NATURE 4 CITIES

Be Part of the Green Transition

SUSTAINABLE PLACES 2020
October 27-30, 2020
Digital Event

Nature4Cities H2020 project

Address your urban challenges with Nature Based Solutions (NBS)

R2M RESEARCH TO MARKET SOLUTION

Paper: « Tools assessment for green transition »

SUSTAINABLE PLACES 2020
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Digital Event

Urban areas face challenges

CLIMATE

- Climate issues
- Water management and quality

ENVIRONMENT

- Air quality
- Biodiversity and urban spaces
- Soil management

RESSOURCES

- Ressource efficiency

ECONOMY

- Green Economy

SOCIAL

- Public health and well-being
- Environmental justice and social cohesion
- Urban planning and governance
- People security

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Urban areas face challenges

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Climate issues

NBS as powerful mitigation measures

SUSTAINABLE PLACES 2020
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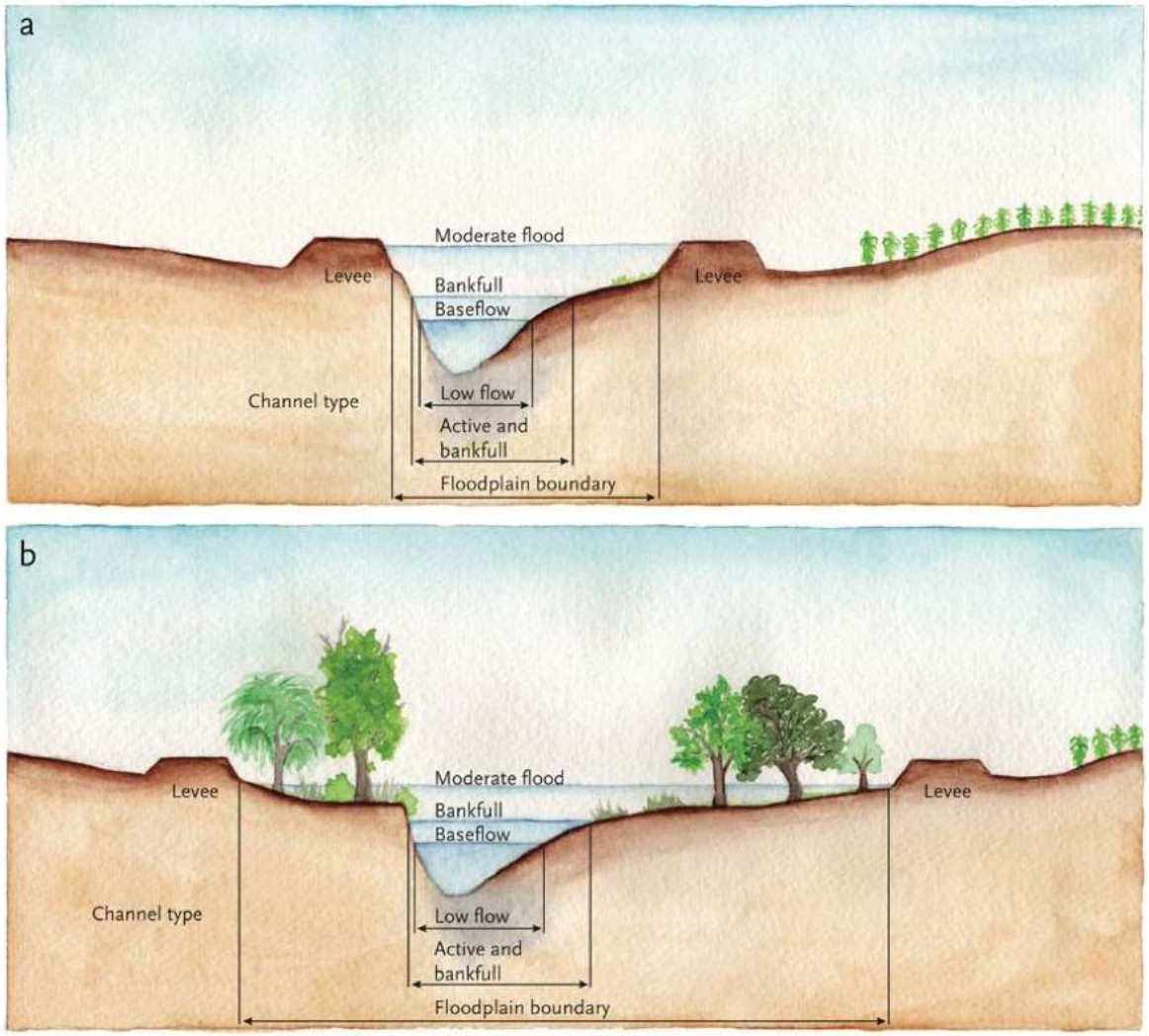

