

Build Back Better with Nature-Based Solutions

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Session 4: Life on Land – How COVID-19 recovery and 2030 Agenda can only be fully achieved through addressing SDG 15

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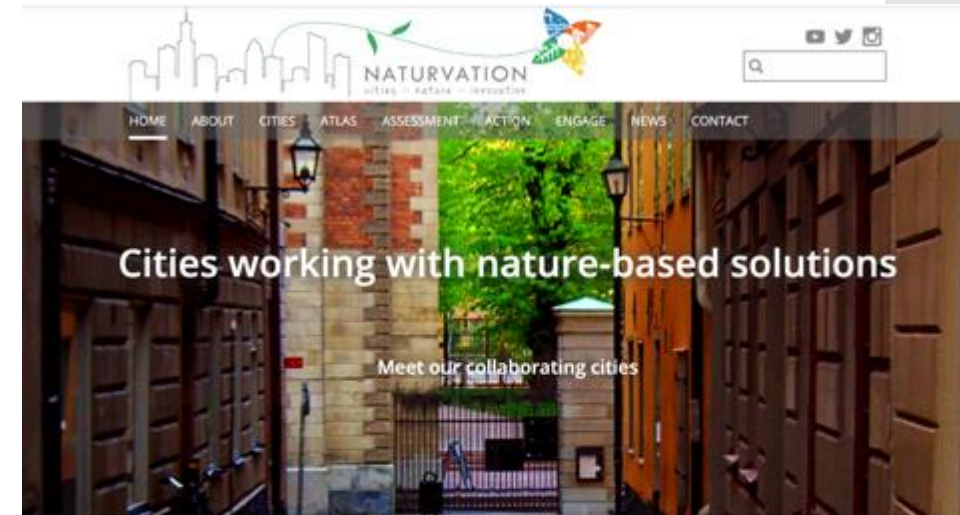


NATURVATION

NATure-based **Urban**

innoVATION

- 4-year research project (2016-2020+)
- Involving 14 institutions across Europe
- Funded through the EU Horizon 2020 Programme
- *Seeks to develop understanding of **what NBS can achieve**, examine how **innovation** can be fostered in this domain, and contribute to **realising the potential of NBS** for responding to urban sustainability challenges.*



LEARNING
TOGETHER



INNOVATING
IN CITIES



EXPLORING
THE ATLAS



ASSESSING
VALUE



SDG 15: Life on Land

- Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss



Make Space for the New Normal

A Roof ...



... or a storm water management,
climate adaptation, biodiverse
habitat which improves quality of life





Nature-Based Solutions (NBS) are deliberate interventions that are inspired or supported by nature.

“living solutions that bring more nature and natural features and processes into cities ... through locally adapted, resource-efficient and systemic interventions”
(European Commission, 2017).



