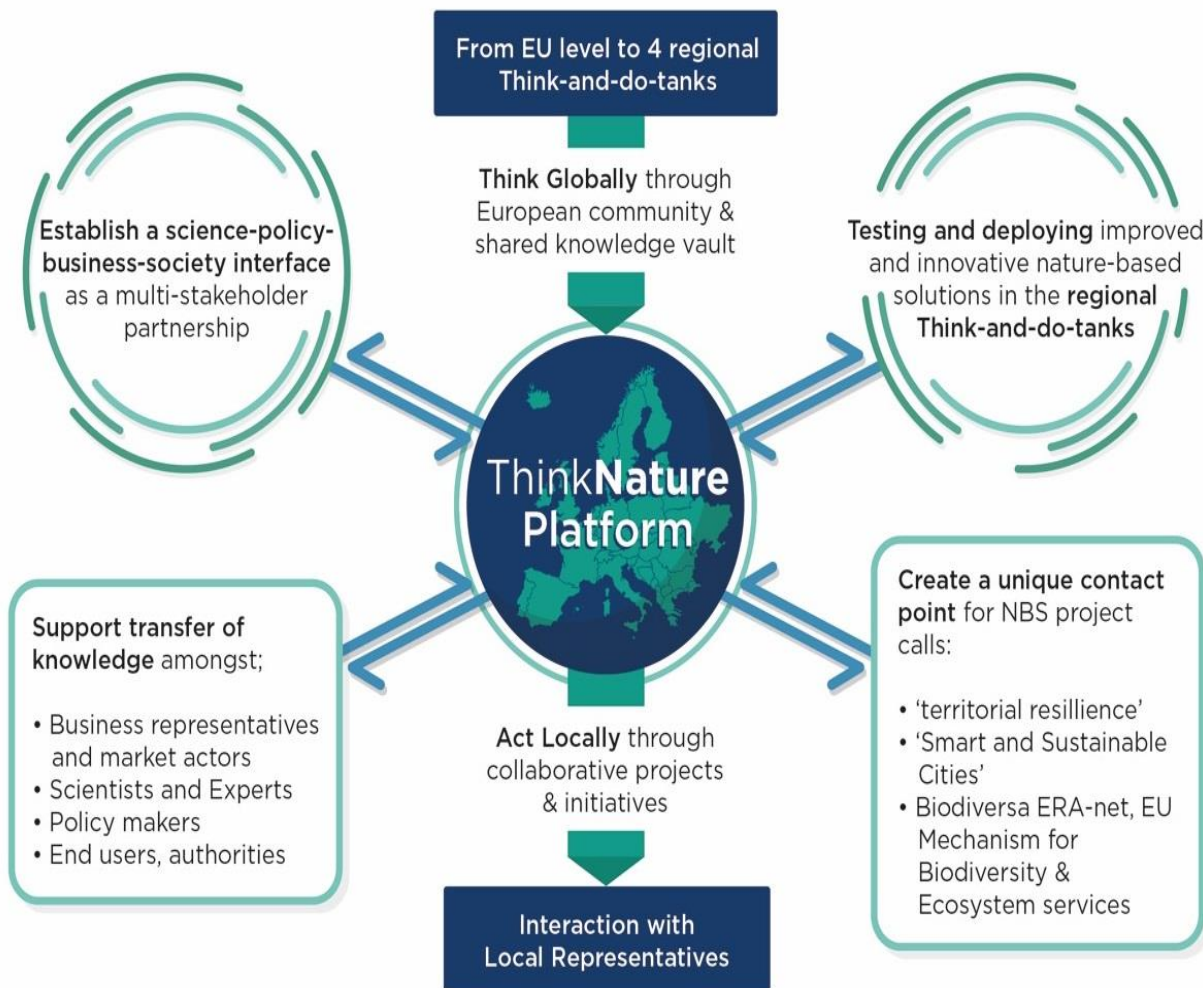
# Cities in EU projects testing Nature Based Solutions



