

SDG 11: The potential of nature-based solutions

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Urban transformations





Make Space for the New Normal

A Roof ...

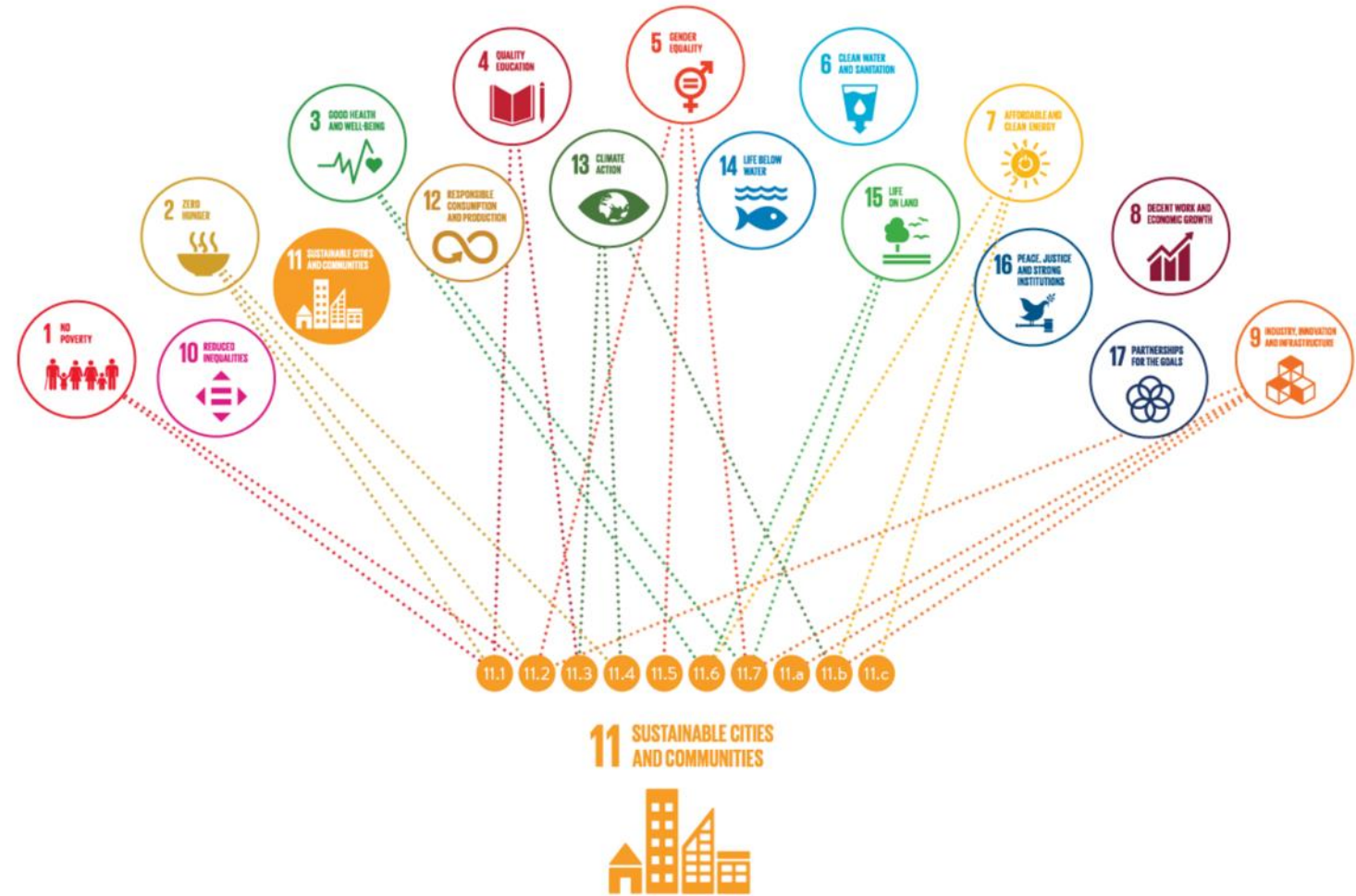


... or a storm water management,
climate adaptation, biodiverse
habitat which improves quality of life



