

Towards sustainable cities

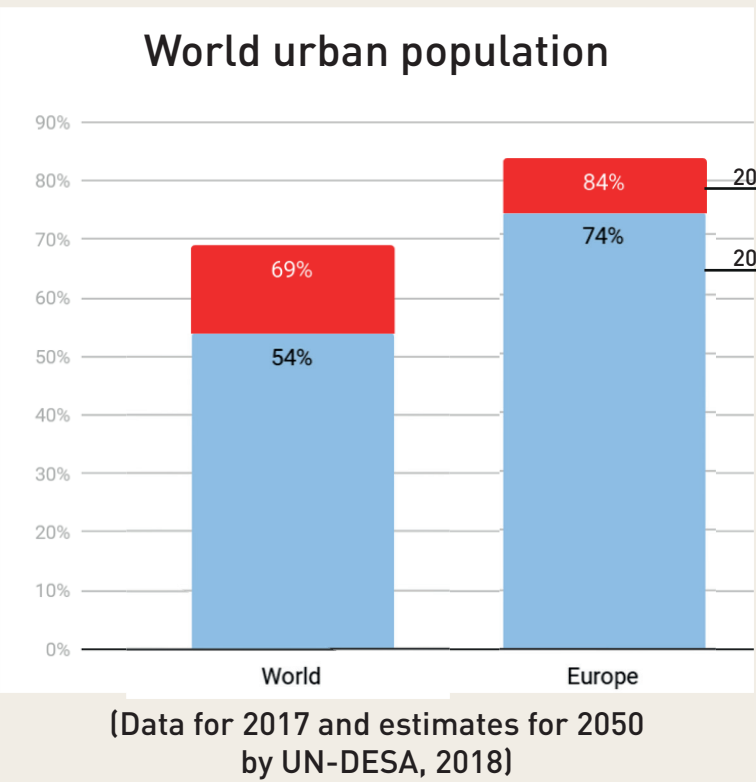
Ecosystem Services, Urban Green and Blue infrastructures, and Nature-based Solutions



Challenges for the future

In 2017, 54% of the world population was living in urban areas. In Europe alone, urban population reached 74%, and in North America reached 81%. For 2050, world urban population is expected to reach almost 70%, with Europe reaching 84% and North America reaching almost 90%.

Climatic changes are bringing extra pressure on urban areas. We need resilient cities, able to support their citizens while offering good quality of life and a safe environment.

