EU R & I AgendaNature-Based Solutions Case Studies

Workshop on Implementation of Nature-based Solutions to tackle climate change

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EASME

- One of the EC's Executive Agencies
- Working together with the parent DGs
- Managing EU programmes
  - Parts of H2020 → SC5 Environment and Resources
  - SME-instrument
  - EMFF
  - LIFE
  - COSME

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

- Aim: identify NBS actions in European cities, and highlight best practices
- These include NBS as such but also other actions considered as enabling the implementation of NBS
- The case studies provide examples of the multiple benefits delivered by different kinds of NBS implemented in EU cities

Opportunity to increase uptake of results

✓ Interoperable with other platforms (BISE, Climate Adapt, etc…

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

- ✓ (2016) NBS for water and climate resilience in urban areas (40 M €)

UNaLab
URBAN NATURE LABS

www.unalab.eu

Grow Green

www.growgreenproject.eu

Connecting Nature

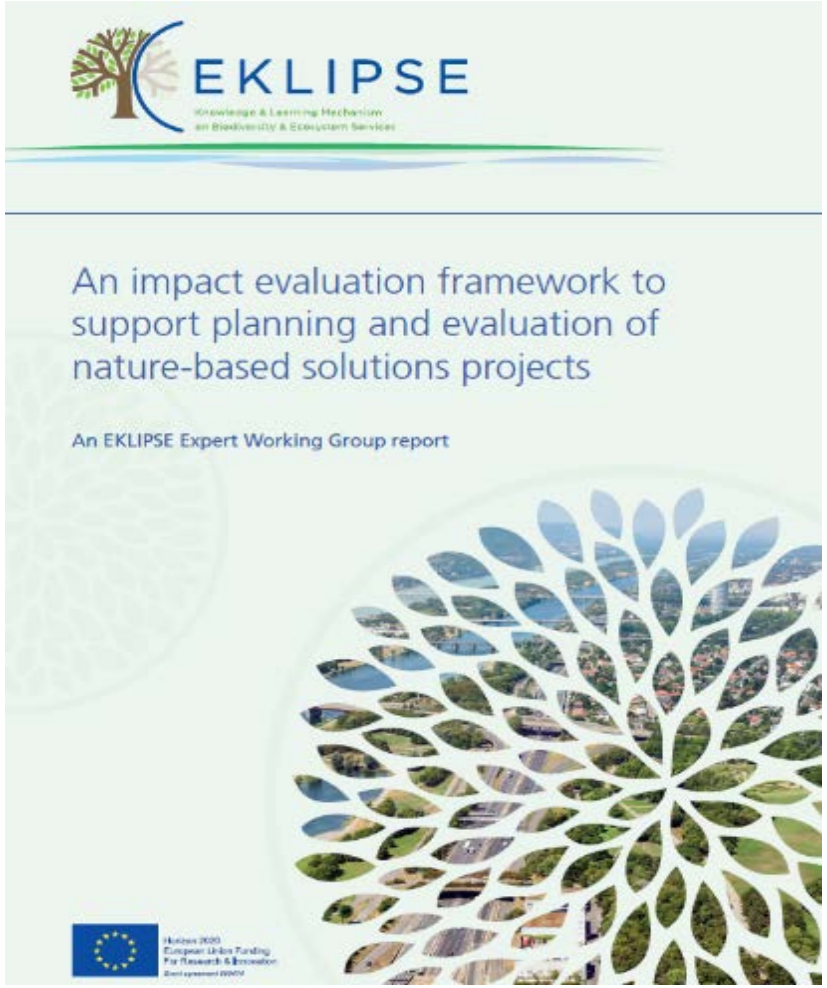
www.connectingnature.eu

URBAN GREEN UP

www.urbangreenup.eu

NBS challenges - EKLIPSE NBS IEF

- ✓ Climate mitigation and adaptation
- ✓ Water management
- ✓ Coastal resilience
- ✓ Green space management (including enhancing/conserving urban biodiversity)
- ✓ Air/ambient quality
- ✓ Urban regeneration
- ✓ Participatory planning and governance
- ✓ Social justice and social cohesion
- ✓ Public health and well-being
- ✓ Potential for new economic opportunities and green jobs



Climate change adaptation and mitigation

- Carbon savings
  - ✓ Tonnes of carbon removed or stored per unit area per unit and total amount of carbon (tonnes) stored in vegetation
- Temperature reduction
  - ✓ Decrease in mean or peak daytime local temperatures (°C)
  - ✓ Heatwave risks (number of combined tropical nights (≥20 °C) and hot days (≥35°C)

