



SCIENCE BASED
TARGETS NETWORK

Science-Based Targets for Nature in Cities

INITIAL GUIDANCE FOR LOCAL GOVERNMENTS

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Foreword

Cities are on the front lines of both the biodiversity crisis and its solutions. As the places where most people live, work, and build, cities shape surrounding landscapes in profound ways—bringing both responsibility and opportunity. Around the world, the ambition is evident: cities are already setting biodiversity targets and committing to global goals, such as the Kunming-Montreal Global Biodiversity Framework.

Yet ambition alone is not enough. We consistently hear from cities that, while they are ready to act, they lack practical, science-aligned guidance to translate commitments into credible targets and on-the-ground action. What does a robust land-use target look like for a mid-sized city? How can local plans be assessed against what science requires? These are urgent questions, and cities need clear, actionable answers.

This guidance was developed to meet that need, bringing together the Science Based Targets Network's (SBTN) mission to align action with Earth's limits and the expertise of a global coalition supporting urban nature action. This resource reflects that collective effort and was brought to launch in close coordination with the Urban Biodiversity Hub.

Rather than creating another framework from scratch, this resource builds on existing initiatives and expertise. It offers a practical, step-by-step approach to understanding local pressures on nature, assessing ecosystem conditions, and setting science-based targets—starting with land, where cities have some of their most direct and consequential influence on nature outcomes. It is not a replacement for existing efforts, but a tool to validate, strengthen, and align them with global biodiversity goals.

We invite city leaders, practitioners, and partners to engage with this initial guidance, apply it in their contexts, and help build the collaboration needed to expand this work. Together, we can turn ambition into action—and action into lasting impact.



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Glossary of terms

Below are definitions of the key concepts used throughout this guidance. A full glossary is also made available [here](#).

Definitions	
Biodiversity	The variability among living organisms from all sources, including, inter alia, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems. (CBD, 1992)
City	A city, in the context of this guidance, refers to a contiguous built-up area and adjacent urbanized spaces governed by an official administrative body. It is an urban area with a defined local government responsible for planning, managing resources, and implementing policies to address environmental and socio-economic impacts within its jurisdiction. This definition aligns with broader understandings of urban areas as human settlements with high population density and built infrastructure (IPCC, AR6, 2021) and as regions where socio-economic activities transform natural landscapes into predominantly human-dominated environments (IPBES Global Assessment, 2019). For example, the City of Amsterdam refers to the physical urban boundary governed by the Municipality of Amsterdam, including all areas under its jurisdiction and administrative mandate.
Co-benefits	Aiming to improve the state of nature in cities often, if done right, can bring about (un)intended co-benefits beyond an action's direct aim. Imagine for example a policy to increase the presence of green spaces in an urban area that is currently largely built up or paved over. A policy initiative like this might have as its direct aim to reduce the urban heat island effect in the city. Besides contributing to this goal, there are a ton of other benefits that might be achieved through clever enhancement of the green space. For example, it might simultaneously improve overall biodiversity in the city, enhance space for pollinating species to thrive, create more interconnected green ecosystems and corridors, provide mental and physical health benefits to people, and so on. It is key for cities to keep this in mind whenever designing an intervention: when done right, multiple of such benefits can be achieved with a single proposal or plan - enhancing the state of nature in a holistic sense.
Earth-system justice	Building on fairness in knowledge and justice from local to global levels, Earth-system justice calls for fair decision-making (access to information, participation, public debate, and legal protection) and fair outcomes (access to basic needs while preventing harm and fairly sharing resources, risks, and responsibilities). Achieving Earth-system justice requires major changes to address the root causes of environmental harm and social vulnerability. This includes removing barriers that prevent action and ensuring accountability for those responsible. It also means changing how resources are shared and used, identifying who contributes to environmental problems, and how they do so. Earth-system justice is guided by three key principles: <ol style="list-style-type: none"> 1. Justice between species – Recognizing the rights and well-being of all living things.

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2. Justice across generations – Ensuring a healthy planet for future generations.
3. Justice within our generation – Addressing inequalities among people today.

