



NATURVATION
cities - nature - innovation

Cities and Sustainable Transitions: making space for nature-based solutions

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Part of the Problem, Part of the Solution?

Since the early 1990s local governments began to position cities as central to the international effort to address climate change

Growing energy demand from cooling

Air conditioners and electric fans account for about 10% of all global electricity consumption. This figure is set to triple by 2050, equal to the current electricity capacity of the United States, the EU, and Japan combined. The number of air conditioners in buildings is projected to grow from 1.6 billion today to 5.6 billion in 2050 (IEA 2018).



Part of the problem ... part of the solution?

- “The highest emitting 100 urban areas (defined as contiguous population clusters) account for 18% of the global carbon footprint.’ (Moran et al. 2018)
- Cities account for up to 70% of energy related GHG emissions.
- Growth of energy use to 2030 is predicted to be concentrated in cities (in non-OECD countries)
- It is predicted that “material consumption by the world’s cities will grow from 40 billion tonnes in 2010 to ... 90 billion tonnes by 2050” (Swilling et al. 2018)
- “By 2050 at least 570 cities and some 800 million people will be exposed to rising seas and storm surges” (C40)
- Cities have (varied) direct and indirect powers over critical infrastructure networks that determine energy and resource use and levels of resilience.
- Concentration of population in urban centres means that cities are critical to addressing challenges arising from consumption of resources.
- Interconnected nature of urban infrastructure systems and proximity of inequalities mean that cities are critical for addressing both the co-benefits & trade-offs between sustainability goals
- The IPCC 1.5 Degree Special Report “identifies cities and urban areas as one of four critical global systems that can accelerate and upscale climate action” (Bazaz et al. 2018).
- Cities have democratically elected governments and potential to engage communities in addressing energy and environmental challenges.

Urban Nature Now?

While climate change has dominated the urban sustainability agenda over the past three decades there is now growing interest in how cities can work with nature to meet global climate & biodiversity along with sustainable development.