Water management

- Physical indicators for flood reduction:
  - ✓ Flood peak reduction. Increase time to peak
  - ✓ Run-off coefficient in relation to precipitation quantities (mm/%)
- Chemical indicators for water quality
  - ✓ Abatement of nutrients (N,P) and metal pollutants (%) in surface water

Connecting Nature

Overall goal: Innovating with nature to co-create climate resilience in cities

Consortium: 31 project partners involved from 16 European Countries, Brazil, China, Korea & The Caucasus (Georgia and Armenia)

community partners and NGOs, local government actors and agencies, SME's and larger industry partners, academic and research institutes

Coordinator: Trinity College Dublin, Ireland

Budget: Total €12 million EC contribution €11.4 million

Bringing cities to life, **Bringing life into cities.**

People: 200+

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 730222

Our Approach: twinning & mentoring

Connecting Nature

POZnań

Trinity College Dublin
The University of Dublin

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Connecting Nature

Trinity College Dublin
The University of Dublin

Emerging Global Issues

- Significant environmental / ecological / climate change
- SDGs must to be embedded in all new infrastructure
- Shifting patterns of habitation / migration
- Growing societal concerns: health / well-being / happiness
- Management / building / design standards continually changing
- Co-financing models are adapting to the new global realties
- Moving from ‘building cities’ towards ‘city-making’ – co-design
- Consumers / citizens want multiple gains / co-creation

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Connecting Nature Vision

- Establish **co-creation processes** for nature-based solutions in cities
- Develop **indicators** of impact and effectiveness of nature-based solutions
- Develop new **business models** for financing nature-based solutions
- **Replicate and scale** nature-based solution planning processes globally
- Embed nature-based solutions in city-making
- Innovate with nature-based solutions

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Key questions for nature-based solution scaling

- What does co-creation / co-design *look* like?
- How do citizens engage meaningfully to deliver results *and* innovation?
- Who moderates the process?
- When is the co-creation process ‘finished’?
- How do we measure the success or failure of a co-creation process?

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Stakeholder engagement for scaling out nature-based solutions

- Front-runner cities - Genk (BE), Glasgow (UK), & Poznań (PL):
- Series of mapping exercises to identify policy needs
- Initial engagement with city departments (aim: silo busting)
- Co-creation city guidelines followed by a reflexive monitoring process
- Iterative / continual throughout the project (no ‘results’)
- Co-creating business models / KPIs that are locally relevant

Lessons (so far):

- Cities and their officials differ widely in the level of knowledge of the potential nature-based solutions and their impact(s) – making the project more challenging than expected
- Inherent difficulties working with communities – requiring third party assistance from SME’s giving rise to the potential for nature-based innovations in the future
- Difficult for cities to meet the ‘demand’ for nature-based solutions from communities

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Barriers, Objectives and Work Packages

Barrier	Objective	Activities/ Work Packages
Evidence: insufficient evidence of NBS benefits and replicable delivery mechanisms, to underpin city-level NBS policy development	Develop an evidence base setting out the benefits of NBS and mechanisms for delivering them, through the delivery of demonstration projects	WP1 – Demonstration Projects WP2 – Monitoring and Evaluation
City NBS policies: there is no standardised or easy-to-use methodology for the development of city NBS policies	Develop an easy-to-use and replicable approach to support the development of city NBS strategies i.e. the 'Green Cities Framework'	WPs 1 + 2 + 3 – develop, deploy, evaluate the effectiveness and update the Green Cities Framework
NBS Strategy Implementation and Replication	Create the global market and policy conditions required to enable successful implementation and replication of city NBS strategies	N/A
a) Insufficient engagement and capacity in cities	Build capacity in cities, across politicians, policy-makers, businesses and citizens	Frontrunner cities – WP1, 3 & 5 Follower cities – WP1, 3 & 5 Replication Cities – WP5
b) Regional, national and international policy development	Develop robust, evidence-based recommendations for regional, national and	WP4
	international policy development	
c) Lack of viable business models for investment in NBS projects	Establish and promote viable business models for investment in NBS projects	WPs 1, 2, 4 & 5
d) Global NBS market	Support development of the global NBS market	WPs 4 & 5

Partners

Cities and demonstration project partners

- Manchester: MCC + Guinness Partnership
- Valencia
- Wroclaw
- Brest
- Zadar
- Modena
- Wuhan

Universities

- University of Manchester
- Valencia Polytechnic University
- Wroclaw University of Environmental and Life Sciences
- University of Cambridge