Figure 5. Conceptual diagram of a dike setback project. (A) The dikes are located close to the channel and, during floods, are exposed to high velocity flows, increasing the risk of erosion and need for maintenance. There is limited room for river-floodplain connectivity and ecosystem processes between the dikes. (B) Dikes that are set back from the river; for the same flood as in A, the setback dikes are exposed to lower water stages and flow velocities, reducing erosion and maintenance costs. The area available to support floodplain ecosystems is greatly expanded. From Opperman et al. (2017) and used with permission from the University of California Press.

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NBS as powerful mitigation measures

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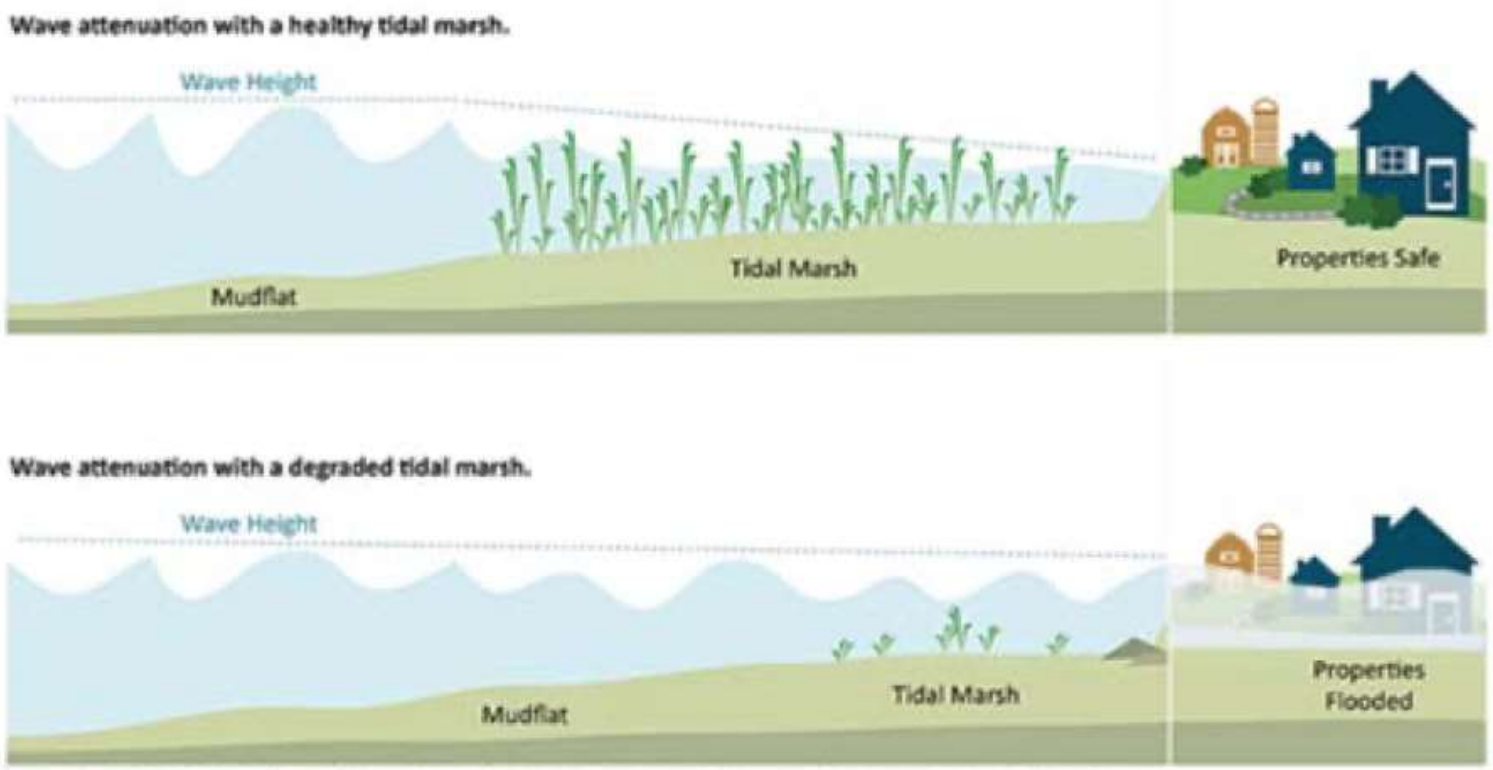
Figure 7[38] Conceptual diagram of a tidal marsh attenuating waves and reducing risk of coastal flooding.