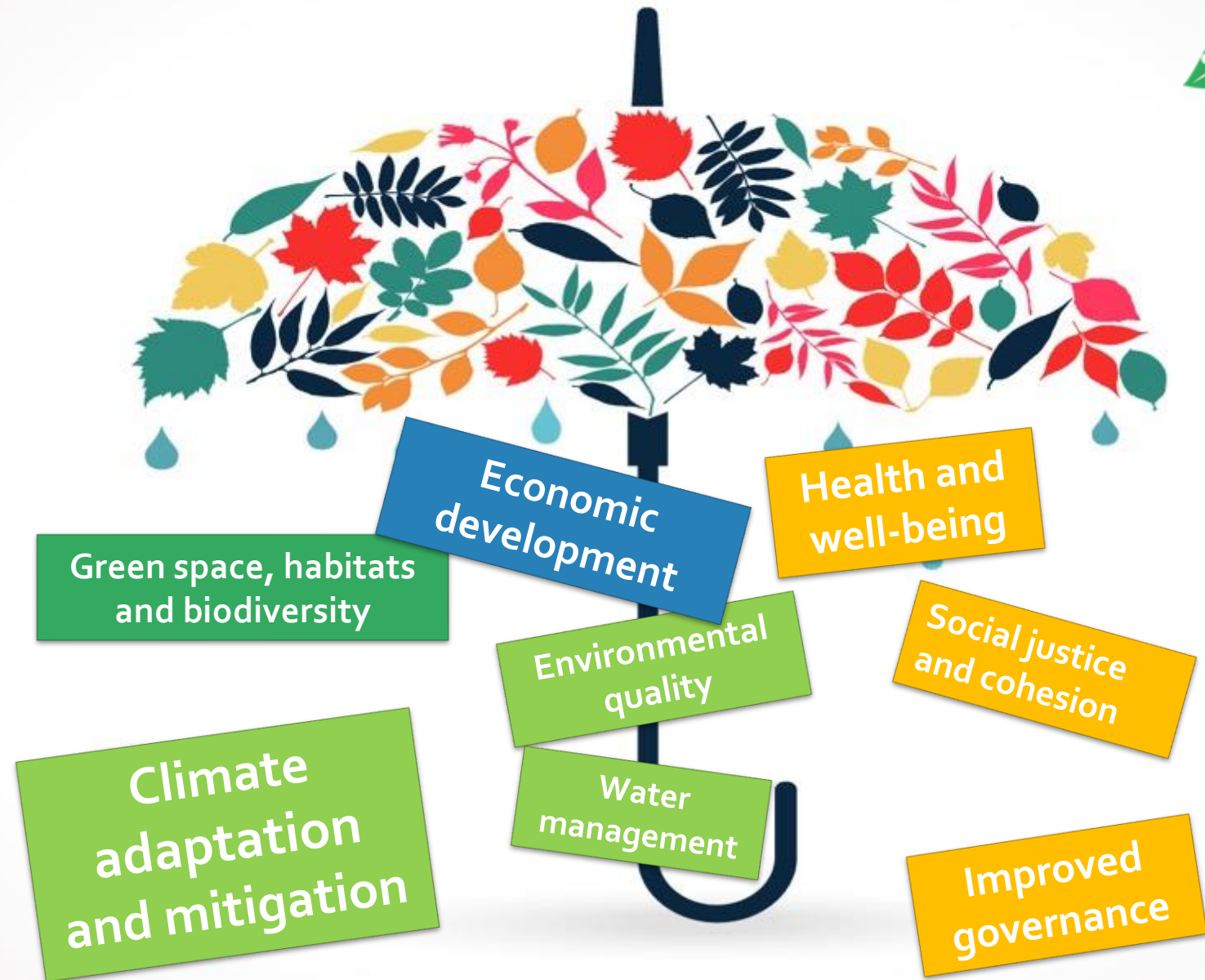


SDG 11 interlinkages: What is the role of nature in cities?



Source: Kabisch et al. 2019

Nature-Based
Solutions can
address various
sustainability
challenges





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

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 i

[Show projects](#)

Funders



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URBAN NBS

WHERE?

WHEN?

WHY?

