



14th BIENNALE
OF EUROPEAN TOWNS
AND TOWN PLANNERS
NAPOLI

SPECIAL WORKSHOP TITLE:

Enhancing urban regeneration and spatial justice with Nature-Based Solution

TITLE OF THE PRESENTATION **Knowledge and experience of NBS for urban issues. A literature review**

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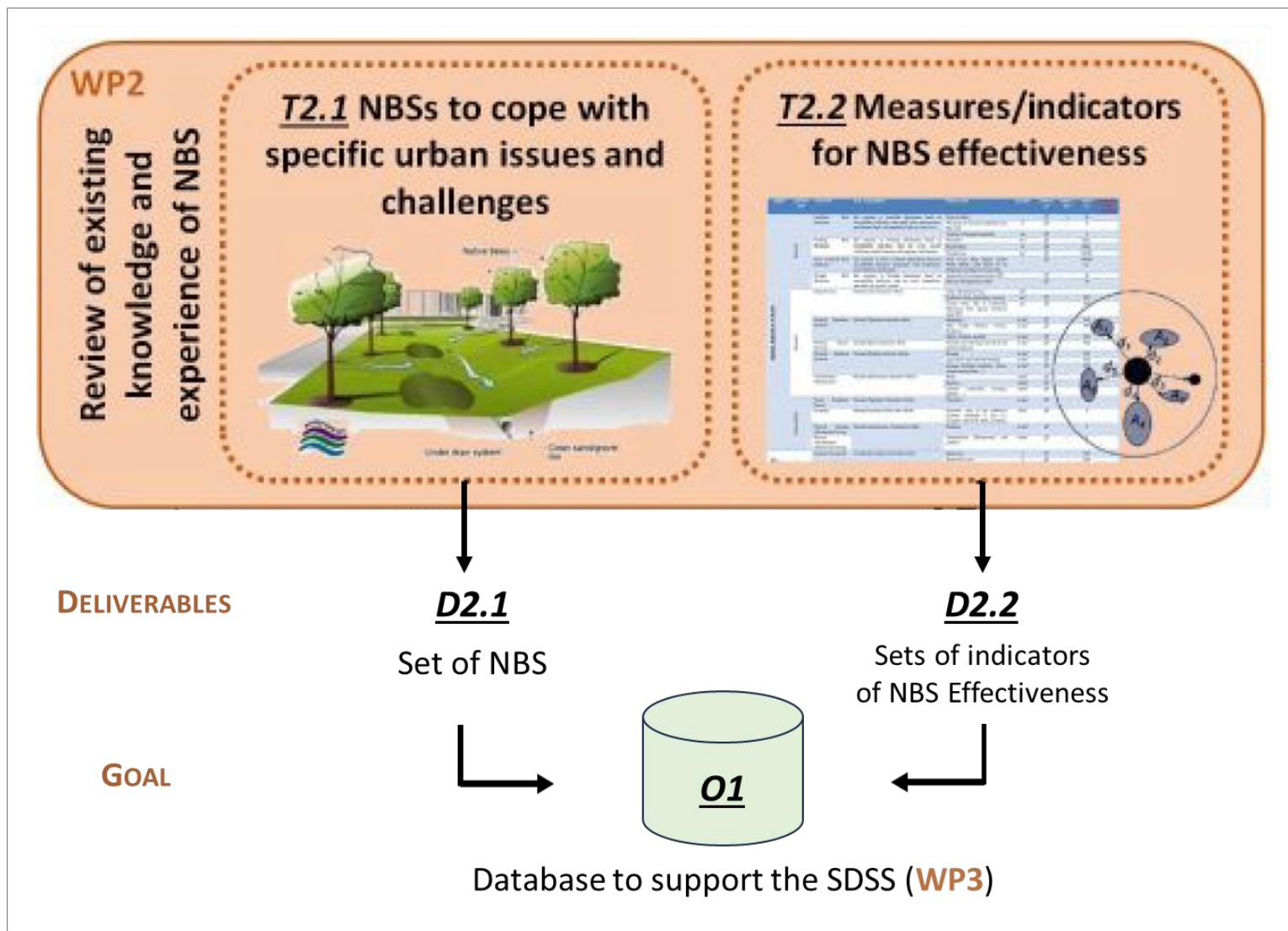


University of
Salerno



Department of
Civil Engineering

Naples, 22 April 2024



Source: Own elaboration on data from the research project of national relevance – PRIN – “Nature for sustainable cities: planning cost-effective and just solutions for urban issues (NatSolis)”, funded by the Italian Ministry of University and Research, Prot. 2022ZLE8HC

1) Identification

2 categories of selection

- Document type
(Limited to Review)
- Language
(Limited to English)

“Nature AND Based AND
Solutions AND Urban
AND Planning”

**83 reviews
(2004-2024)**

“Nature AND Based
AND Solutions AND
Urban AND Planning
AND Issues”

**13 reviews
(2007-2024)**



2) Screening

3 categories of exclusion

- No review
- PhD Thesis
- Off topic (no NBS or other
concepts referred to NBS)

3) Included

“Nature AND Based AND
Solutions AND Urban
AND Planning”

**70 reviews
(2016-2024)**

“Nature AND Based
AND Solutions AND
Urban AND Planning
AND Issues”