Source: Esri ArcNews, "GIS Helps Integrate Coastal Hazard Risk and Sea Level Rise," 2014

- Climate issues
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NBS as powerful mitigation measures

The city of Milan is a member of several EU Programme, Clever Cities – NAture4Cities, which promotes NbS application in urban areas.
Milan is designing wetlands and urban gardens to manage runoff and connect people to nature, and a “vertical forest” to showcase sustainable buildings.

Climate issues

Water management and quality

Biodiversity and urban spaces

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Public health and well-being

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NBS as powerful mitigation measures

Urban trees, parks and gardens act by intercepting fine dust, absorbing pollutants or lowering the temperature as well as acting as a buffer effect during floods.

Green areas are also opportunities **for recreation**, improve **well-being**, create space for meetings.




to address them **Nature4Cities** intends to foster the implementation of

NATURE BASED SOLUTIONS

these are

ACTIONS

inspired by or supported by

NATURE

and spread out at different and interconnected scales











The H2020 project

- Integration of NBS in urban and spatial planning
- new and active community network around NBS
- high quality knowledge and assessment tools
- new governance, business and financial models for NBS implementation

Nature4Cities Platform

technical solutions, methods and tools to empower urban planning decision making and address the contemporary environmental, social and economic challenges that European Cities are facing

Designed for

Policy makers & public urban planners

Urban professionals *(advisory services, landscape companies and architects, suppliers etc)*

Civil Society *(inhabitants and local organizations)*

at all stages of a NBS project

CREATE A NBS PROJECT

Get knowledge and inspiration to choose the **right NBS to match your needs**.

Discover Nature Based Solutions

and the challenges they help addressing with our interactive NBS explorer with extensive factsheets on each NBS

Discover inspiring projects and choose your NBS

with our Geocluster4NBS and pre-selection tool

Diagnose your city's trends

Ecological continuity, biodiversity, proximity of inhabitants to a park, ... analyze your city and identify the best place to implement your NBS project

ASSESS A NBS PROJECT

Assess the impact of your NBS for urban resilience, for the environment and on socio-economic features.
Assessing your NBS project allows you increase your chances of meetings your goals

Diagnose your assessment needs

Find the best methods and tools to evaluate and solve your city's urban challenges

Assess your project

Environmental assessment
Assess the impact of the NBS during all its lifecycle

Urban benefits assessment
Foresee the best place for your NBS by evaluating how it will affect its surroundings

Socio-economic assessment
Estimate the socio-economic benefits, co-benefits and costs of a NBS project

Create your scenarios

Select your performance indicators

Enter your data and launch calculation

Analyze and export your results

IMPLEMENT A NBS PROJECT

Once your project ready to be launched, you still need to build a governance and economic model and to follow your project day by day