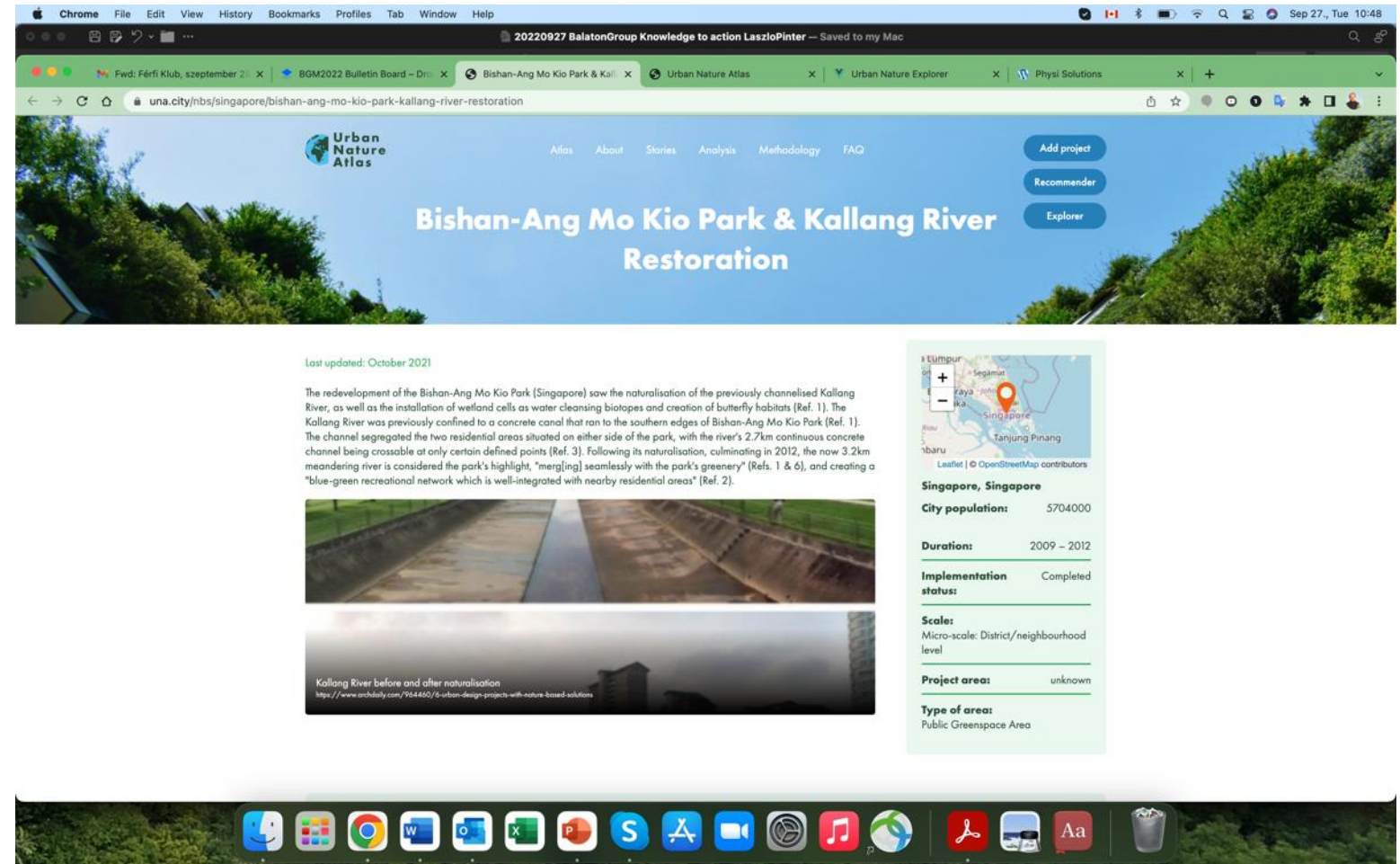
WHO?

HOW?

\$\$?