EU calls:

- FP7 projects (TURAS)
- **SC5-10-2016 (ThinkNature)**
- **SC5-09-2016 (NAIAD)**
- **SCC-03-2016 (Nature4Cities, Naturvation)**
- **SCC-02-2016 (CONNECTING, GROW GREEN, UNALAB, Urban GreenUP)**

# Development of a multi-stakeholder dialogue platform and Think tank to promote innovation with Nature based solutions





## MULTI-STAKEHOLDER PLATFORM FOR NATURE BASED SOLUTIONS

The objective of the ThinkNature project is the development of a platform that supports the understanding and promotion of nature based solutions (NBS). The platform is a communication space for a variety of stakeholders to share experiences.

In order to achieve more sustainable and resilient societies, nature based solutions are an important topic on the EU Research and Innovation policy agenda. The ThinkNature project is part of Horizon 2020,

the EU Framework Programme for Research and Innovation.

Nature based solutions are:

- Living solutions inspired and supported by nature that simultaneously provide environmental, social and economic benefits and help to build resilience
- Solutions that bring more nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions

Stay informed by signing up for the newsletter at [www.think-nature.eu](http://www.think-nature.eu)



ThinkNature Platform  
launch 24-27 October 2017

By joining the ThinkNature Platform, stakeholders will have full access to multi-disciplinary scientific expertise, new policy agendas as well as business opportunities.

By being a member of ThinkNature International community of practice, the engaged stakeholders will bridge research, policy, NGO and business sectors in order to promote nature based solutions for cities, as well as rural environment, to address energy efficiency, lower greenhouse gas emissions, pollution reduction, reduced risk of natural hazards, better human health, and improved social conditions and human wellbeing.

A large global network of cities participating in NBS projects is currently being established.

Lisbon: Nature-based Solutions (NBS)  
Enhancing Resilience through Urban  
Regeneration



Green Corridor connecting Monsanto Forest Park to Lisbon city centre

[WWW.THINK-NATURE.EU](http://WWW.THINK-NATURE.EU)



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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 750338.

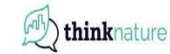


# frontiers Research Topics

## Nature Based Solutions

**Submission deadline**  
30<sup>th</sup> November 2017

Frontiers in Environmental Science  
Frontiers in Built Environment



Nature based solutions (NBS) are living solutions inspired and supported by nature that aim to help societies address a variety of environmental, social and economic challenges in sustainable ways. They have potential to gain resilience from nature to design sustainable cities, realise the economic potential for economic development and achieve a business success with beneficial social, environmental and health outcomes.

To achieve the double goal of economic growth and sustainability, the EU is investing in NBS. A network of 79 cities in 32 countries have been participating in demonstration projects. In addition, a coordination action supported by the EU called, ThinkNature, aims to establish a European community of practice that will bridge research, policy, NGO and business sectors. This Research Topic gathers work on the four main NBS innovation domains:

- sustainable urbanization in cities
- restoration of degraded ecosystems
- climate change adaptation and mitigation using NBS
- risk management and resilience

For more information:

[environmentalscience@frontiersin.org](mailto:environmentalscience@frontiersin.org)  
[fron.tiers.in/go/uYbQQOm](http://fron.tiers.in/go/uYbQQOm)

### TOPIC EDITORS

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Denia Dionysia Kolokotsa, Technical University of Crete, Greece





