Nature Based Solutions for re-naturing cities: knowledge diffusion and decision support platform through new collaborative models

Reporting

Project Information

Nature4Cities

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Project website

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Ongoing project

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Overall budget
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EU contribution
€ 7 499 981,25

Coordinated by
NOBATEK INEF 4
France

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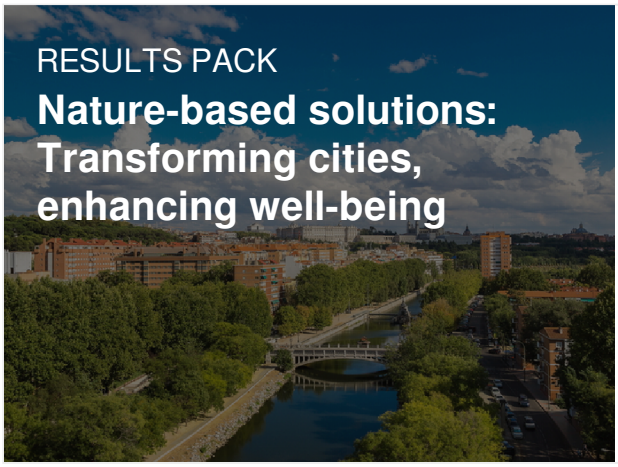

13 August 2020

Periodic Reporting for period 1 - Nature4Cities (Nature Based Solutions for re-naturing cities: knowledge diffusion and decision support platform through new collaborative models)

Reporting period: 2016-11-01 to 2018-04-30

Summary of the context and overall objectives of the project

The human society is facing a broad range of challenges, such as unsustainable urbanization and related human health issues, degradation and loss of natural capital and the ecosystem services it provides, climate change and an alarming increase of natural disaster risks. Currently over 70% of Europe's population live in cities and 36 million new urban citizens will need housing, employment and care by 2050. There is growing recognition and awareness that nature can help provide viable solutions that use and deploy the properties of natural ecosystems. These nature-based solutions (NBS) provide sustainable, cost-effective, multi-purpose and flexible alternatives for various objectives. Working with nature can further pave the way towards a more resource efficient, competitive and greener economy. It can also help to create new jobs and economic growth, through the manufacture and delivery of new products and services, which enhance the natural capital rather than deplete it.

The overall ambition of Nature4Cities project is to provide a strong knowledge base on NBS, as well as scientific and technical tools development for the holistic assessment of NBS urban projects enabling the evaluation of NBS benefits co-benefits and costs. The databases, repositories, and assessment tools will be implemented in a web-based platform including a dedicated platform for citizens' participatory engagement.

The main objectives are :

1. To structure an extensive and multi-thematic knowledge base on NBS for urban re-naturing to serve as an evidence base and reference framework on NBS. A particular focus will be carried out on barriers and opportunities for NBS deployment.
2. To bring the necessary tools for a widespread dissemination of this knowledge towards urban

decision makers, practitioners and citizens, in order to foster the shift in public and private investments from conventional to nature-based or effective combination of nature/grey hybrid solutions to urban challenges.
3. To provide capabilities for accurate diagnosis of urban nature and citizens interactions with urban nature by developing/adapting technologies for urban data acquisition and management; automated diagnosis and characterization of urban nature, collection of citizens requirements and knowledge, innovative ideas regarding NBS.
4. To support NBS-based green development initiatives by providing a holistic multi-criteria assessment methodology for NBS projects, with functional and environmental assessment feeding a broader socio-economic assessment, in order to provide a framework for assessment of benefits, co-benefits and costs of NBS as complex and multifunctional systems.
5. To capitalize on both, an inventory of existing governance, business and financing models (implementation models) supporting NBS projects implementation, and the new assessment capabilities described above, to propose innovative implementation models for NBS projects.
6. To create a web-based platform as a mean to circulate knowledge on NBS, to serve as a decision-helping tool for NBS projects developers, and to enhance the links between the stakeholders of NBS projects, from citizens to local authorities to NBS solutions providers.
7. To demonstrate the platform on NBS projects in four partner Cities; Citta Metropolitana di Milano (Italy), Alcala de Henares (Spain), Ankara (Turkey), and Szeged (Hungary).

Work performed from the beginning of the project to the end of the period covered by the report and main results achieved so far

To answer to these seven objectives, main developments were:
• The typologies of NBS and NBS governance, business and financial models have been established and barriers and drivers for NBS deployment have been identified
• NBS generic entities and first NBS pioneers have been documented in factsheets that form respectively the NBS database and the NBS pioneer projects database and that constitute the NBS projects observatory data
• An urban challenges framework has been structured to cover NBS impacts on 11 Urban Challenges
• The Geocluster4NBS structure tool which is an open online GIS based data repository gathering context data for the implementation of NBS projects within Europe has been developed and data are implemented
• The NBS project observatory and NBS pre-selection tool have been directly included to the development of the Geocluster4NBS tool
• The use of aerial inspection by drones and satellite imagery analysis has been studied and imagery analysis technologies have started to be adapted/developed to provide urban data, urban vegetation and soils data
• As for citizen-related data, the development of Citizens Say tool as the « participation » module of N4C platform, and the adaptation of Colouree tool to spatial data analysis have started
• An integrated system of multi-scalar and multi-thematic indicators has been proposed for the assessment of NBS projects
• The system dynamics modelling framework to assess the spatial and temporal dynamics of NBS solutions and their impacts on the provision of ecosystem services was defined
• An Implementation Models Online Database was developed to structure and categorize existing

innovative governance models, financing mechanism and business models
• A step-by-step guide to offer practical support to practitioners for participatory strategies and mechanism responsible for NBS interventions has been developed
• Initial work has been finalized with regard to the early stage design of Nature4Cities web-based : proposition of an integration strategy, investigation of use cases and user requirements and definition of the physical and logical architectural solution
• Case studies were proposed by the four partner's cities

Progress beyond the state of the art and expected potential impact (including the socio-economic impact and the wider societal implications of the project so far)

An inventory of existing governance, business and financing models supporting NBS projects implementation has been done and assembled in the Implementation Models Online Database developed in T5.1. Innovative participation mechanisms and communication strategies has been proposed and the step-by-step guide developed will offer practical support to practitioners for participatory strategies and mechanism responsible for NBS interventions. This will enhance strategies, new institutional and governance arrangements and new finance and business models, fostering multi-stakeholder involvement, citizens' engagement.

The structuring of an extensive and multi-thematic knowledge base on NBS for re-naturing cities, and the development of the overall NBS framework of Nature4Cities project for the holistic assessment of NBS projects was carried out. Tools for a widespread dissemination of this knowledge have been defined and started to be developed with the technical development of first round of knowledge related to NBS projects observatory, NBS database, NBS pre-selection tool all integrated into the Geocluster4NBS tool.

The development of a holistic multi-criteria assessment methodology for NBS projects has been initiated to provide a framework for assessment of benefits, co-benefits and costs of NBS. Together with the overall NBS framework it will constitute an integrated evidence base and a European reference framework on nature-based solutions in line with the framework provided by the EKLIPSE project.

The next step activities on the platform development together with the pilot activity will provide clear feedback, test the current policy and regulatory and administrative frameworks, enable to communicate on implementation model adapted to natural based solution, test the capacity to improve innovation and enable to overcome barriers.

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Nature4Cities aims to bring Nature back into innovation, planning and their implementation.

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