IMPACT?

una.city





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://ofas.naturvation.eu/sites/default/files/nbs/files/bialystok_maly.pdf



Leaflet | © MapTiler © OpenStreetMap contributors

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 3: Colombia

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

Santalaia Building Vertical Garden

Jardín vertical edificio Santaiaia

Last updated: November 2021

Santalaia is a high-end, multi-family residential building located in the heart of downtown Bogotá, Colombia. Santalaia is often referred to as "the green heart of Bogotá" and is seen as an icon of sustainability [1]. The 11-story building was completed in 2015 and all eleven floors are engulfed in many species of plant wildlife to encourage biodiversity. There are 115,000 native plants of 10 different species covering a total area of 3117 m² [2,3]. The plants included on the exterior of the building rely on a hydroponic system and provide a model of how to increase green zones in urban areas. A vertical garden of this size provides natural beauty in the middle of concrete Bogotá while mitigating the carbon footprint of more than 700 people. An additional benefit of Santalaia's vertical garden is that the plants create a "green carpet" that serve as insulation and reduce the use of air conditioners, an increasingly valuable contribution during times of rising temperatures due to climate change [5,6].



More than 10 different plant species from compatible families
<https://blogging-techies.com/el-jardin-vertical-mas-grande-del-mundo-florece-en-el-corazon-de-bogota/>