Ecosystem services	The expansion of ecosystem services to encompass the broader concept of nature’s contribution to people (NCP) is an ongoing and important academic discussion. While recognizing and embracing this expanded perspective is a positive and necessary direction, for the purposes of this guidance, we continue to use the term ‘ecosystem services’ to align with its traditional usage. This choice does not reject the validity or the importance of NCP; rather, it acknowledges that ecosystem services represent a subset of NCP, focusing on aspects traditionally recognized within this guidance. For example, traditional ecosystem services include provisioning resources like food and water, regulating benefits such as climate control, and cultural values like recreation and spiritual significance. NCP to people broadens this view, incorporating relational values, cultural identity and non-material benefits like the inspiration or sense of belonging that communities derive from nature. Hence, these other dimensions of NCP are fully acknowledged and valued within this broader understanding.
Equity	The fair and just distribution of environmental benefits, responsibilities, and decision-making power, ensuring that all stakeholders—especially Indigenous Peoples, frontline communities, and marginalized groups—have a meaningful role in shaping and benefiting from nature-positive actions. Equity in this context also includes recognizing historical and systemic disparities, preventing undue burdens on vulnerable populations, and fostering inclusive governance in setting and implementing Science-Based Targets.
Governance	The process of decision-making and the process by which decisions are implemented (or not implemented) [1]. It refers to the structures, policies, and decision-making processes that shape how organizations, governments, and stakeholders manage and integrate nature-related targets. It encompasses regulatory frameworks, institutional responsibilities, stakeholder engagement, and mechanisms for accountability and transparency. Effective governance ensures that Science-Based Targets are not only aligned with environmental and social priorities but also embedded within broader policy frameworks to drive systemic change.
Nature	The natural world, with an emphasis on the diversity of living organisms (including people) and their interactions among themselves and with their environment (IPBES Global Assessment 2019).
Nature positive	Nature positive is a global societal goal defined as ‘halt and reverse nature loss by 2030 on a 2020 baseline, and achieve full recovery by 2050’. Individual entities, geographies and countries can and must demonstrate their sufficient contribution to a global nature-positive outcome. In operationalizing the concept of nature positive, tackling drivers and the negative and positive impacts is central (Nature Positive Initiative, 2023).
Region	A region is a broader geographical area that may encompass multiple subnational governments, cities, or other political entities. Regions can be defined by various criteria such as geography, culture, economy, or political considerations. Regions are not typically governed by a central authority and often serve as a more general grouping of areas. For example, the

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Pacific Northwest region in the United States includes multiple states, such as Washington and Oregon, which share similar geographical features and cultural elements.

Pressure

Pressure refers to the direct stress or impact on the environment caused by human activities, stemming from the underlying driving forces, and resulting in changes to the state of the environment (see DPSIR Framework). Essentially it represents the negative consequences of human actions like pollution, resource depletion, or land-use change that affect the environmental system.

List of assessed frameworks

Abbreviations	Framework name	Link to source
CBD	Convention on Biological Diversity	https://www.cbd.int/doc/publications/cbd-ts-58-en.pdf
CSCAF	ClimateSmart Cities Assessment Framework 3.0	https://niu.in/c-cube/sites/all/themes/zap/assets/pdf/CSCAF_3_0_Technical_document.pdf
CwN	Cities with Nature	https://citieswithnature.org/ (not publicly accessible)
DOPA	Digital Observatory for Protected Areas	https://dopa.jrc.ec.europa.eu/dopa/
EUBI	European Urban Biodiversity Index	https://www.eionet.europa.eu/etcs/etc-bd/products/etc-bd-reports/eubi_cities_biodiversity_indicator
EUBS	EU Biodiversity Strategy	https://dopa.jrc.ec.europa.eu/kcbd/EUBDS2030-dashboard/?version=1
GBF	Global Biodiversity Framework	https://www.cbd.int/gbf/targets/notes.shtml
GCA	Green City Accord	https://webgate.ec.europa.eu/declare/static/docs/Green_City_Accord_Indicators_Guidebook.pdf
IEFS	International Ecocity Framework and Standards (IEFS) Initiative	https://ecocitystandards.org/
InVEST *	Integrated Valuation of Ecosystems and Tradeoffs	https://naturalcapitalproject.stanford.edu/software/invest <i>*please note this is a model not a framework</i>
ISO	International Organization for Standardization	https://www.iso.org/home.html
SBT	Science Based Targets	https://sciencebasedtargetsnetwork.org/wp-content/uploads/2024/07/Technical-Guidance-2024-Step1-Assess-v1-1.pdf
CBI	Singapore Index	https://www.cbd.int/doc/publications/cbd-ts-98-en.pdf
UMF	Urban Monitoring Framework	https://data.unhabitat.org/pages/urban-monitoring-framework
UNI	Urban Nature Indexes	https://portals.iucn.org/library/sites/library/files/documents/2023-015-En.pdf
USF	Urban Sustainability Framework	https://documents1.worldbank.org/curated/en/339851517836894370/pdf/123149-Urban-Sustainability-Framework.pdf