Gain skills to build inclusive projects

with our implementation models handbook

Find the most suitable Business, governance and financing model

with our Implementation models pre-selector

Involve citizens in your project

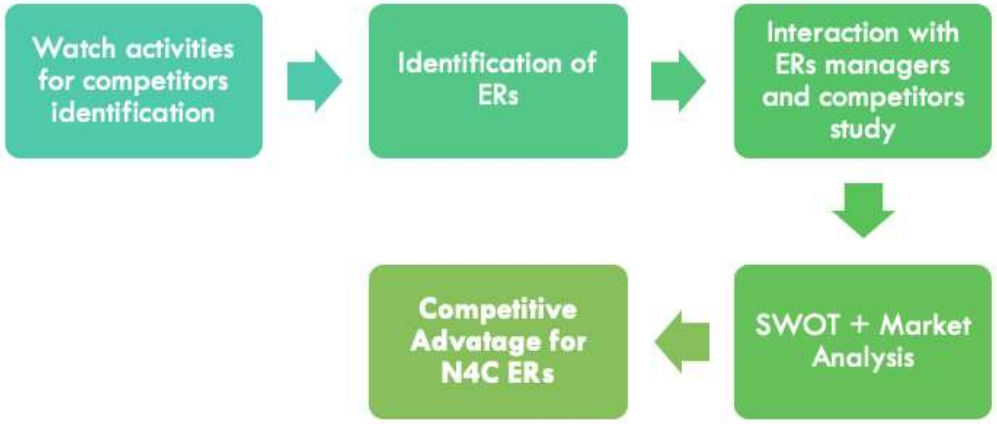
With our NBS participation tool

Nature4Cities Paper

Tools assessment for green transition

The paper aims to uncover the market potential of the identified Exploitable Results (ERs) of the N4C project by **identifying the main competitors** and developing an **exhaustive comparison between them**. One intention is to unlock innovation potential and innovation capacity through the generation of new products, services and capabilities related to the generated project Intellectual Properties (IP) and to explore the market of the tools related to the green transition. Furthermore, the paper will introduce a SWOT (strengths, weaknesses, opportunities, threats) analysis to benchmark existing competitors technologies / product / services.

D8.3 _ Market Analysis



Nature4Cities Paper

Tools assessment for green transition

20 Expolitable results was identified within the N4C project framework

20 _ Exploitable Results

More than 30 _ Competitors analyzed

FOCUS point_ N4C Platform

Nature4Cities Paper

Tools assessment for green transition

End user country	Europe	Owner country	Europe
Market target	Practitioners, NBS design and engineering consulting firms. Industrials and common citizens, local urban planning authorities for decision making support. Policy makers (EU commission, national governments, multilateral organizations, UNEP...), regulatory authorities, standardization bodies. Municipalities and city officers. Scientific community and technicians, software developers, researchers.		
Name / Company		Image	Type
N4C Platform + Visualization Interface / N4C Consortium		NATURE 4 CITIES Nature4Cities Platform	Online tool (SaaS)
Description	Complete web-based tool (integration framework) offering all the functionalities expected to be developed by Nature4Cities project: access to knowledge, participation in an NBS project, participation in a Forum, simplified assessment of NBS projects, consultation of all previous results. As part of the N4C Platform, the Integration framework guaranteeing the interoperability of all the elements composing the N4C solution		
Web site	https://www.nature4cities.eu/platform		
Demo / Tutorial	NA		

The N4C Platform provides knowledge repositories, tools for the assessment of benefits, co-benefits and costs of NBS projects, as well as tools to manage stakeholder participation processes.
The platform is innovative because it provides users with a unique and common framework for the evaluation of NBS interventions in their early design phase. Multiple and heterogeneous functionalities are also offered in the same platform. Moreover, it serves as a common workspace for NBS decision making (collaborative tools also available) and it will be easily accessible from end-users thanks to a dedicated visualization interface.