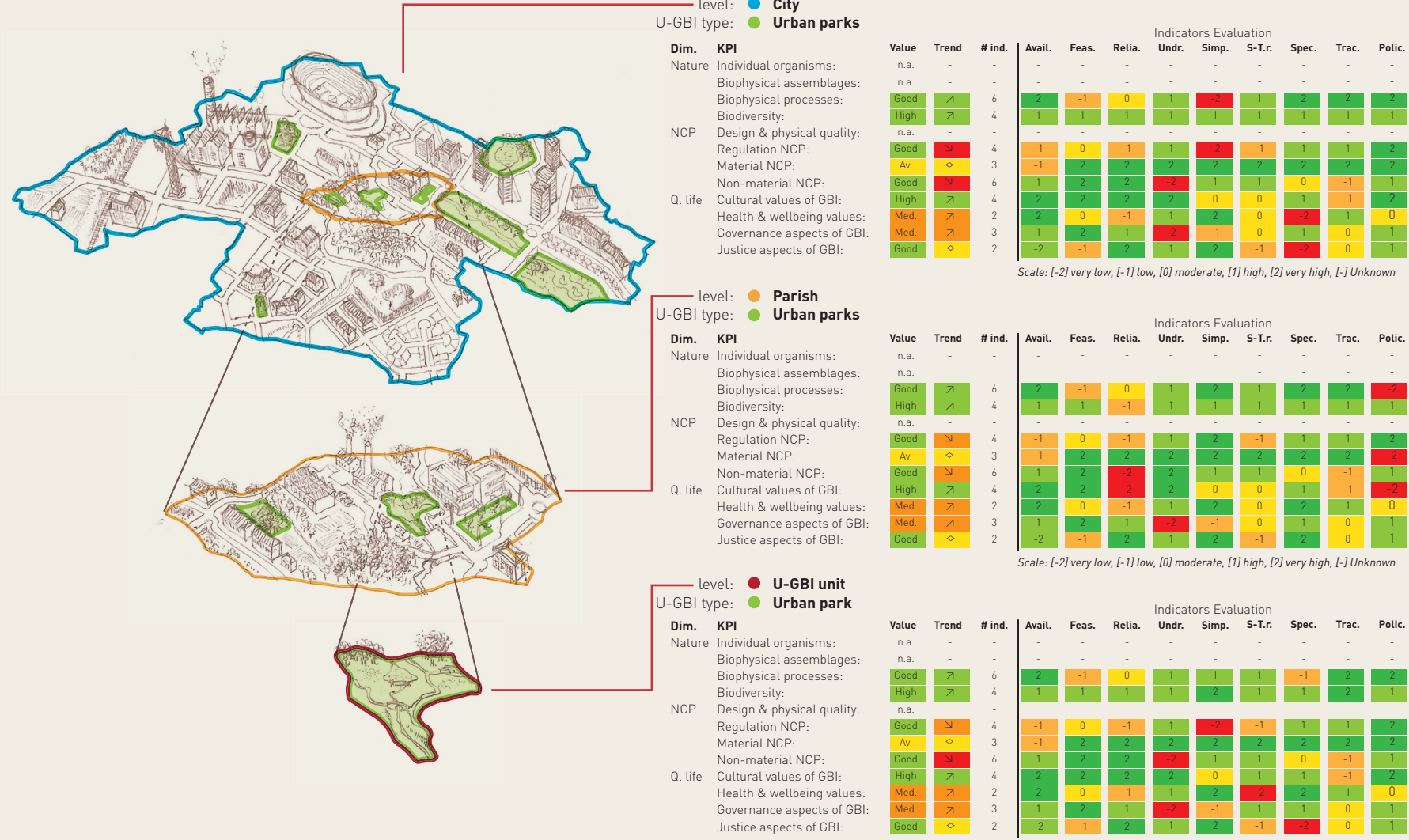


Urban Green and Blue Infrastructures

Urban Green and blue infrastructure (UGBI) is the network of all natural and semi-natural landscape areas, that form a green-blue network, providing ecosystem services (adapted from Naumann et al., 2011, Flemish Land Agency (no date), Haase, 2015). UGBI promote ecosystem health and resilience, contribute to biodiversity conservation, and to the enhancement of ecosystem services.

Key Performance indicators

Key Performance Indicators (KPI) allow to evaluate the contribution of each UGBI area to the overall environmental performance of each urban area, at different levels of detail.



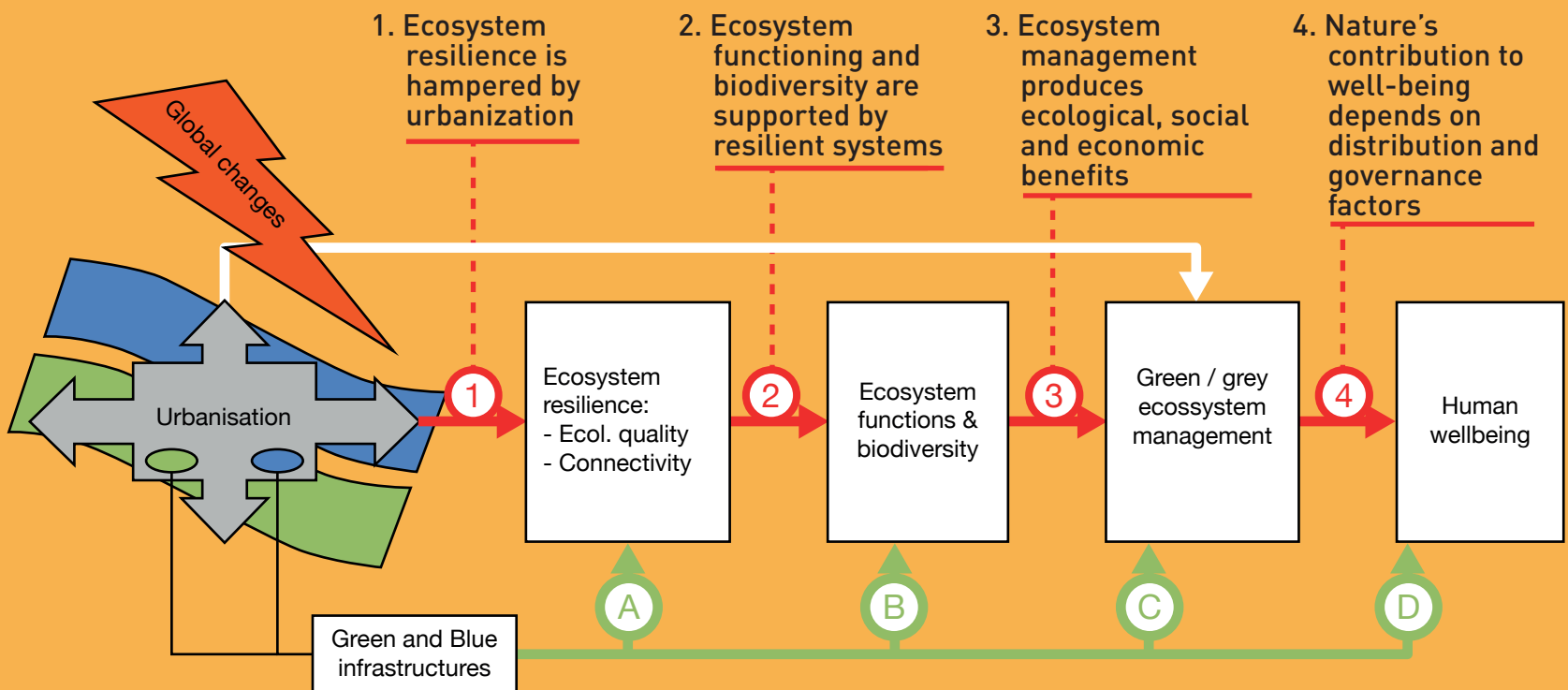
(example of possible KPI system, UrbanGaia)

The UrbanGaia Project

UrbanGaia is contributing to the socio-ecological knowledge base on critical features of UGBI, and providing tools for guiding their establishment, management and evaluation. Applying an innovative two-way approach of smartphone supported citizen science, including spatial data mobilisation on the one hand, and on the other the transdisciplinary valuation and co-creation of UGBI by a range of stakeholders, UrbanGaia intends to go beyond the state of the art and provide new insights on effective UGBI implementation.

The UrbanGaia approach

UGBI, ranging from technical solutions with an ecological component to entirely nature-based solutions, are hypothesised to **increase ecological connectivity and quality, improve biodiversity and functioning, deliver multiple ecosystem services** and direct **improvements of human wellbeing**. Moreover, UGBI have an indirect well-being effect by mitigating the negative urbanisation cascade. UGBI are defined here as sets of ecosystems of one type, linked into a spatially coherent system through flows of organisms, and interacting with the landscape matrix in which it is embedded, which can be used to conserve and sustain or enhance biodiversity, ecosystem functions, and to provide services to human populations (e.g., Opdam et al. 2006).



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