protect



restore

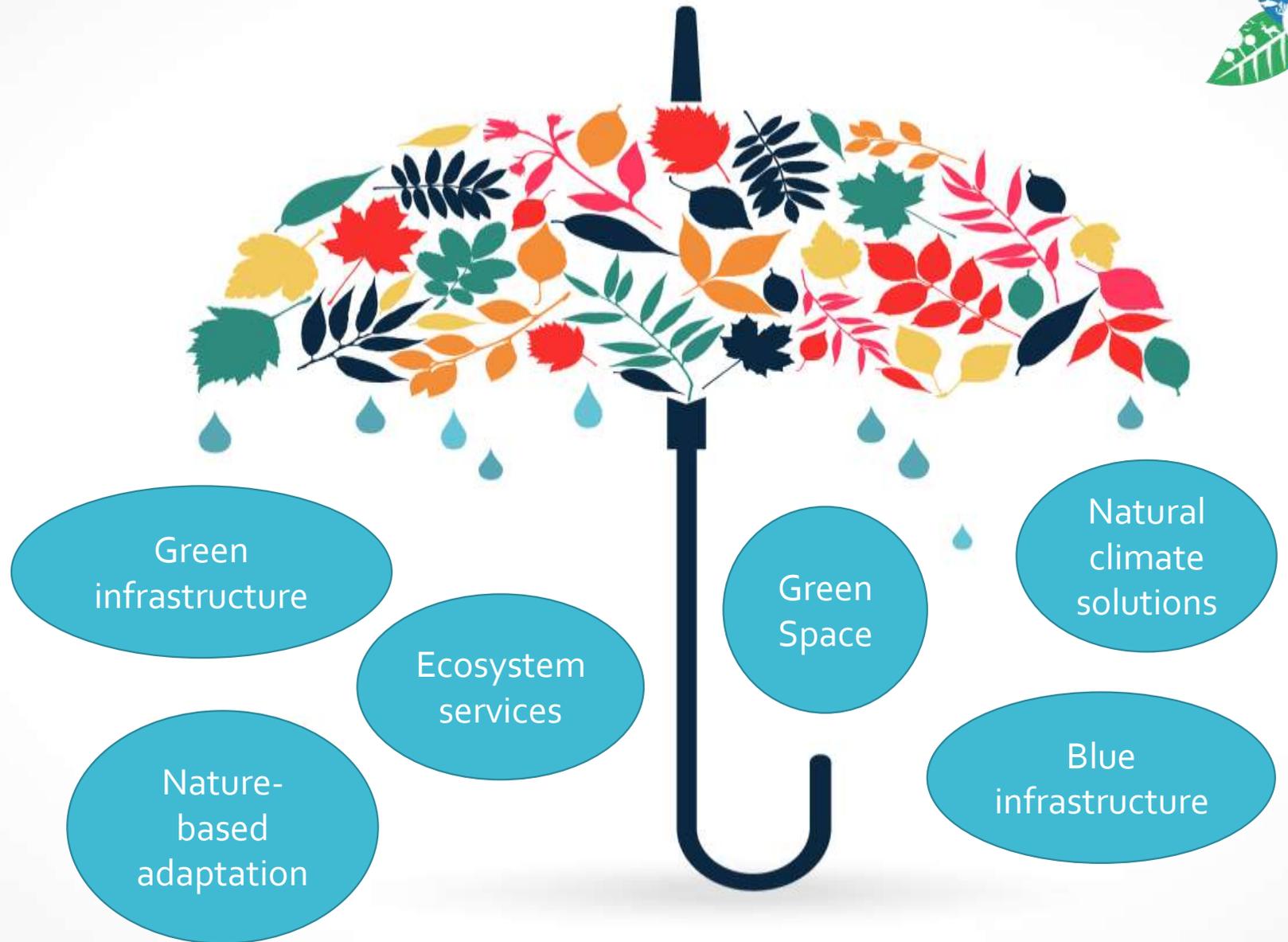


thrive



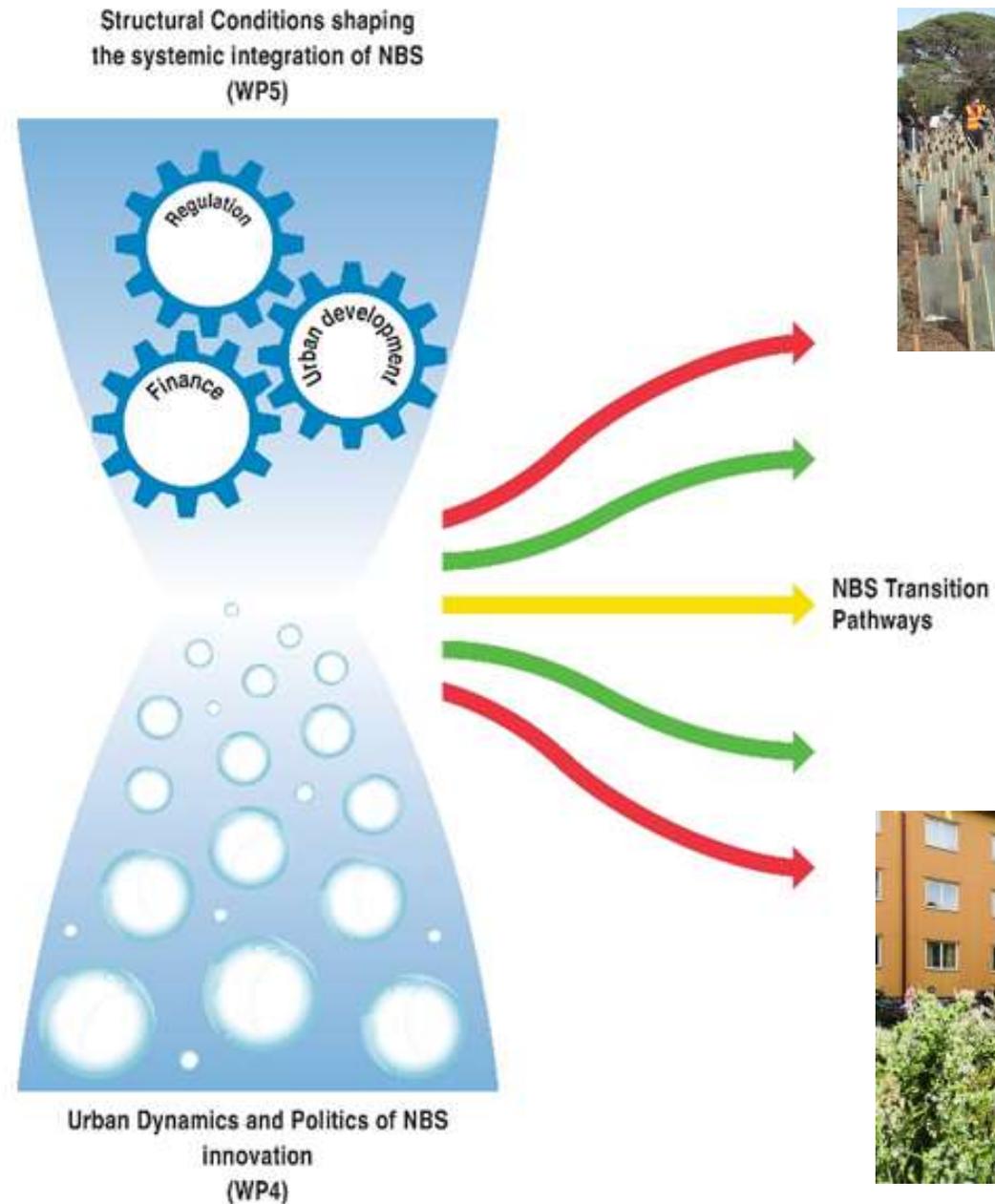
Nature-Based Solutions

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



Making Space for Nature-Based Solutions

In the NATURVATION project we consider transitions towards sustainability to be generated at through the dynamics and politics of experimentation with nature-based solutions and the structural conditions that shape the spaces of possibility in terms of policy, finance an urban development culture & practice.



Urban Nature Atlas

Captures 1000 nature based solutions being developed in 100 cities across Europe. Uses secondary data and provides a summary of each initiative as well as its key characteristics.

Fully searchable online with a database version available for analysis.

www.naturvation.eu/atlas



ABOUT THE ATLAS

Welcome to the Urban Nature Atlas! It contains almost 1000 examples of Nature-Based Solutions from across 100 European cities.

Use the **Quick Search by icon** (to the right of the map) or the **Advanced Search** (below the map) to identify the projects fitting your interests.

The map will be updated to display the results of your search, and a list of all relevant projects is displayed below. Click on the title of projects for further information.

QUICK SEARCH BY ICON

KEY CHALLENGES

- CO2
- Star
- Bank
- Bar chart
- Medal
- Heart
- Recycling
- Water
- Handshake
- Recycling