In general, the N4C Platform can be compared with similar platforms /services that can guide users to take informed decisions when analysing the urban context from an environmental point of view (i.e. NBS). Specifically, three competitors have been identified:

- ThinkNature Platform
- Oppla Platform
- SCIS Platform

Nature4Cities Paper

Tools assessment for green transition

End user country		Europe	Owner country	Europe
Market target		Practitioners, NBS design and engineering consulting firms. Industrials and common citizens, local urban planning authorities for decision making support. Policy makers		
Name	Company	Image		Type
ThinkNature Platform	ThinkNature consortium	thinknature		Online tool (Saas)
Description		ThinkNature Platform is a multi-stakeholder communication platform supporting the promotion of NBS. Case studies, best practices, and examples of NBS applications both from technical and economical way are provided.		
Web site		https://platform.think-nature.eu		
Demo / Tutorial		https://youtu.be/6rn6jOZ6Bs8		

ThinkNature Platform, although it is conceived as a multi-stakeholder communication platform, its primary objective is to support the understanding and promotion of Nature based Solutions (NBS). The platform itself foster the collaborations at local, regional, national and EU level by trying to develop synergies among the other NBS related projects. Nevertheless, the ThinkNature platform does not allow performing simulations capable to assess the impact of NBS at different stages and no replication indications are provided.

SWOT category	ThinkNature Platform assessment
Strengths	→ Community-based platform → Engagement of all stakeholders involved in the NBS value chain → Facilitating debate on NBS issues → Powerful tool to disseminate NBS project results → Facilitate collaboration among EU NBS experiences and actors involved → Cross-cutting engagement including EU national and regional decision-makers
Weaknesses	→ No provision of tools to work on NBS design in any phase → Decision-making about NBS could not be supported in terms of technical design and implementation → Fragmentation of the cases presented → A more communication tool other than service for practitioners → Business sustainability not clear → General platform with no distinction of functionalities by user typology → Reliability related to verification and checks of the NBS cases uploaded
Opportunities	→ Necessity to maximize all the NBS work carried out at EU level → Collaboration opportunities are high → Different actors involved in the NBS value chain may be interested in joining to increase their visibility → EU projects which need to increase visibility
Threats	→ NBS service universe is increasing and platforms are being developed in more structured way → Need for full solutions ranging from knowledge sharing to concrete application and services for market → New platforms are being developed and may constitute competitors → Not clear competitive advantage (quantity vs quality)
BUSINESS MODEL ADOPTED	→ Free of charge access → Communication platform born from a CSA project funded by EC → Aggregator of NBS experience within the EU research community

Nature4Cities Paper

Tools assessment for green transition

End user country	Europe	Owner country	The Netherlands
Market target	Policy makers, Farmers and land managers, Students, Communities, Municipalities Academics, Practitioners, NBS design and engineering consulting firms, urban developers, NBS providers, local urban planning authorities for decision making support, urban managers and decision makers, academic		
Name	Company	Image	Type
Oppla	Collaborative ownership	oppla	Online database repository (SaaS)
Description	Oppla is the EU Repository of Nature-Based Solutions. It provides a knowledge marketplace, where the latest thinking on natural capital, ecosystem services and nature-based solutions is brought together. Its purpose is to simplify how we share, obtain and create knowledge to better manage our environment. Oppla is an open platform that is designed for people with diverse needs and interests - from science, policy and practice; public, private and voluntary sectors; organizations large and small, as well as individuals.		
Web site	https://oppla.eu		
Demo / Tutorial	NA		

SWOT Analysis

SWOT category	OPPLA Platform assessment
Strengths	→ Community-based platform → Marketplace for various services and solution on NBS ecosystem → Great visibility at EU level → Extensive business scope: communication and dissemination as well as technical and engineering purposes → Fertile place to harvest new ideas → Proven product → User-friendly platform and visual graphics → Responding to various market demands on NBS → Rich database of NBS by scale, typology and challenges addressed
Weaknesses	→ Offering may result fragmented → Business sustainability not clear → General platform with no distinction of functionalities by user typology → Reliability related to verification and checks of the NBS cases uploaded
Opportunities	→ Necessity to maximize all the NBS work carried out at EU level → Collaboration opportunities are high → Lack of a similar platform about NBS on the market → Need of various services supporting NBS design and implementation → Different actors involved in the NBS value chain may be interested din joining to increase their visibility → Currently the most extensive public available DB of NBS cases
Threats	→ NBS service universe is increasing → New platforms are being developed and may constitute competitors → Not clear competitive advantage (quantity vs quality) → No IP protection is yet in place
BUSINESS MODEL ADOPTED	→ Software as a Service. → Free of charge access. → Market place for various NBS related services and in-house offered services. → Users can engage with Oppla experts as well as the marketplace service providers therein hosted.