1. Building greens (external)



2. Green areas connected to grey infrastructure



3. Parks and (semi)natural urban green areas



4. Allotments and community gardens



5. Green indoor areas



6. Blue areas

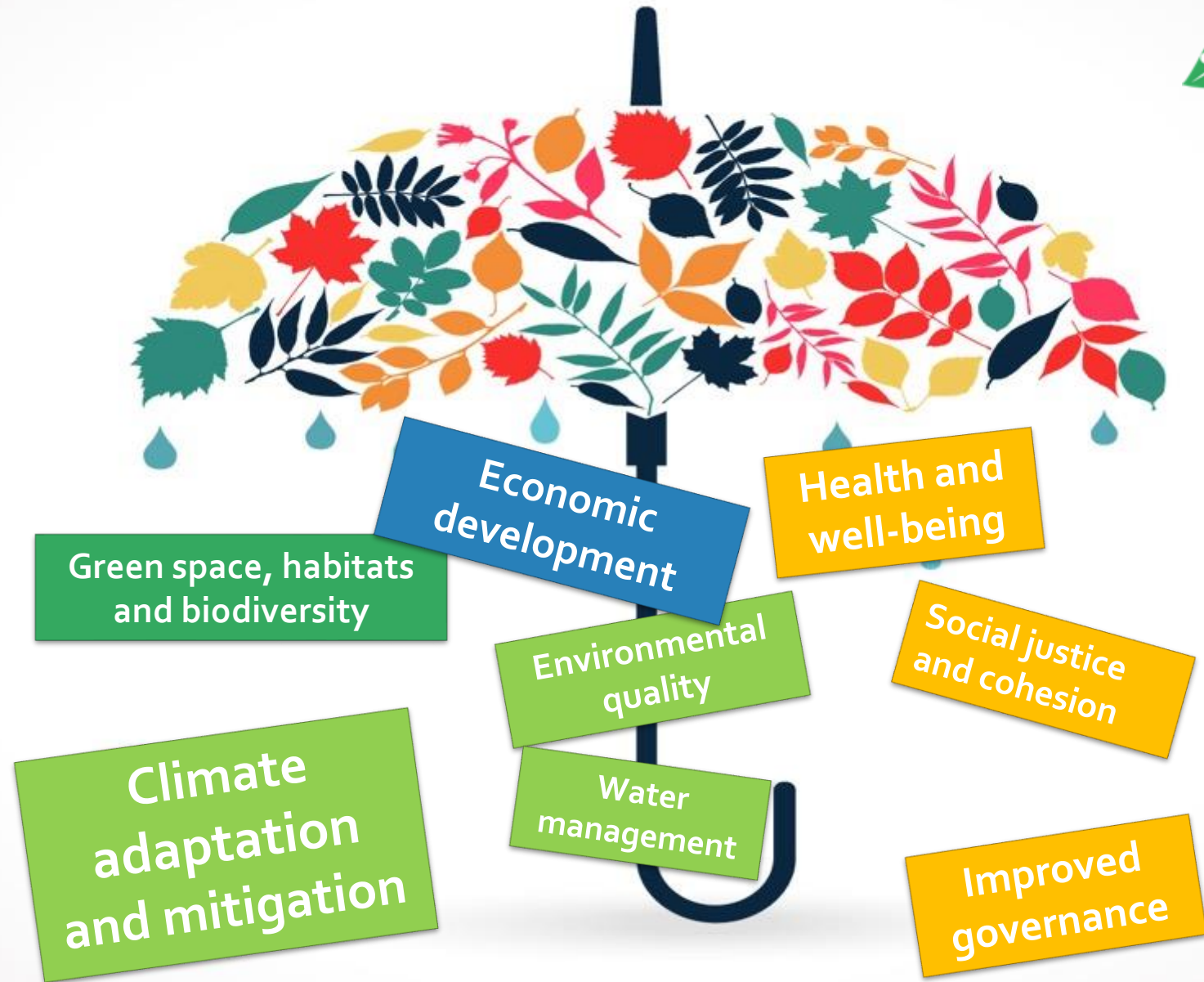


7. Green areas for water management



8. Derelict areas

Nature-Based
Solutions can
address various
sustainability
challenges



Example of links between SDG15 and other SDGs



Source: [Hazarika, R., & Jandl, R. \(2019\). The Nexus between the Austrian forestry sector and the sustainable development goals: a review of the interlinkages. *Forests*, 10\(3\), 205.](#)

Welcome to the Atlas

A collection of more than 1000 inspiring nature-based solutions from European cities and beyond

Select Key Challenges



Select Nature-based Solutions



Global focus on Climate 1

[Show projects](#)



Advanced Filter 1

Challenges addressed ▾ Nature-based solutions ▾

Region ▾ Country ▾ City ▾ Focus ▾

Management set-up ▾ Initiating organisation ▾

Project cost ▾ Type of financing source ▾

Social impacts ▾ Environmental impacts ▾

Presence of formal monitoring system ▾



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WWW.UNA.CITY



Urban Nature Atlas

www.una.city



The most comprehensive database of urban NBS in Europe and beyond



Based on a systematic survey and rigorous multi-stage quality control



Database development: July – August 2017

Global NBS cases with support by the British Academy: 2021 - ongoing




Includes 1000 interventions from 100 European cities

Plus 94 cases from cities outside of Europe



Example 1: Singapore





AtlasAboutMethodologyAnalysisUNA GlobalViabilityFAQAdd project


Bishan-Ang Mo Kio Park & Kallang River Restoration

(last updated: October 2021)