URBAN SETTING

- Lightbulb
- Star
- People
- Water
- Waves
- Waves
- Waves

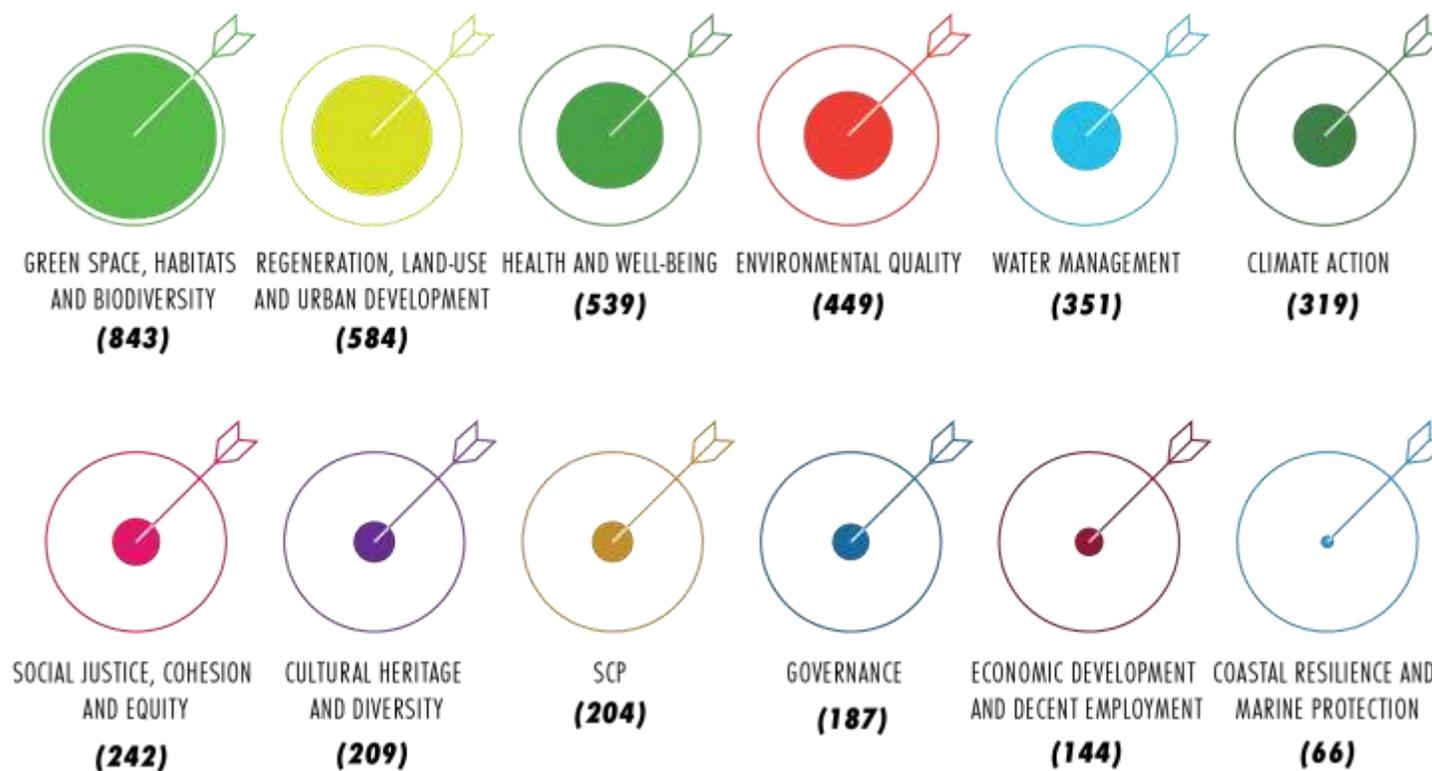
PROJECT COST

- €
- €€
- €€€
- €€€€
- €€€€€



Urban Nature for Sustainability

There is a clear *opportunity gap* to work with cities to unlock the potential of NBS for cities; and for cities to demonstrate the potential of NBS for sustainability challenges globally.



How can we enable innovation?



- **Diverse Modes of Governance:** to leverage capacities beyond formal powers of planning & regulation
- **Novel Business Models:** that can capture value that is shared and dispersed across public & private actors
- **Innovative Financing Arrangements:** which can realise monetary and non-monetary dividends of working with nature
- **Active Citizenship Engagement:** to account for multiple values of nature and ensure just outcomes