Oppla platform has been conceived as a repository for new services and products related to the NBS by introducing an NBS marketplace. The Oppla platform results are more flexible than ThinkNature platform, with a challenging objective and opened to include different tools. However, it represents a showcase for a wide range of external tools which are not integrated and individually marketed. It is a dissemination tool and promotional portal for NBS tools and databases and not exactly a structured system to provide users for NBS early stage planning and decision-making, modelling and assessing procedures.

Nature4Cities Paper

Tools assessment for green transition

End user country		Europe	Owner country	Europe
Market target		Project developers, cities, research institutions, industry, experts and citizens from across Europe.		
Name	Company	Image		Type
SCIS Platform	EU commission	EU Smart Cities Information System		Online database repository (SaaS)
Description		The Smart Cities Information System (SCIS) is a knowledge platform to exchange data, experience and know-how and to collaborate on the creation of smart cities, providing a high quality of life for its citizens in a clean, energy efficient and climate friendly urban environment. SCIS brings together project developers, cities, research institutions, industry, experts and citizens from across Europe.		
Web site		https://smartcities-infosystem.eu/content/about-smart-cities-information-system-scis		
Demo / Tutorial		https://youtu.be/1TV_e67n8C4		

The SCIS platform itself is quite similar to the ThinkNature platform and it does not allow assessing through simulations of the impact of NBS at different stages. For this reason, it can be classified in the "Visionaries box" taking as advantage, compared with the ThinkNature platform, that this time the SCIS platform is directly managed by EU and the level of reliability of the data provided can be considered quite high.

SWOT category	Smart Cities Information System (SCIS) assessment
Strengths	→ Community-based platform → Extensive offering about sustainability and innovations applied to social contexts → Multidisciplinary platform about the sustainable themes applied to cities → Knowledge sharing approach → Dissemination of best practices and lesson learned → Wide offer of webinars and workshops → Objective is to facilitate replication through learning methods based on online courses and interactive workshops → Platform promoting also external services → EC supports guarantees continuous update on new trends and ongoing projects
Weaknesses	→ No NBS focus offered → Course and learning are not the main purpose → Fragmentation of the topics addressed → No customization offered
Opportunities	→ Collaboration with the whole EC supported projects working on sustainability, energy efficiency and NBS in urban areas → Integration with other platforms → Feeding other knowledge sharing platform which could have commercial purposes
Threats	→ Specific courses on NBS may be more attractive → Existence of single offers of courses specifically and often customized on all the topics addressed by SCIS → New platforms about NBS also providing free access are being developed and may constitute competitors
BUSINESS MODEL ADOPTED	→ Public service supported by the European Commission gathering key information and data about the extensive range of topics regarding smart cities. → Services, knowledge, webinars, and workshops are offered free of charge