1. Introduction

1.1. Background

Cities as powerful lever

Cities are home to over half the world's population, and by 2050, that number is predicted to rise to 68%, making cities one of the biggest drivers of environmental impact [2]. The Science Based Targets Network (SBTN) is a civil-society and science-led initiative founded in 2019 by a group of global NGOs who have come together to help collectively define what is necessary for companies and cities to do “enough” to stay within Earth's limits and meet society's needs. SBTN aims to guide cities in setting science-based targets to achieve a net-zero, nature-positive future, addressing the lack of frameworks tailored to the specific needs of cities for urban biodiversity and climate goals. By setting clear targets for climate and nature, cities can become a powerful lever to create healthier communities, boost economies, and improve quality of life for their residents.

Aligning efforts

The Kunming-Montreal Global Biodiversity Framework sets a global goal to stop and reverse biodiversity loss by 2030. This goal, paired with the push for net-zero emissions, acts as a compass for local and national governments. However, cities often lack guidance on how to translate global objectives into meaningful and actionable local targets that can be incorporated in their urban context. Tailoring existing frameworks to the specific contexts of cities can be challenging as cities will have the need to invent their own approach. There is a need for global alignment on a legitimate approach that allows cities to assess their impact areas and set feasible targets. These targets provide a roadmap for cities to operate within the Earth's safe and just boundaries.

Developing a guidance

Launched in October 2023, the Nature Science-based Targets (SBTs) for Cities program aims to guide cities in setting effective, science-based targets for nature and biodiversity. Science-based Targets are measurable, actionable and time-bound objectives, based on the latest available science, that allow actors to align with Earth-system boundaries and societal sustainability goals.

This guidance was developed through a structured process and collaborative efforts between local government officials, frontline practitioners, academia and sustainability experts who contributed in the form of workshops, interviews, surveys and roundtable discussions. Following an assessment of 32 nature and/or urban-related frameworks for their thematic comprehensiveness, equity, target-setting guidance, and indicators, a pilot theme was identified and indicators, as well as their measurement methods, for the pilot theme were determined and refined. City practitioners were engaged in a series of workshops and roundtable discussions in this process to provide feedback and insights on practical approaches in choosing the relevant indicators, while setting biodiversity targets. This helped to make this guidance actionable and easily integrated into city planning, ensuring flexibility for cities of different sizes, climates, and development stages while promoting nature-positive outcomes.

1.2. Main goal of the guidance

The primary objective of the Nature SBTs for Cities program is to provide local governments and city authorities with clear, actionable guidance on how to set targets that contribute positively to nature. This guidance provides a clear three step approach in which cities assess their local context, select and measure on relevant indicators and set appropriate targets. The urgency to act on nature has never been clearer—and cities can act as powerful levers to drive change. This need is recognised broadly and many frameworks and initiatives exist to address nature-related goals. However, the abundance and variety of available frameworks can make the landscape overwhelming for cities, and guidance on how to choose among these frameworks and initiatives is often lacking.

This guidance is designed to build upon and integrate existing frameworks (Figure 1), helping cities identify the best target-setting methodologies for nature within their unique context. By doing so, this guidance aims to reduce complexity for cities and provide clear, actionable steps to improve their impact on nature and set themselves on a pathway toward a nature-positive future.

