

WATERWORKS 2017 RDI FUNDED PROJECTS BOOKLET

Title of the project: NATURE-BASED SOLUTIONS FOR WATER MANAGEMENT IN THE PERIURBAN: LINKING ECOLOGICAL, SOCIAL, AND ECONOMIC DIMENSIONS



Acronym and LOGO: NATWIP

Representative image of the project:

Project Coordinator: Nandita Singh (nandita.singh@sh.se)

Institution: Södertörn University, Stockholm

Country: Sweden



Photo:

Project partners

Institution: Royal Institute of Technology (KTH), Stockholm

Country: Sweden

Contact points: Lina Suleiman (lina.suleiman@abe.kth.se)

Institution: Technical University of Catalonia (UPC), Barcelona

Country: Spain

Contact points: Elisabet Roca Bosch (elisabet.roca@upc.edu)

Project partners:

Institution: Norwegian Geotechnical Institute (NGI), Oslo

Country: Norway

Contact points: Sarah Hale (sarah.hale@ngi.no)

Project partners:

Institution: Stellenbosch University, Stellenbosch

Country: South Africa

Contact points: Karen J. Esler (kje@sun.ac.za)

Project partners:

Institution: International Institute for Sustainability (IIS-Rio), Rio de Janeiro

Country: Brazil

Contact points: Agnieszka Latawiec (a.latawiec@iis-rio.org)

Project partners:

Institution: Anugrah Narayan College (A.N. College), Patliputra University, Patna

Country: India

Contact points: Nupur Bose (nupur.bose@gmail.com)

Project website:

www.natwip.solutions

Abstract:

NATWIP intends to contribute to closing the water cycle gap by focusing on water management challenges in landscape areas that have been neglected because they lie in the transition zones between the urban and the rural, commonly referred to as 'peri-urban' areas, where the potential offered by nature-based solutions (NBS) is explored. The overall purpose is to exchange learning experiences among the partnership and promote the debate between science and society in order to increase awareness among practitioners and users on the application of NBS to manage different hydrological challenges such as water scarcity, pollution, and risks related to extreme events like flood and drought in peri-urban areas.

4 specific objectives defined in NATWIP are: 1) Review of international experiences to identify barriers, lessons learned and challenges in the implementation of different NBS to deal with water management in the peri-urban; 2) Designing a methodological framework as a tool to analyze the potentials, content and benefits of NBS in peri-urban, considered from sustainability perspective; 3) Applying the methodological framework at multiple case study sites with an aim to compare situations and draw generalizations; and 4) Creating a common narrative for implementing NBS for water in the peri-urban, through best practices guidelines and policy recommendations.

The research methodology for this project comprises 4 components. The first component relates to review of international experiences on NBS. This involves first desk reviews of existing international literature on NBS for water with a view to identify factors affecting their

implementation and effectiveness, focusing on the peri-urban context, followed by interviews with leading experts in the field. The review considers social, economic and ecological sustainability dimensions related to NBS and the factors affecting these. The second component builds upon the findings from the above exercise, developing a descriptive multidimensional assessment tool to check the sustainability of NBS projects and their resultant sustainability impacts for water management in peri-urban areas. This is in the form of a coherent integrated methodological framework containing specific assessment criteria relevant to the peri-urban context. These criteria will help assess the feasibility and/or value of NBS for water and even help draw the strengths and weaknesses of NBS versus conventional engineering solutions regarding overcoming of water challenges such as scarcity, water quality degradation, restoration or/and naturalization of water cycle in the peri-urban, in order to ultimately close the water cycle gap. In the third component of the methodology, the assessment framework developed above will be applied to understand and assess existing NBS and conventional engineering solutions for addressing water cycle gaps in a number of different case study sites spread across the participating countries. The case studies are based on literature survey as well as field-based first-hand research, with data collection through interviews and focus groups with concerned stakeholders. The case study sites are located in Norway, Sweden, Spain, South Africa, India and Brazil.

Keywords:

Nature-based Solutions, water management, peri-urban, water sustainability, sustainable development

Project structure (WPs description):

WP1: Review of international experiences

Conduct a literature review of international experiences to identify barriers, lessons learned & challenges in the implementation of different NBS. Also conduct interviews with leading experts working with NBS. Further, also conduct a literature review to establish current practices within water management specifically in periurban areas. This activity contributes to the research in WPs 2,3 & 4.

WP leader: UPC, Spain

WP2: Establish methodological framework to assess NBS

Develop a comprehensive framework for assessing the different aspects of the performance of NBS, especially with regard to ecological, economic & social dimensions.

WP leader: IIS-Rio, Brazil

WP3: Apply the NBS assessment framework to case study sites

The results of the assessment framework will be applied in relation to the specific socio-political context for 8 selected case study sites as described in section 1.4. This will include i) a scenario study ii) a comparative analysis & iii) reflection on conditions that favour the implementation of NBS and their driving forces. The studies will be based on literature survey as well as field visits, with data collection through interviews and focus groups with concerned stakeholders.

WP leader: NGI, Norway

WP4: Create a common narrative

Create a narrative based on reasoned analysis, empirical observations & reflections gathered together with relevant stakeholders, on principles, processes & indicators for designing & implementing NBS in peri-urban areas within the pan-European scale. It will bring together outcomes from WPs 1, 2 & 3.

WP leaders: Stellenbosch University, South Africa and Södertörn University, Sweden