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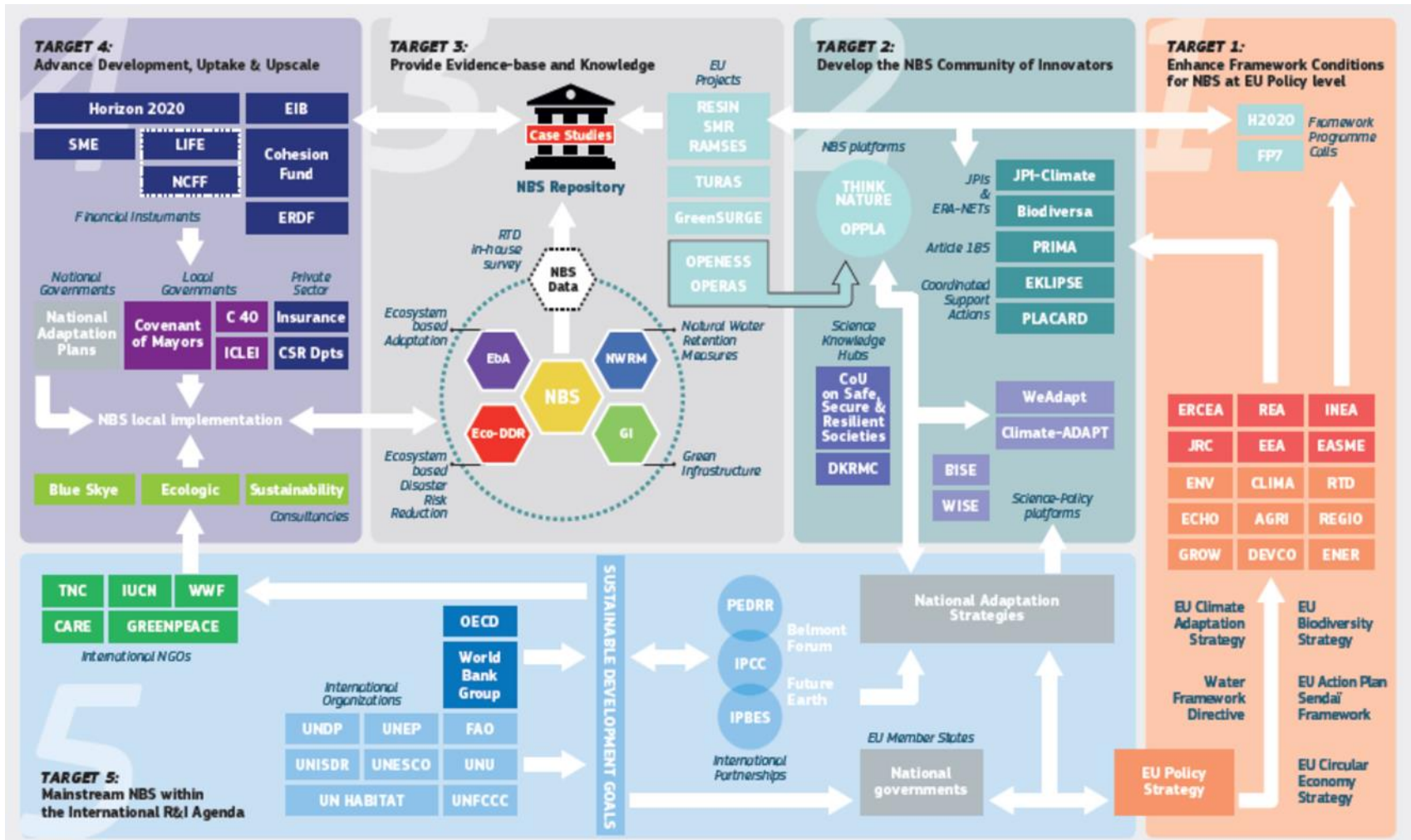
*An EU support mechanism for  
evidence-based policy on biodiversity  
& ecosystem services*



Knowledge & Learning Mechanism  
on Biodiversity & Ecosystem Services



Uptake and comments, via [Oppla marketplace](#), encouraged





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# Indicative ideas for future H2020 calls

## 1. Innovation for sustainable and resilient cities

- NBS for restoration of urban ecosystems and water security
- Well-being and health in cities
- Circular and regenerative cities
- Carbon neutral cities + air quality
- Climate resilient coastal cities
- Climate, biodiversity and ecosystems