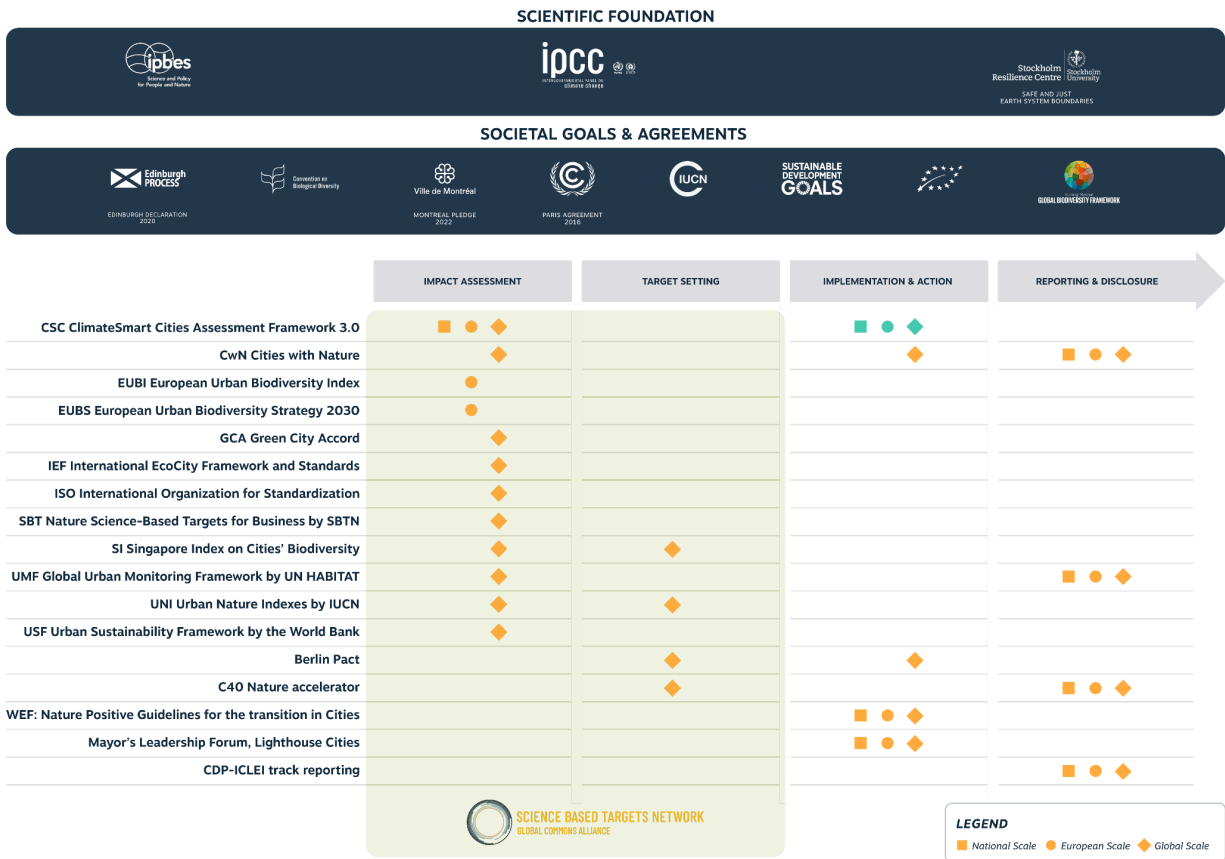


Figure 1. Indication of the scientific foundation, agreements, frameworks and initiatives that work on urban nature target setting and action. This guidance assessed and integrated frameworks focussed on impact assessment and target

setting. Source: Authors

Target audience

While this guidance is primarily designed for local governments in cities and municipalities, regional and national governments can also apply it to evaluate their natural environment and set targets. Some indicators may need modifications in measurement methods, but aligning assessments and targets across regions or subnational areas could foster greater coordination and impact in nature conservation across different levels of governance.

1.3. Pilot theme: Land use development and sprawl

This guidance is a first pilot, therefore, focuses on one pressure theme - Land Use Development and Sprawl. Drawing on previous work on this theme [3,4,5], land use development and sprawl is defined as: *'the expansion and infill of urban and surrounding lands and seas with the development of built-up and artificial areas'*. This kind of development - such as the conversion of natural habitats, infrastructure development, deforestation, etc. - often results in alterations that profoundly impact the original ecosystem, such as habitat loss and fragmentation, degradation of ecosystem services, and reduced soil permeability and overall soil quality.

This theme was selected through an assessment of over 30 urban pressures on nature across 13 criteria covering applicability, impact on biodiversity, equity, data availability, SBTN principles, and connection with climate change ([appendix A](#)). Land Use Development and Sprawl emerged as the top scoring theme, possessing a direct relationship with the most significant driver of biodiversity loss: land use change. It also aligns with nearly all the global imperatives and scientific frameworks assessed. In other words, by focusing on this theme, there is great potential to address its impact on global biodiversity loss. Moreover, land use planning is often within the scope and responsibilities of local governments, who also often have access to data concerning land use within their jurisdiction. Integrating these targets into their assessments can be a practical step for the city's transition to nature positive.