The redevelopment of the Bishan-Ang Mo Kio Park (Singapore) saw the naturalisation of the previously channelised Kallang River, as well as the installation of wetland cells as water cleansing biotopes and creation of butterfly habitats (Ref. 1). The Kallang River was previously confined to a concrete canal that ran to the southern edges of Bishan-Ang Mo Kio Park (Ref. 1). The channel segregated the two residential areas situated on either side of the park, with the river's 2.7km continuous concrete channel being crossable at only certain defined points (Ref. 3). Following its naturalisation, culminating in 2012, the now 3.2km meandering river is considered the park's highlight, "marg[ing] seamlessly with the park's greenery" (Refs. 1 & 6), and creating a "live-green recreational network which is well-integrated with nearby residential areas" (Ref. 2).



Kallang River before and after naturalisation
<https://www.archdaily.com/794460/3-urban-design-projects-with-nature-based-solutions>



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Singapore, Singapore

City population: 5704000

Durations: 2009 – 2012

Scale: Micro-scale: District/Neighbourhood level

Project area: unknown

Type of area: Public Greenspace Area



Overview

Governance

Financing



Impacts and Monitoring

References





Kallang River before and after naturalisation

https://www.haw-hamburg.de/stresem/hsu/130/1/1/talabauw_ka.htm.pdf





Aerial view of Bishan-Ang Mo Kio Park and Kallang River

https://www.nparks.gov.sg/-/media/nparks/branch/ehgreen/ug5/ug5_09.pdf



Clearing Biotope

https://www.nparks.gov.sg/-/media/nparks/branch/ehgreen/ug5/ug5_09.pdf



Bridge connecting two previously segregated residential areas

https://www.nparks.gov.sg/-/media/nparks/branch/ehgreen/ug5/ug5_09.pdf






Example 1: Singapore





Example 2: Poland


[Atlas](#) [About](#) [Methodology](#) [Analysis](#) [UNA Global](#) [Visibility](#) [FAQ](#) [Add project](#)

Therapy through horticulture

Projekt zagospodarowania przestrzeni z uwzględnieniem miejsca do hortiterapii przy budynku Zespołu Szkół nr 16 w Białymstoku


Last updated: October 2021

The author of the project [visualized, not completed] designed a recreation area for youth from schools, dormitories and people interested in need of horticultural therapy in one of the school courtyards in Białystok. The project would involve revitalization and modernization of the school's courtyard to adapt it to the needs of people with disabilities and adequately manage the greenery around. The garden would allow for therapeutic work with plants, art therapy, and activities that support the mental and physical health of the participants [1,3]. In 2015 the project was in envisioned and pitched only, but it did not receive funding from the participatory budget of Białystok.



Horticulture therapy in Białystok

Source: http://atlas.naturvation.eu/sites/default/files/rtas/files/bialystok_maly.pdf



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Białystok, Poland

City population: 293541

Duration: in planning stage – 2015

Scale:
Sub-microscale; Street scale
(including buildings)

Project area: unknown

Type of area:
Building, Other



Example 2: Poland



Horticulture therapy in Białystok visualisation



Example 3: France



Last updated: October 2021

The water treatment station in Marquette-lez-Lille had a makeover in September 2014. The facility was renovated and rebuilt with cutting-edge technologies and included a new energy production unit. The plant serves 37 municipalities with treated water. The renovation project enabled the station to be integrated into an urban environment. Almost 17 acres have been transformed into a wetland with the planting of more than 20,000 trees and shrubbery. Encircled by a high-speed road, the Deûle canal, a forest and homes, this classified site is marked by exceptional biodiversity. The Marquette station is recognized as a leader in its industry and was nominated by Global Water Intelligence (GWI) as one of the four projects of the year worldwide for 2014 (Ref 1).