Nature4Cities Paper

Tools assessment for green transition

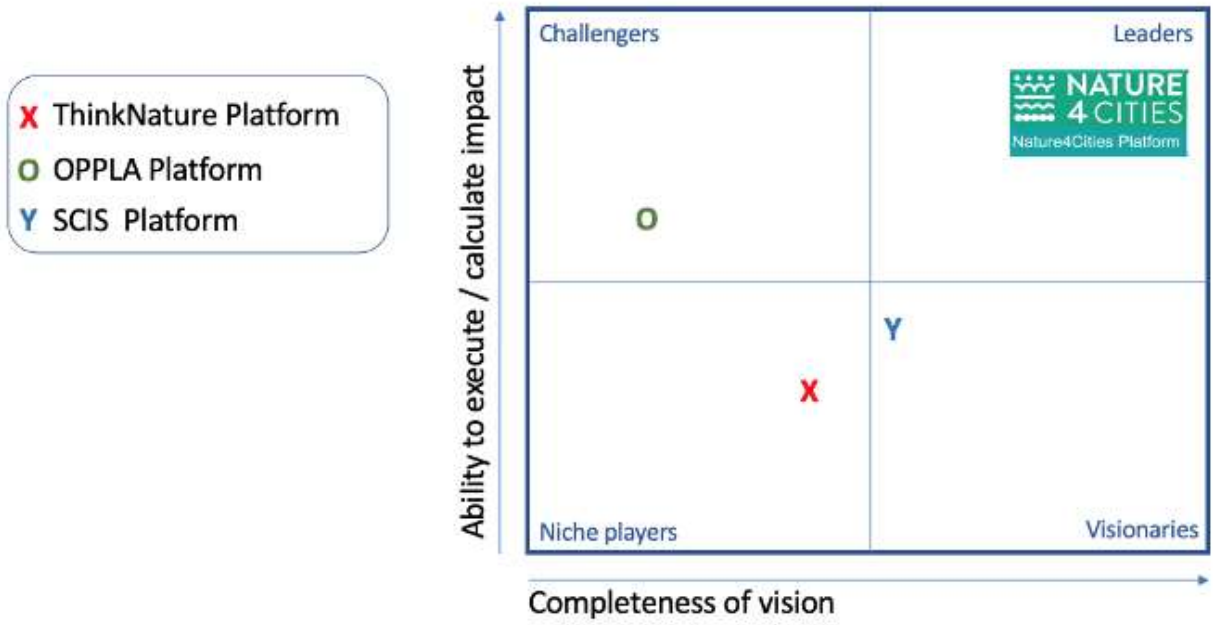


Figure 7: Market positioning of N4C Platform towards the competitors

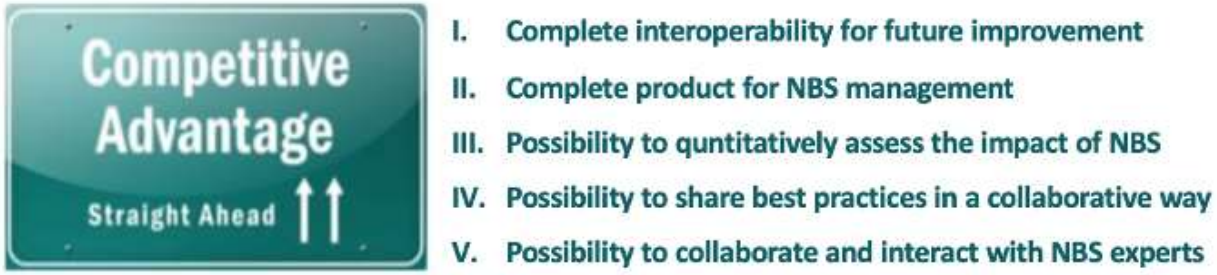


Figure 8: N4C Platform competitive advantages

N4C Platform offers to the end users (expert, citizen, or municipality) **user-friendly tools and visualization interface that can guide through the design, implementation and maintenance phase of a green infrastructure realized in an urban context**. It allows performing **simulation at different levels** of details (depending on the end users' needs) to assess at an early stage, the impact of the green infrastructures on the urban context in order to take informed decisions. To reach these objectives a group of tools populate the Platform to provide different analyses of the urban context. The platform also includes the **possibility to collaborate and interact with NBS experts**. For these reasons, the N4C Platform is conceived as a **complete product** (Leaders Box in the matrix depicted in Fig. 7). It gives the possibility to quantitatively assess the impact of NBS by guiding the end-users through the selection, implementation, and maintenance of NBS

Thank you for your attention!

Domenico Perfido (R2M Solution)

NATURE 4 CITIES

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#Nature4Cities