We acknowledge that cities apply pressures across multiple realms (e.g. water use and water pollution) that also play critical roles in biodiversity loss and ecosystem health. Hence, future work will therefore expand this guidance with additional pressure themes to reflect a more comprehensive scope (an overview of pressures can be found in [appendix A](#)).

1.4. Links to other SBTN programs

This development of this guide builds and joins the Science-Based Targets Network's (SBTN) established initiatives, aligning closely with prior programs like Science-Based Targets (SBTs) for Nature for Corporates [6] and SBTs for Climate for Cities [7] (see Figure 2). It leverages previous SBTN guidance and incorporates relevant tools from other programs to create a clear, cohesive framework tailored specifically for cities and nature.

These existing programs have been instrumental in guiding businesses and cities toward adopting science-based targets for sustainability within their sectors. By expanding its focus to address both climate and nature across cities and businesses, SBTN is advancing towards an integrated, whole-of-society approach to sustainability.

Integrating nature SBTs for cities addresses a critical gap by providing guidance that connects nature and climate change, recognising their interdependence. Climate change drives biodiversity loss through habitat destruction, shifting weather patterns, and extreme events, while biodiversity loss weakens ecosystems' ability to store carbon and regulate climate impacts. The degradation of forests, wetlands, and soils further reduces nature's capacity to absorb carbon and mitigate climate extremes. Addressing these challenges separately is insufficient—real progress requires a coordinated approach that tackles climate and biodiversity together.

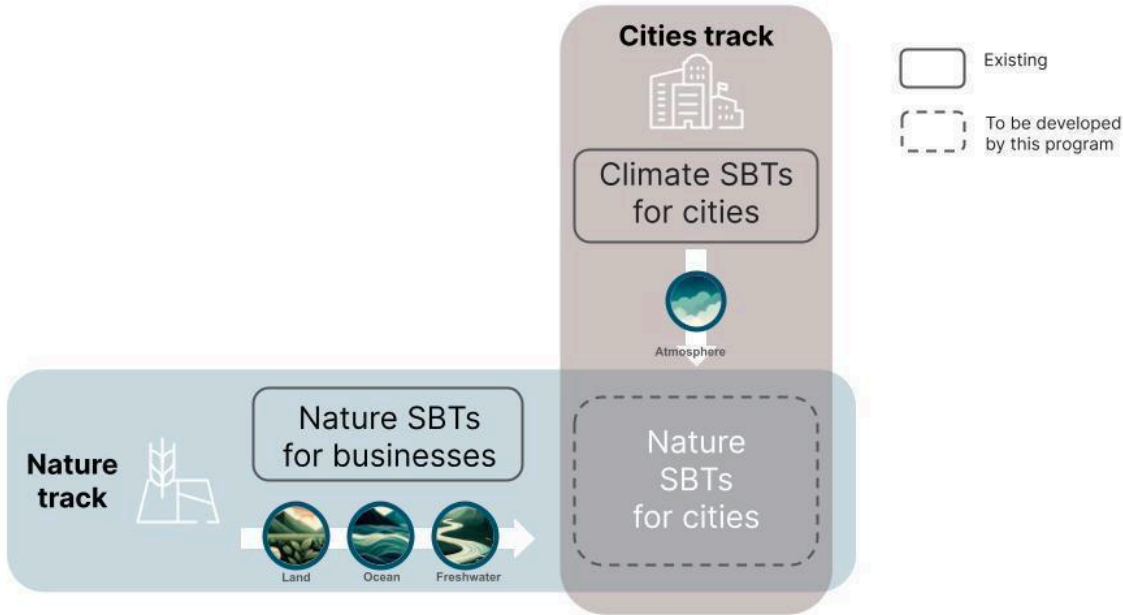


Figure 2: The development of Science-Based Targets (SBT) for nature in cities builds on existing SBTs for nature for businesses and for climate for cities, promoting sustainable practices through ambitious, science-based goals. Expanding SBTs to encompass nature for cities marks a vital step towards a unified approach to environmental sustainability. Source: SBTN (adjusted by the authors for this guidance.)

2. Preliminary considerations: overview and prerequisites

This chapter provides a brief overview of the guidance and summarises the prerequisites for each step, in terms of equity and justice.