Leaflet | MapTiler OpenStreetMap contributors

Bogotá, Colombia

City population: 7181000

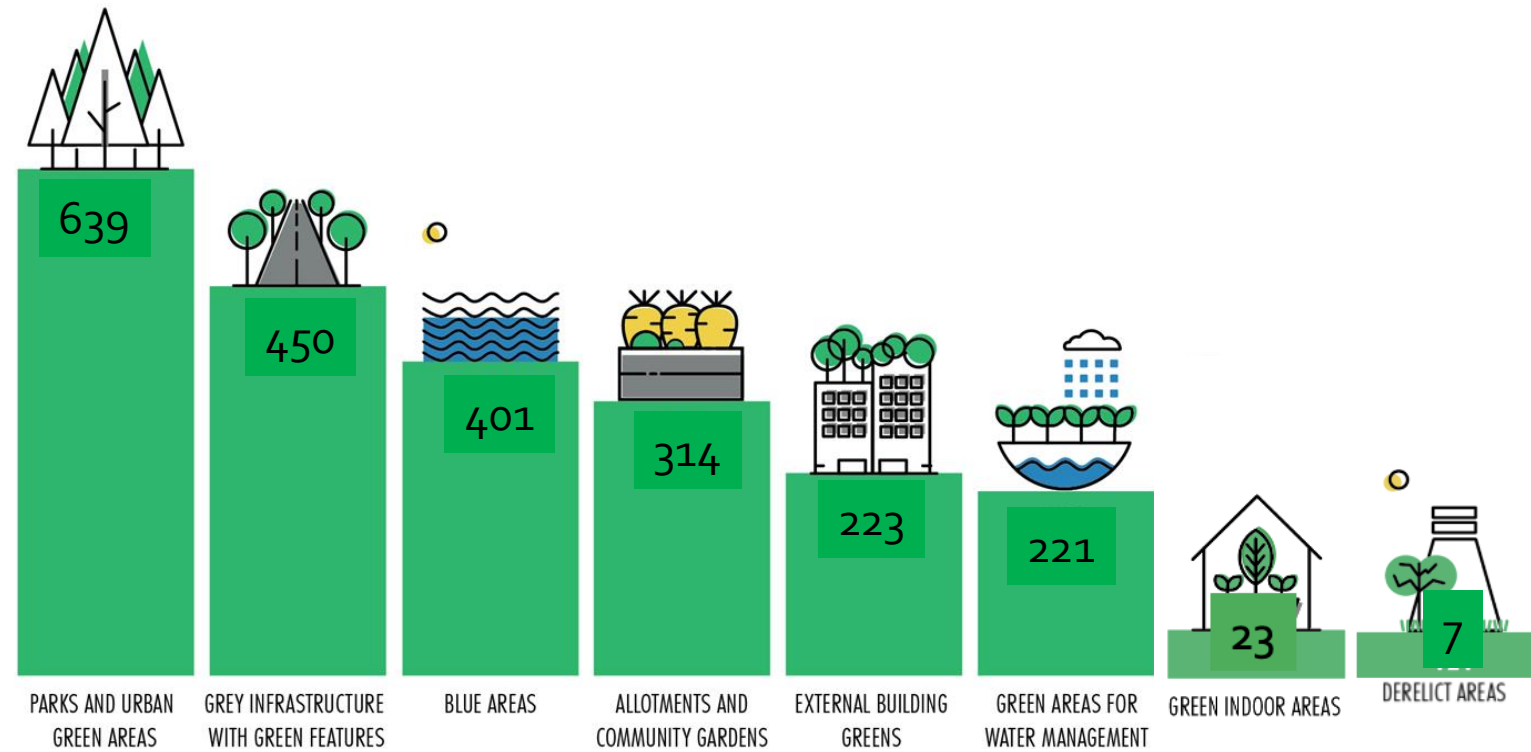
Duration: 2013 – 2015

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

Project area: 3117 m²

Type of area:
Residential, Building

NBS types in the Urban Nature Atlas





Urban Nature Atlas

Sustainability Challenges

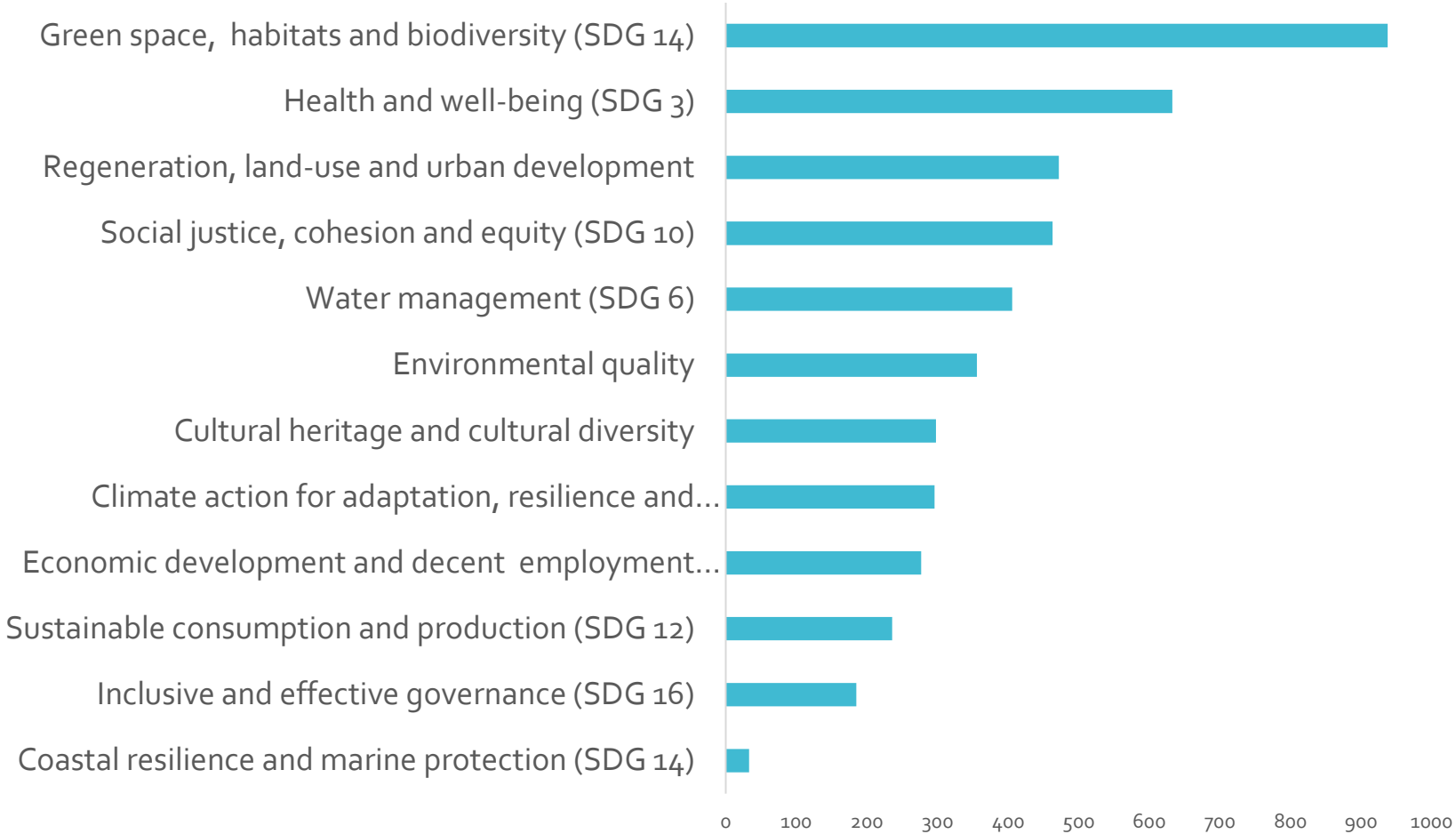


Figure 1. Sustainability challenges addressed by NBS in the Urban Nature Atlas.