**11 reviews
(2019-2024)**

Table. Selected review sample

Selected Reference	Geographical context	Spatial Scale	Urban Issue (UI)	NBS typology to address the UI ¹	NBS Benefits	NBS Benefits measure ²	NBS Costs measure ³
Qui et al., 2024	Worldwide		Urban Heat Island	Vegetation and Shade (Green roofs and walls, urban greening, shade structures, and tree planting programs)	Cooling effects, biodiversity enhancement, improved air quality, aesthetic value	-	-
Wang et al., 2024	China		Global societal challenges, Various environmental and social issues, such as the urban heat island effect, air pollution and lack of recreational spaces	Urban forests	The provision of adequate and equal recreational opportunities, environmental benefits (such as urban heat island mitigation, air pollutant removal, urban flooding control), cultural benefits (such as historical culture, city image, knowledge generation and dissemination, public education) and economic benefits (such as tourism, business opportunities, eco-industries)	(xn) 36 KPIs - Key Performance Indicators – 20 descriptive of the forests configuration or composition, and 16 of the ecosystem services provided	(x) Generically defined “cost-effective solutions”
Wickenberg, 2024	Europe		World societal challenges	Policy umbrella concept of NBS	Social, environmental and economic benefits	-	-

¹ Type of NBS identified to address a specific urban issue.

^{2,3} Qualitative measure (x), quantitative (n), quali-quantitative (xn) or absent measure (-).



18 regional laws,
2 provincial laws +
integrations



Regional Urban planning Law (LUR)

North

Lr 56/1977 (Piemonte); Lr 36/1997 (Liguria);
Lr 11/1998 (Valle D'Aosta); Lr 11/2004 (Veneto);
Lr 12/2005 (Lombardia); Lr 5/2007 (Friuli Venezia
Giulia); Lp 15/2015 (Trento); Lr 24/2017 (Emilia
Romagna); Lp 9/2018 (Bolzano)

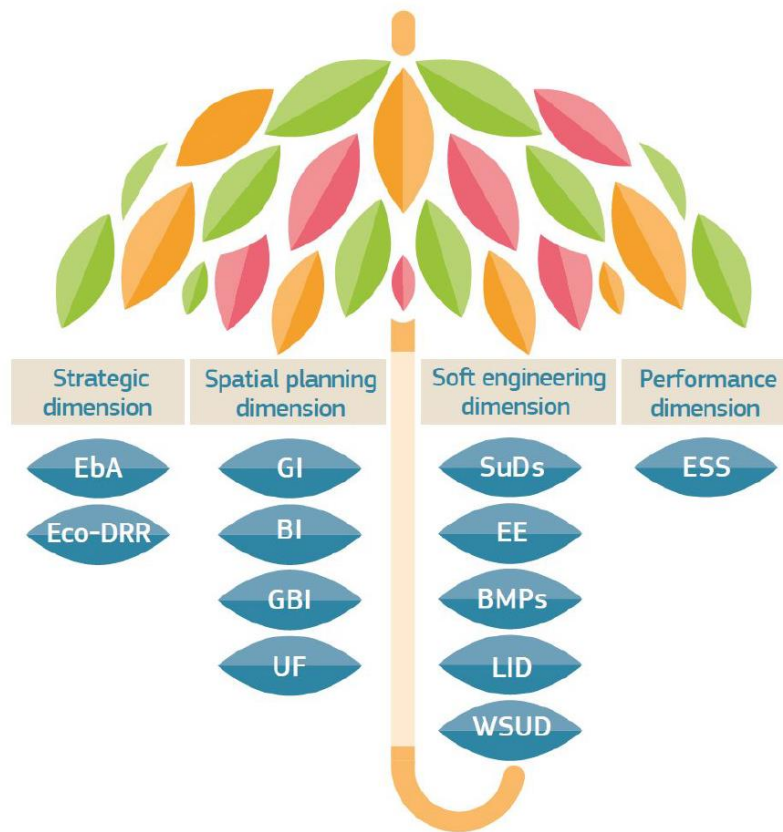
Centre

Lr 38/1999 (Lazio); Lr 65/2014 (Toscana);
Lr 1/2015 (Umbria); Lr 19/2023 (Marche);
Lr 58/2023 (Abruzzo)

South and Islands

Lr 23/1999 (Basilicata); Lr 45/1989 (Sardegna);
Lr 20/2001 (Puglia); Lr 19/2002 (Calabria);
Lr 16/2004 (Campania); Lr 19/2020 (Sicilia)

EbA = ecosystem based adaptation; Eco-DRR = ecosystem-based disaster risk reduction; GI = green infrastructure; BI = blue infrastructure; GBI = green-blue infrastructure; UF = urban forestry; SuDS = sustainable urban drainage systems; EE = ecological engineering; BMPs = best management practices; LID = low-impact design; WSUD = water-sensitive urban design; ESS = ecosystem services.



Source: EU (2021) «Evaluating the Impact of Nature-based Solutions: A Handbook for Practitioners». EU, Brussels. doi:10.2777/244577

The review allows to scan the available or proposed NBS and their benefits in:

- **Scientific literature**

Official search engines

- **Scopus**

- **Grey literature**

Official repositories of national and European public bodies and agencies

- **Regional/provincial laws on urban planning and territorial government in Italy**

- **Results from recent funded Research Projects at European level (in progress)**





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THANK YOU FOR YOUR KIND ATTENTION