



SLOVENSKI STANDARD
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Trajnostna in pametna mesta in skupnosti - Na naravi temelječe rešitve (NBSs) - Slovar in načela

Sustainable and smart cities and communities - Nature-based solutions (NBSs) - Vocabulary and principles

Nachhaltige und intelligente Städte und Gemeinden - Naturbasierte Lösungen (NBSs) - Vokabular und Prinzipien

Villes et communautés territoriales durables et intelligentes - Solutions fondées sur la nature (SFN) - Vocabulaire et principes

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Sustainable and smart cities and communities - Nature-based solutions (NBSs) - Vocabulary and principles

Villes et communautés territoriales durables et intelligentes - Solutions fondées sur la nature (SFN) - Vocabulaire et principes

Nachhaltige und intelligente Städte und Gemeinden - Naturbasierte Lösungen (NBSs) - Vokabular und Prinzipien

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (prEN 18140:2024) has been prepared by Technical Committee CEN/TC 465 “Sustainable cities and communities”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

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Introduction

At European level the European Commission (EC) released the first document on NBS: *Towards an EU Research and Innovation policy agenda for Nature-Based Solutions and Re-Naturing Cities*, in 2015. In this document the EC identified four goals that can be addressed by nature-based solutions:

- enhancing sustainable urbanisation;
- restoring degraded ecosystems;
- developing climate change adaptation and mitigation;
- Improving risk management and resilience.

In the recent document “EU taxonomy for sustainable activities”¹ has considered as environmental objectives the following categories: climate change mitigation and adaptation, the sustainable use and protection of water and marine resources, the transition to a circular economy, pollution prevention and control, the protection and restoration of biodiversity and ecosystems.

Evaluating the impact of NBS the “Handbook of practitioners” (2021) reported a gap analysis in terms of:

- lack of definition of nature-based solutions (NBS);
- lack of NBS monitoring methodology and implementation stages (longer-term evaluations to assess NBS effects over time and guaranteeing continuity of monitoring measurements);
- measurability of intangible impacts (e.g. aesthetic enjoyment) and spillovers (impact of NBS intervention may spread beyond the treated area or group);
- accounting for trade-offs, difficulties in communicating to non-scientific partners the need and the challenges in a less -technical language.

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¹ EC (2021c)

1 Scope

Building on the consolidated definitions of NBS, this document proposes a classification of NBS to support the development of an agreed terminology, the basis of the standardization process.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp/>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1 General

3.1.1

nature-based solution

NBS

action to protect, conserve, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems which addresses social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services, resilience and biodiversity benefit

3.2 Terms broadly related to NBS

3.2.1

adaptive management

systematic process of continually improving management policies and practices by learning from the outcomes of existing programmes

3.2.2

anthropogenic climate change

change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time period

3.2.3

biodiversity

variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part

Note 1 to entry: This includes variation in genetic, phenotypic, phylogenetic, and functional attributes, as well as changes in abundance and distribution over time and space within and among species, biological communities and ecosystems.

prEN 18140:2024 (E)**3.2.4****blue infrastructure****BI**

strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services such as water purification, water retention, air quality improvement, space for recreation and climate resilience and adaptation

Note 1 to entry: This network of blue (water) spaces can improve environmental conditions and therefore citizens' health and quality of life. It also supports a green economy, creates job opportunities and enhances biodiversity.

3.2.5**blue-green network**

urban space development concept defining a network of existing and/or restored rivers and their valleys (blue areas) and green areas (agricultural areas, parks, old orchards, wastelands, degraded areas and others), as a basis for the spatial planning of cities that will provide sustainable development and adaptation to global climate change

Note 1 to entry: The network aims to create or preserve key 'reservoirs' for biodiversity and to link these through ecological corridors vital to the free movement of species. Blue-green networks can range from small-scale endeavours to all-encompassing city plans.

3.2.6**carbon sequestration**

process of capturing and storing atmospheric carbon dioxide

Note 1 to entry: It is one method of reducing the amount of carbon dioxide in the atmosphere with the goal of reducing global climate change

3.2.7**climate adaptation services**

benefits to people from increased social ability to respond to climate change, provided by the capacity of ecosystems to moderate and adapt to climate change and variability

3.2.8**climate change**

any change in climate over time, whether due to natural variability or as a result of human activity

3.2.9**coastal erosion**

net landward retreat of the shoreline, as measured relative to a given datum, over a given temporal scale that is longer than cyclic patterns of coastal variability

3.2.10**conservation**

concept used in the context of biodiversity, environment, and natural resources, including protection and management

Note 1 to entry: It refers to the act of preserving, guarding or protecting, meanwhile keeping in mind the sustainable character and wise use

3.2.11**conservation areas or protected areas**

clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural

values, including maritime areas, in which human presence or the exploitation of natural resources is limited

3.2.12

cost-benefit analysis

decision tool which judges the desirability of projects by comparing their costs and benefits

3.2.13

cultural heritage conservation

measures taken to extend the life of cultural heritage while strengthening transmission of its significant heritage messages and values

Note 1 to entry: In the domain of cultural property, the aim of conservation is to maintain the physical and cultural characteristics of the object to ensure that its value is not diminished and that it will outlive our limited time span

3.2.14

cultural landscape

one of the following three main categories:

- clearly defined landscape designed and created intentionally by man, often built for aesthetics reasons associated with religious or other monumental buildings and ensembles;
- organically evolved landscape, developed by association with and in response to its natural environment (a relict, or fossil, landscape or; a continuing landscape is one which retains an active social role in contemporary society);
- associative cultural landscape with powerful religious, artistic or cultural associations of the natural element

3.2.15

disaster risk

potential loss of life, injury, destroyed or damaged assets which could occur to a system, society or a community in a specific period of time, determined probabilistically as a function of hazards, exposure, vulnerability and capacity

3.2.16

disaster risk reduction

DRR

actions “aimed at preventing new risks and reducing existing ones and managing residual risk, which contribute to strengthening resilience and therefore to the achievement of sustainable development objectives”

3.2.17

ecohydrology

EH

understanding of relationships between hydrological and biological processes at different scales to improve water security, enhance biodiversity and further opportunities for sustainable development by lessening ecological threats and maximizing greater harmony within catchment processes

3.2.18

ecohydrological nature-based solution

EH-NBS

action enhancing efficiency of hydrotechnical infrastructure, in agricultural and urban landscapes, for adaptation to the ongoing climate change and enhancing catchments sustainability by creating

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multidimensional potential of the WBSRC (water, biodiversity, ecosystem services for society, resilience to climatic changes, culture and education)

Note 1 to entry: It also promotes a holistic approach by encouraging transdisciplinary sustainability science and education; an integral part of this strategy is the implementation of EH-NBS for water quality and quantity improvement.

3.2.19**ecological engineering**

engagement of systems of human and environmental self-design or light management that joins human design and environmental self-design, so that they are mutually symbiotic

Note 1 to entry: Ecological engineering can also entail the design of sustainable ecosystems that integrate human society with its natural environment for the benefit of both.

3.2.20**ecosystem**

dynamic complex of vegetable, animal and microorganism communities and their non-living environment that interact as a functional unit

Note 1 to entry: Ecosystems can be small and simple, like an isolated pond, or large and complex, like a specific tropical rainforest or a coral reef in tropical seas

3.2.21**ecosystem approach**

strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way

Note 1 to entry: The ecosystem approach places human needs at the centre of biodiversity management. It aims to manage the ecosystem, based on the multiple functions that ecosystems perform and the multiple uses that are made of these functions. The ecosystem approach does not aim for short-term economic gains but aims to optimize the use of an ecosystem without damaging it. [oSIST prEN 18140:2025](https://standards.iteh.ai/catalog/standards/sist/f0a4b49d-0238-415c-99a9-074b78f2bad4/osist-pren-18140-2025)

3.2.22**ecosystem service**

benefits people obtain from ecosystems

Note 1 to entry: These include provisioning services such as food and water; regulating services such as flood and disease control; cultural services such as spiritual, recreational, and cultural benefits; and supporting services such as nutrient cycling that maintain the conditions for life on Earth. The concept “ecosystem goods and services” is synonymous with ecosystem services.

3.2.23**ecosystem-based adaptation**

use of biodiversity and ecosystem services as part of an overall adaptation strategy to help people to adapt to the adverse effects of climate change

3.2.24**ecosystem-based management**

integrated, science-based approach to the management of natural resources that aims to sustain the health, resilience and diversity of ecosystems while allowing for sustainable use by humans of the goods and services they provide

3.2.25

ecosystem-based mitigation

action meant to mitigate the negative effects of climate change through the management of ecosystems

Note 1 to entry: These actions can aim to do one of the following: decrease greenhouse gas emissions related to deforestation and land use; capture and store carbon dioxide from the atmosphere, protect natural ecosystems from loss and degradation, restore ecosystems that have been degraded, and more sustainably manage working lands such as fields and managed forests; enhance the benefits for and avoid negative impacts on biodiversity from reducing greenhouse gases emissions, taking into account the need to ensure the full and effective participation of indigenous and local communities in relevant policy-making and implementation processes, where appropriate; enhance the conservation, sustainable use and restoration of marine and coastal habitats that are vulnerable to the effects of climate change or which contribute to climate-change mitigation.

3.2.26

ecosystem maintenance

ongoing activity, applied after full recovery of an ecosystem, intended to counteract processes of ecological degradation to sustain the attributes of an ecosystem

Note 1 to entry: Higher ongoing maintenance is likely to be required at restored sites where higher levels of threats continue, compared to sites where threats have been controlled.

3.2.27

ecosystem restoration

process that assists in initiating or accelerating the recovery of the health, integrity, and stability of an ecosystem that has been degraded, damaged, or destroyed

Note 1 to entry: Ecosystems can degrade because of pollution, climate change or human intervention. Ecological restoration processes can make use of different instruments, tools and methods going from technological innovations to nature-based solutions and innovations.

3.2.28

ecosystem resilience

capacity of a system to absorb disturbance and reorganize while still retaining similar function, structure, and feedback

Note 1 to entry: In plant and animal communities, this property is highly dependent on adaptations by individual species to disturbances or stresses experienced during the species' evolution.

3.2.29

endemic species

species for which the entire global range is strictly limited to a specified region or locality

3.2.30

environmental protection

prevention of unwanted changes to ecosystems and their constituent parts

3.2.31

floodplain

area bordering a river that naturally provides space for the retention of flood and rainwater

Note 1 to entry: The potential floodplain extent is the lateral extent of a flood that has a return period of once every 100 years.