The map shows the location of the Ovilleo Wetland in Marquette-lez-Lille, France. A red pin marks the site. The map includes a scale bar and a legend. Below the map, the following information is provided:

Lille, France

City population: 1116265

Duration: 2010 – 2015

Scale:
Micro-scale: District/neighbourhood level

Project area: 69000 m²

Type of area:
Industrial



Example 3: France





Urban Nature Atlas

Sustainability Challenges

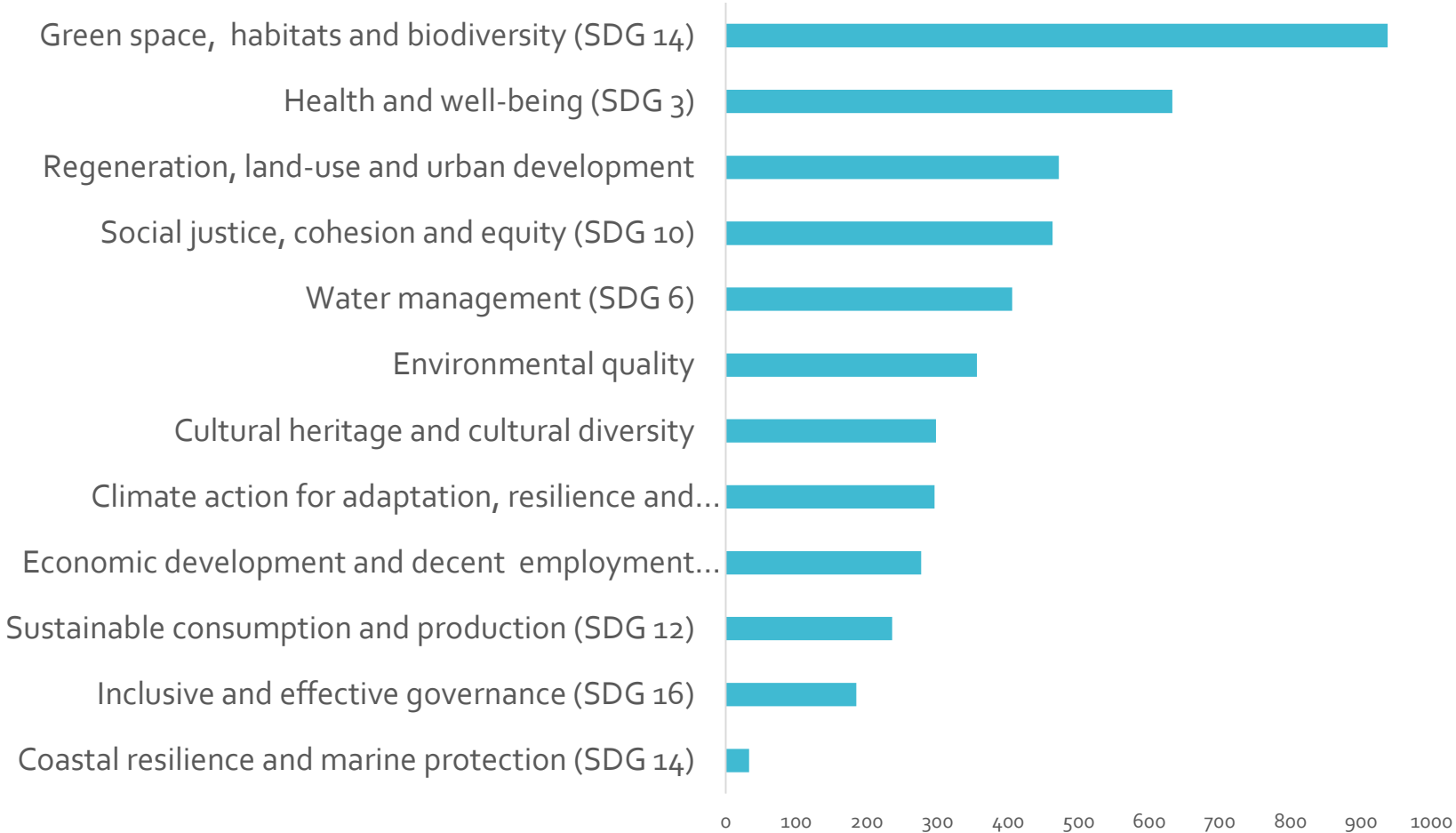


Figure 1. Sustainability challenges addressed by NBS in the Urban Nature Atlas.



Contributing to a Green Recovery?