Impacts on health and community

Gain in activities for recreation and exercise
(547)

Improved physical health
(164)

Improved mental health
(134)

Access to urban green space (448)

Improvement in people's connection to nature (447)

Opportunities for social interaction (337)

Access to healthy and affordable food
(174)

Improvement of liveability (157)

Opportunities for marginalized group...



Impacts associated with climate and biodiversity

Protection against
flooding (339)

Stormwater
management
(224)

Lowered local
temperature
(172)

Carbon
sequest...
(115)

Reduced emissions (72)

Increased number of
species present (434)

Conservation or
restoration of
ecosystems
(304)

Reduced loss
of biodiversity
(286)

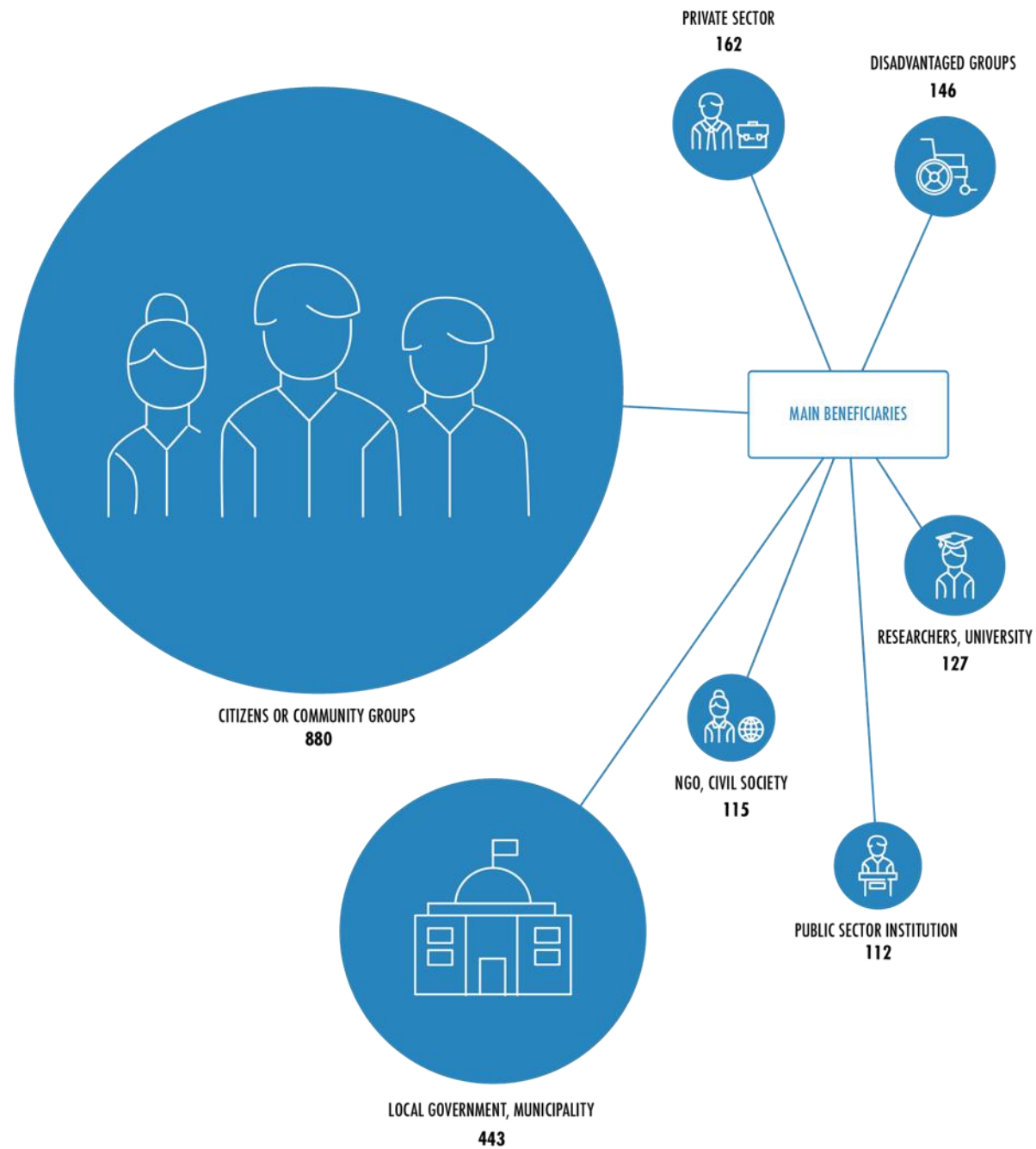
Support of
pollination
(119)