Business Models for Urban Nature-Based Solutions



Risk reduction

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



Local stewardship

- 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



Green densification

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



Green health

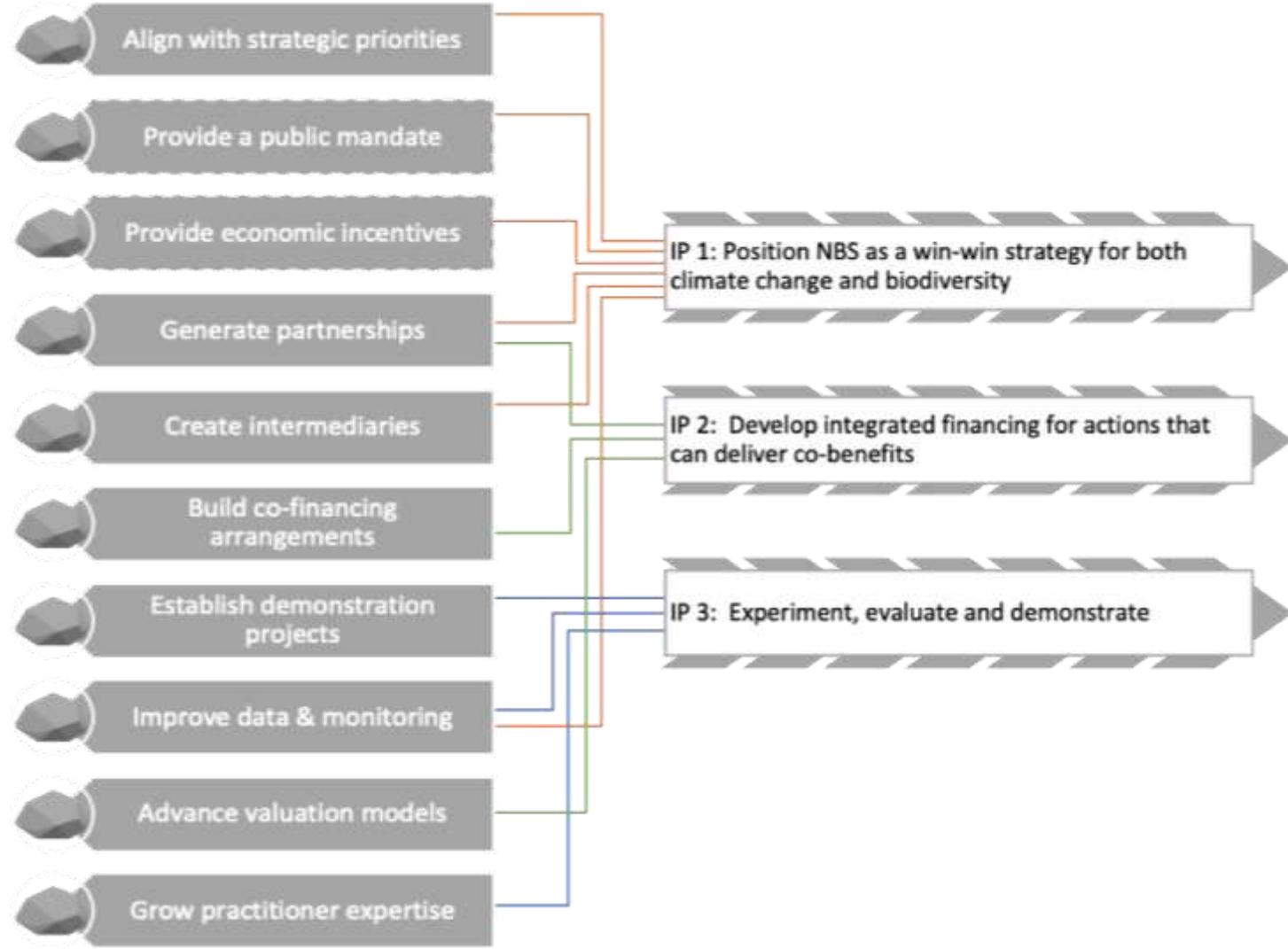
- The therapeutic, health and wellbeing value of urban nature-based solutions is recognized and used as a driver to finance urban nature-based solutions



Pathways for Mainstreaming NBS for Climate & Biodiversity are distinct but common ground can be found

We have identified 20 key 'stepping stones' that have been proven to unlock the potential of NBS and enable them to become widely taken up within cities. The stepping stones that are needed for climate and biodiversity goals are distinct, but common routes can be found.

<https://naturvation.eu/mainstream/key-stepping-stones>



Urban Nature, Social Justice?

Nature-based solutions involve trade-offs as well as synergies. Natural climate solutions may not deliver other important goals for cities and their communities unless this is explicitly built in from the start.