Technical experts

- Trinomics
- International Union for Nature Conservation + HQ
- Leitat
- Bipolaire
- PAT

Economic development and innovation agencies

- New Economy Manchester/ Greater Manchester Combined Authority (Manchester)
- InnDEA (Valencia)
- AWAW (Wroclaw)

Project, technical and innovation management

- Manchester Climate Change Agency
- Tecnalia

Case study 1 : GrowGreen Demonstration project: Valencia

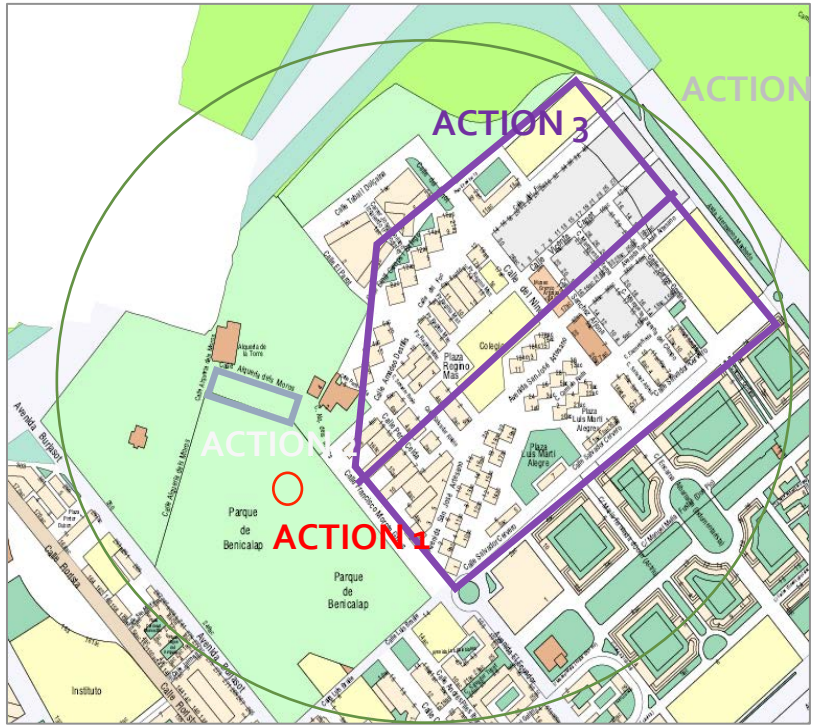
FUNDING-H2020 SCC-02 NBS

BENICALAP – CIUDAD FALLERA DISTRICT

It is located in the frontier city-orchards. It is a economically depressed area, with scarce green áreas and suffers from signficant heat stress in the Summer months.

OVERVIEW OF THE DEMONSTRATION PROJECT

ACTION 1 –Vertical eco system-grey water disinfection and desalination used for irrigation.
ACTION 2 –Sustainable small forest
ACTION 3- Green/Blue Corridor to approach forest
ACTION 4-Solutions to thermal stress hotspots and energy poverty
ACTION 5-Cross action "spaces for collaboration"



KEY MILESTONES:
Stakeholder engagement and Co-design: June 17-Dec 2018
Statutory approvals and procurement-Jan 19-May 19
Construction: June 19 –Nov 19
Monitoring and evaluation-Nov 19-Nov 21

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OBJECTIVES:

- **Environmental:Heat stress, biodiversity,storm water management.**
- **Social:Access to Green spaces, health and well being.**
- **Economic:Employment, earnings, land and property values.**

PROGRESS:

- **Undertaken stakeholder engagement and co-design process.**
- **Benchmarking of design alternatives using Eco distr-ICT tool. https://ecodistr-ict.eu/**
- **Collected pre -greening baseline data- available on Valencia open data platform http://gobiernoabierto.valencia.es/en/data/**

CHALLENGES AND LESSONS LEARNED:

- **General stakeholder engagement in deprived communities and NBS is even harder!** ***Use experts eg, Paisaje Transversal in Valencia, sell the benefits on NBS in terms of social and economic impact on citizens.***
- **Procurement delays and ridigity.*Allow lots of time in the programme for procurement, make small TEC companies part of the project consortium if externally funded to avoid procurement constraints- eg, Leitat-vertical eco system.***
- **Ensuring the design maximizes impact on KPIs.** ***Use a tool such as Ecodistr-ICT to ensure impact of the design features is analysed and maximized.***

European Commission

Grow Green

www.growgreenproject.eu

Connecting Nature

www.connectingnature.eu

Thank you and…

An open invitation to work, together, with nature!

EC R&I Nature-Based Solutions

Horizon2020

EASME