Protection
of
threatened
species (93)

Ecological
connectivity (156)



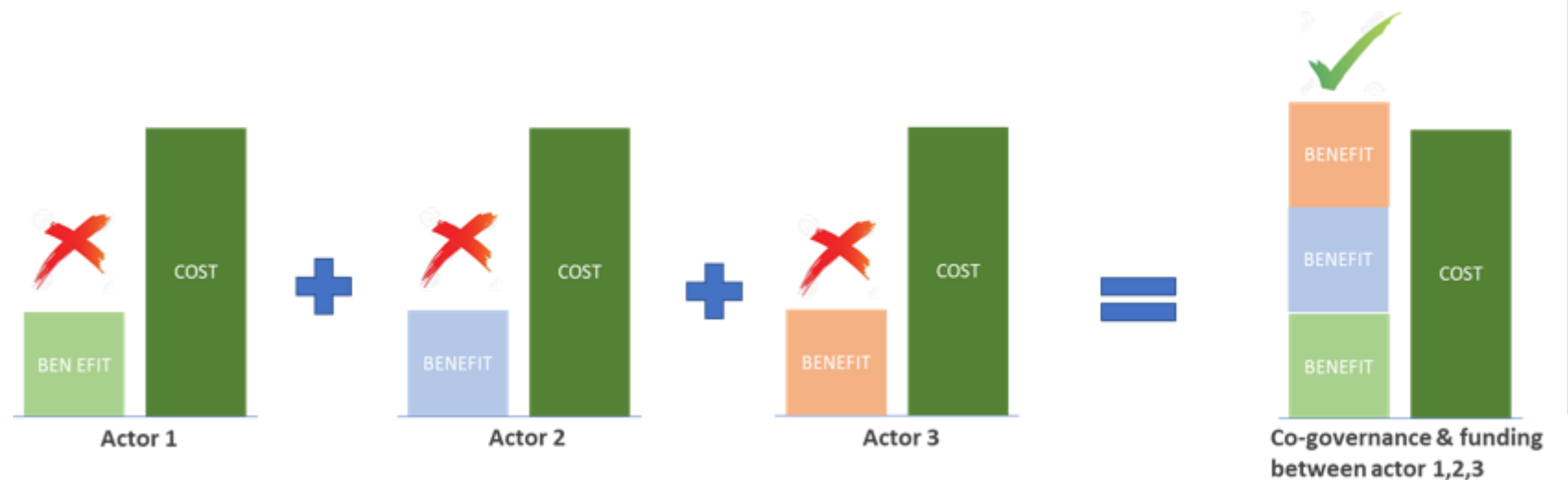
Beneficiaries





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



NBS business models



Risk reduction



Local stewardship



Green densification



Green health

➤ Upfront investments into urban nature-based solutions are made to lower future costs from extreme weather events

➤ NBS are valued by citizens and businesses who are willing to protect and support nature in their neighborhood based on the direct value and sense of identity and meaning that they derive from it

➤ Integrating NBS into urban real estate development, with costs embedded as part of larger 'sustainable urban living' business case

➤ The therapeutic, health and wellbeing value of urban nature-based solutions is recognized and used as a driver to finance urban nature-based solutions