Credit: © Ecosistema Urbano



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Follow our R&I policies and events:

**“Innovating with Nature and Culture in Europe and beyond”**

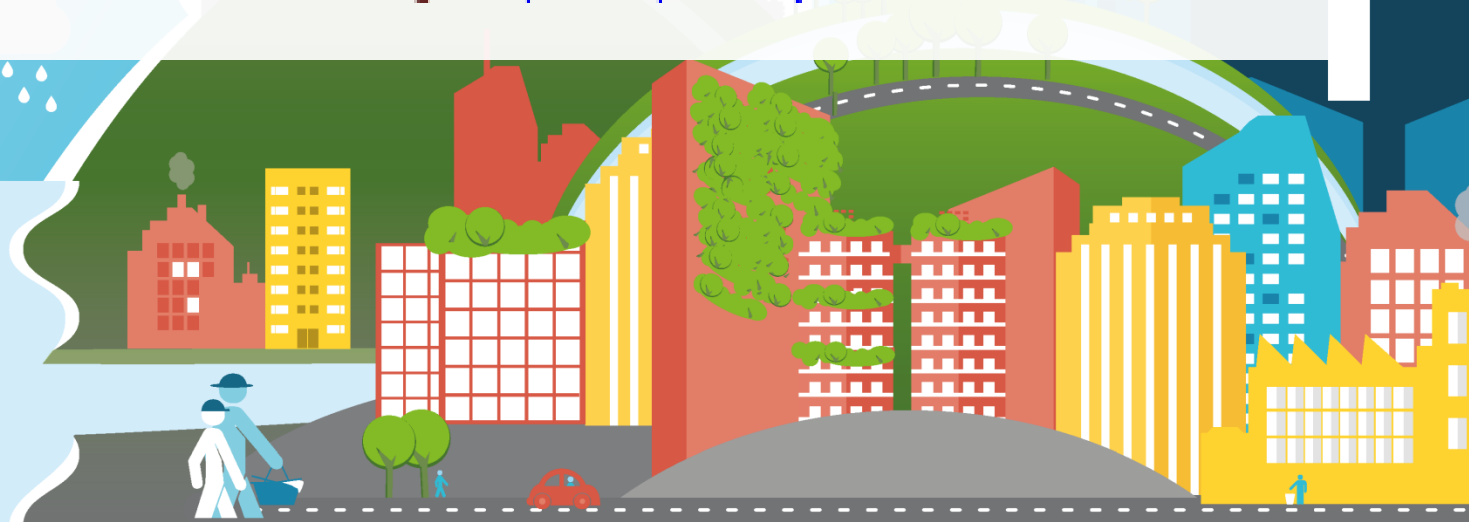
**Nature-Based Solutions:** <http://europa.eu/!Jg99bW>

**@NatureBasedSolu #NatureBasedSolutions**

**Innovating Cities:** <http://europa.eu/!rq76WG>

**@InnovatingCitie #InnovatingCities**

**Cultural Heritage:** <http://europa.eu/!Jy84Pr>



## For more information

- about **HORIZON 2020**: [www.ec.europa.eu/research/horizon2020](http://www.ec.europa.eu/research/horizon2020)
- About H2020 calls under **SC 5**
- <http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2199-sc5-21-2016-2017.html>
- <http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2193-sc5-22-2017.html>
- **For up-to-date information on R&I policies and events**

### **Nature-Based Solutions:**

<http://europa.eu/!Jg99bW> [@NatureBasedSolu](#) [#NatureBasedSolutions](#)

### **Innovating Cities:**

<http://europa.eu/!rq76WG> [@InnovatingCitie](#) [#InnovatingCities](#)



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with you and with nature!**

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[www.ec.europa/research/horizon2020](http://www.ec.europa/research/horizon2020)