2.1. Overview of the guidance steps

The main goal of this guidance is to support your city in setting nature targets through a three-step process (see figure 3);

- **Step 1. Your city context**
You define your city's context to inform relevant choices and decisions in the next steps.
- **Step 2. Assess & Prioritize**
You select relevant indicators to assess the state of nature and pressures affecting it in your city.
- **Step 3. Setting targets**
Finally, you set targets for your selected indicators to start enhancing the state of nature in your city, including measures to address the pressures caused by land-use and other impacts.

STEP 1 : Establish Your City Context

To establish the existing context, consider each of the following areas.

Ecosystem Types	Record the condition of native terrestrial and aquatic ecosystems using the IUCN Global Ecosystem Typology .
Data Availability	Choose one: High: access to GIS, satellite data and spatial analysis Medium: only basic GIS with external support needed Low: limited tools with external expertise needed
Policy Context	Review regional/national policies and programmes to ensure alignment with city-level commitments.
Capacity to Act	Complete the questionnaire to determine your capacity level as either standard, intermediate, or advanced.

STEP 2 : Assess Human Pressures and Prioritize the State of Nature

Choose from a set of indicators to assess both human pressures on nature and to prioritize the state of nature.

Human Pressures	Choose between two methodological options to assess pressures on nature from the pilot theme of Land Development and Sprawl .
Natural Areas	Assess the extent and quality of natural areas (choose from 2 methodological options for each).
Bio-diversity	Indicators are provided for species richness, population change, habitats, and soils (choose 2 methodological options).
Ecosystem services	Indicators are provided for four services: agriculture, freshwater, woodfuels, and sacred sites (choose from among 7 options).

STEP 3 : Set Targets

Set ambitious yet achievable targets for the indicators in step 2.

Select a target approach for each:

Prescriptive **Directional**

Specific percentages with set deadlines

Figure 3: Overview of the three main steps in this guidance and the relations between the elements within them. Source: Authors



2.2. Equity and Justice are prerequisites

When your city sets targets to improve the state of nature, the scope, level and approach to achieving these targets must adhere to key guiding principles. Rooted in Earth-system justice [8], these principles ensure both procedural justice (including access to information, decision-making, civic space, and courts) and substantive justice (ensuring equitable access to resources and harm-free allocation of risks and responsibilities). Your city's nature-focused targets and actions must align with these principles.

Governance and decision making processes must:

- Be inclusive, while ensuring fundamental equity. Additionally, equity extends beyond human considerations to embrace non-human species —be it pollinators, urban forests, wetlands, or other vital ecological components—ensuring their intrinsic roles and needs are accounted for.
- Respect rights of all, with a particular focus on marginalized groups such as Indigenous Peoples and local communities. This requires moving beyond participatory approaches to adopt rights-based frameworks, which prioritize and uphold the rights of all stakeholders.
- Ensure transparency.
- Provide dispute resolution mechanisms.
- Equitably share the costs and benefits of conservation among all relevant ethnic, gender, and age groups.

Efforts to enhance nature in your city must:

- Go hand in hand with ensuring access to fundamental needs such as food, water, and housing
- Maintain a balance between educational opportunities, public safety, health, and overall financial growth.

These considerations are not separate from the three steps but are fundamental, non-negotiable guiding principles. They must be integrated into every phase of the process with the same priority and urgency as ecological or technical goals. Failing to do so risks undermining the transformative potential of SBTs for nature, allowing governance models to perpetuate inequality or disregard the rights and voices of all stakeholders – , both human and non-human.

Integration of equity in the guidance steps

As outlined in the previous section (figure 3), this guidance focuses on three main steps. While assessing, prioritizing and setting targets, it is important to ensure that the process is equitable and inclusive. For this reason, we provide some examples on how equity can be incorporated in each step. More examples on how to incorporate equity and justice will be provided throughout the guidance within each step. A more detailed overview is provided in [Appendix B](#).

- **Step 1: Establish your city context**
 - When outlining your city context, actively incorporate your population demographics in your analysis. Consider where marginalized communities in your city reside; which communities rely on specific ecosystems; and which non-human species inhabit your city, along with their ecological needs.
- **Step 2: Assess Human Pressure & Prioritize State of Nature**
 - Integrate citizen-science and traditional ecological knowledge (e.g., Indigenous knowledge about species migration patterns) when measuring indicators to capture overlooked environmental impacts. Ensure that contributors are fairly compensated for their time and efforts.
 - Make nature-related data accessible by using visuals, multilingual formats, open-access platforms and community meetings. This approach fosters engagement from both technical experts and local residents who rely on these ecosystems.
- **Step 3: Set targets**
 - Establish targets that not only enhance nature but also ensure equitable distributions of the ecosystem service benefits, particularly for underserved communities. This includes equitable access to cultural and recreational spaces as well as protective services like urban heat island mitigation and flood prevention.
 - Setting biodiversity restoration targets that address historical inequities, such as increasing biodiversity-rich parks in neighborhoods with limited green spaces.