Nature-based solutions have the potential to contribute to climate and nature goals whilst promoting health and well-being

Mitigation

- Reduce energy demand through passive cooling and heating
- Reduce embodied carbon in infrastructure
- Carbon sequestration

Adaptation

- Storm water & flooding management
- Reduce impact of heatwaves – cooling city & population health
- Coastal protection

Nature

- Protect & Conserve biodiversity
- Enhance water, soil and air quality
- Create new connections and values for nature

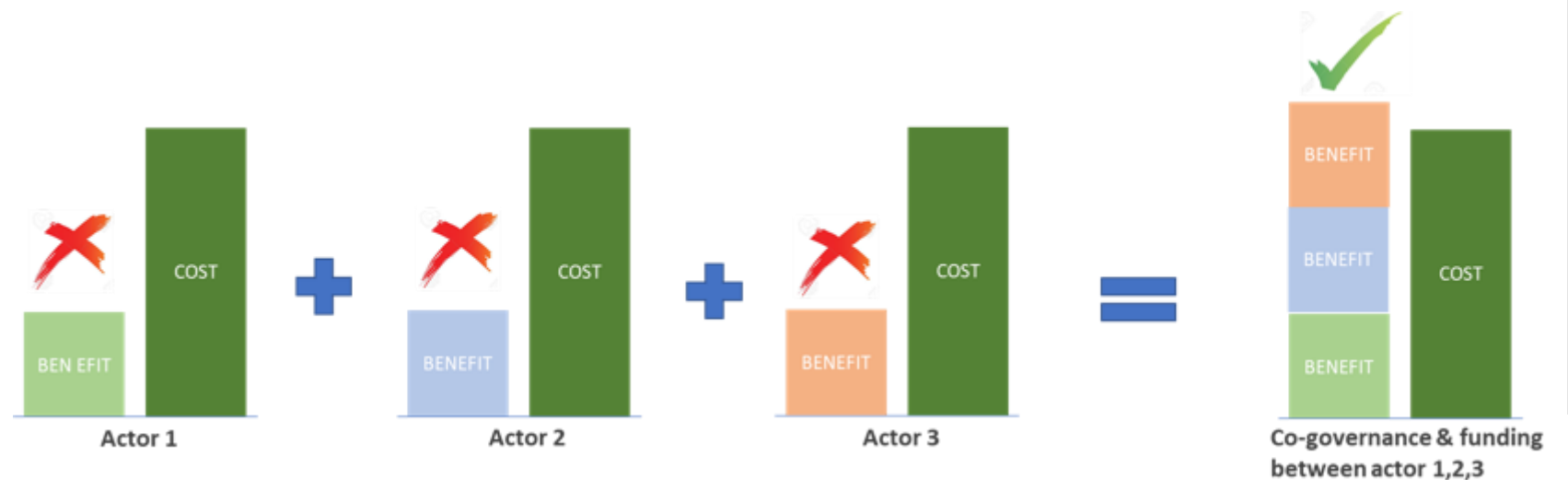
Well-Being

- Support physical & mental health
- Enable community empowerment
- Foster social inclusion & diversity



NBS benefits?

- Urban NBS deliver multiple benefits; the ownership of these benefits is scattered between different actors
- Leads to 2 coordination problems:
 1. Valuation of **multiple benefits** (budget often earmarked for one benefit)
 2. Collaboration between **multiple actors** to co-fund and each reap benefits
- Calls for an **integrative business case** – of benefits and actors
- Need for **investment template** that recognizes value of relevant benefits





Pathways for mainstreaming NBS to contribute to the SDGs

- Pathway 1: Involving a wide spectrum of actors
- Pathway 2: Strengthening the local level
- Pathway 3: Addressing multiple sustainability objectives at the same time
- Pathway 4: Making institutional arrangements for integrated sustainable development
- Pathway 5: Monitoring and assessing sustainable urban transformation.

Source: Gerstetter, C, I. Herb and A. Matei. (2020) Mainstreaming Nature-Based Solutions – Sustainable Development Goals Available at:

https://naturvation.eu/system/files/mainstreaming_nbs_for_sdg.pdf

Urban Nature Explorer



Sustainability
challenges

Sustainability
goals and
targets

Nature Based
Solutions

Impacts!

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