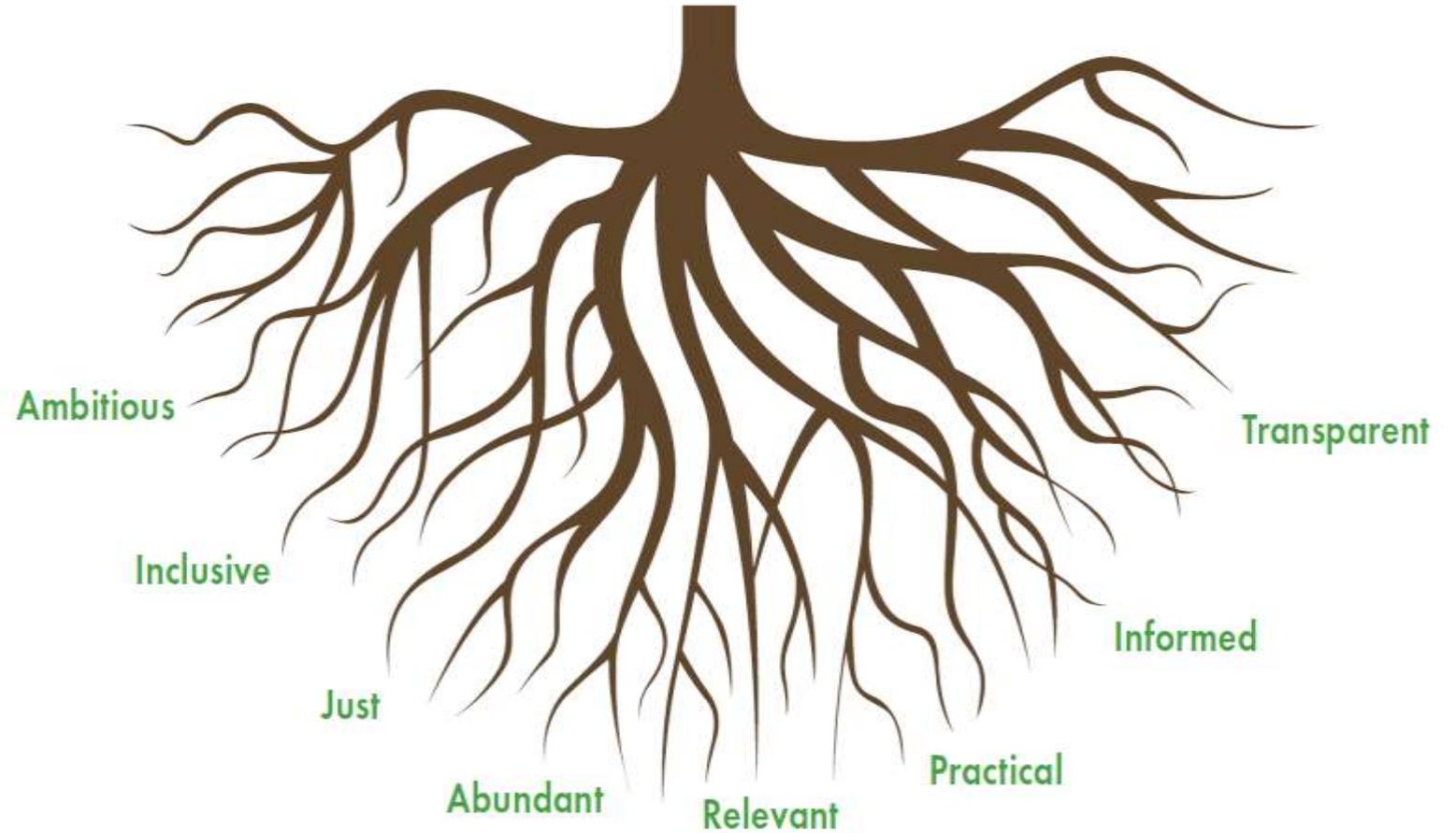
- Nature-based solutions *can* generate multiple sustainability benefits but this does not always mean that they *will*.
- A focus on climate benefits may lead to other issues – such as biodiversity – being neglected.
- Nature-based solutions can also be designed and implemented in ways that exacerbate inequalities.
- Ensuring that nature-based solutions benefit those who need them most is critical for socially just urban futures.





Growing Strong Urban Nature Based Solutions

Alongside new tools and knowledge for developing and implementing nature-based solutions, realising sustainability transitions also means attending to their politics and addressing issues of justice and equality.



Feel the Love

If we are to address climate change and also deliver a new agenda for nature and people, cities need to be part of the solution.

Encounters with urban nature have proven critical for health & well-being during CV-19.

Cities can provide nature that ensures resilience and that inspires us to look after our world.



Dear Smooth-barked Apple Myrtle,

I am your biggest admirer. I have always wanted to meet you, but tragically, I'm stuck in New York.

I think you are the most handsome tree of them all, tall with an inviting open canopy. I love to just dream of you, the smell of your clusters of white flowers, the sight of your lush, dark green foliage, and feel of your patterned bark.

You inspire me to live life to the fullest, and pursue my dreams; you keep growing despite the terrible tragedies in this world. You are loved and deserve the world.

Love, some person in New York



THANKYOU!

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