NBS business models



Urban offsetting

- A 'no net loss' approach incentivizes or requires offset investments into urban nature-based solutions that are lost because of real estate and infrastructure development within the city



Vacant space

- The government steps back and provides space for local initiatives and (social) entrepreneurship in (sometimes temporarily) unused urban public space



Education

- Urban nature-based solutions are set up and managed to support environmental education and allow young, urban citizens to engage with food and nature

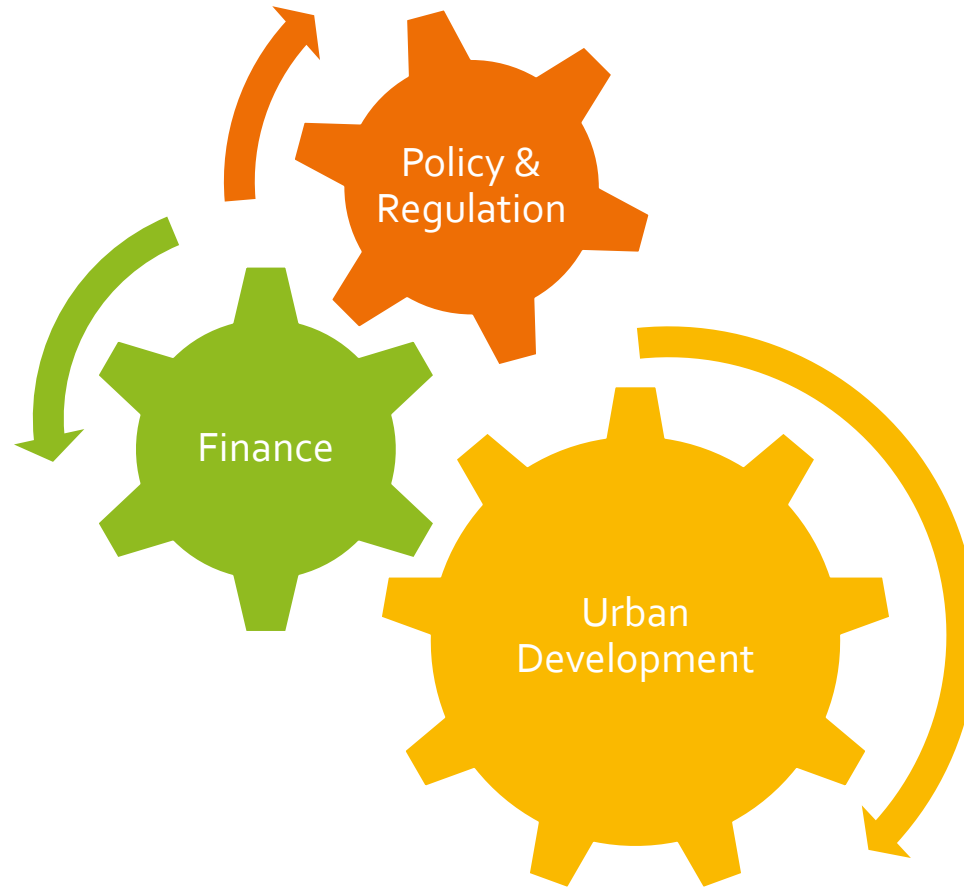


Green heritage

- Builds on cultural values and a sense of identity to sustain and develop urban nature-based solutions, can lead to different types of value creation, ranging from tourism and education to cultural healing



The conditions for shifting gears



- ✕ Urban planning and development has key role in shifting gears for nature in cities
- ✕ New regulation that supports using nature based solutions
- ✕ Potential to work with partners in urban development & finance to recognise value of nature
- ✕ Entrench nature as essential part of infrastructure in urban culture and politics



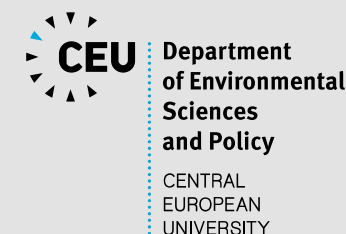


Final thoughts

- Entrench culture of care, establish new forms of mutual interdependency and symbiosis
- Capacity for virality
- Enrichment and maintenance of latent potential
- Potential and power of design
- Evidence of impact



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