These examples highlight the importance of embedding equity, inclusion, and rights-based approaches as foundational principles in your city's implementation of this guidance rather than treating them as isolated indicators or specific targets. A more detailed overview can be found in [Appendix B](#).

3. Step 1: Understanding your city context

In this first step of the guidance (figure 4), you will outline the local context based on the following elements:

1. Ecosystem types
2. Data availability
3. Policy context
4. Capacity to act

The following sub-sections provide a detailed guide on how to define the city context using each of the above elements.

Why first outline your city's context?

This first Step is essential for shaping Step 2 and Step 3 of this guidance. Contextualizing these four elements of your city context may be done simultaneously. Some elements may overlap but their main purpose is to inform and support the decisions made in later steps rather than one another. Even if your city's general context is well understood, it is crucial to clearly define its key aspects. This clarity helps you select relevant indicators and apply appropriate methodologies in Step 2, as well as set meaningful targets in Step 3.

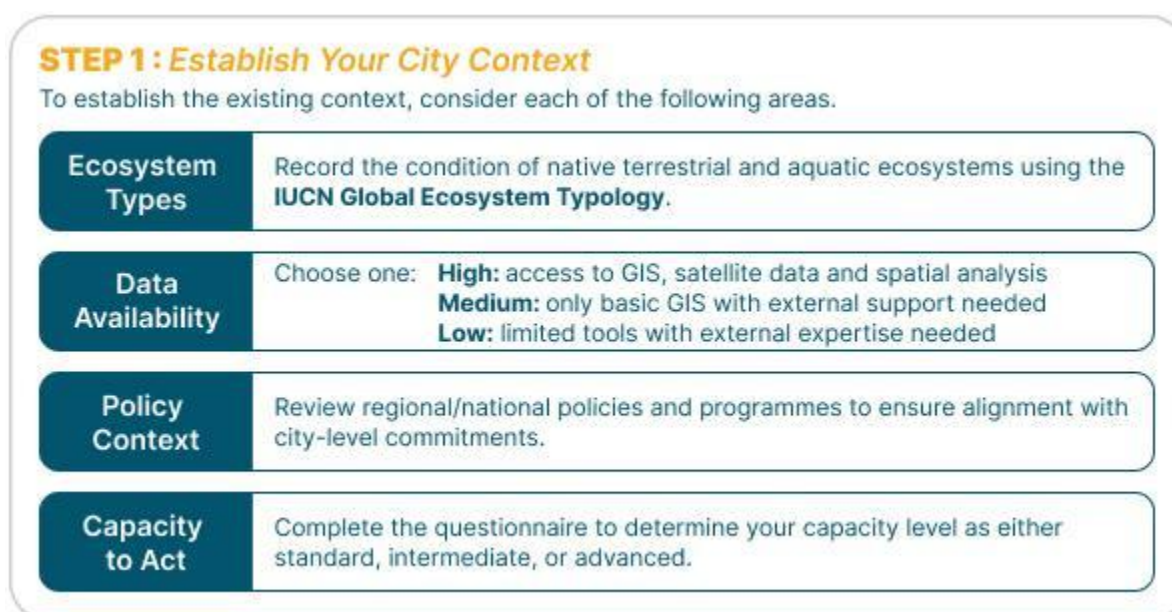


Figure 4. Overview of the main steps in this guidance with step 1 Your City Context highlighted. Source: Authors

3.1. Ecosystem types: understanding where to assess and target

In Step 1, your city’s objective is to build a **diagnostic baseline** of urban nature that will later inform **prioritisation** (Step 2) and **target-setting** (Step 3). At this stage, you are not yet choosing indicators or setting targets; you are answering three basic questions:

1. **What kinds of ecosystems are present in our jurisdiction?**
2. **Where are they located and how extensive are they?**
3. **In what broad condition are they?**

The typology provided above supports this by helping your city to:

- **Identify key ecosystem types** that exist within your boundary (for example, wetlands, remnant forests, terrace agriculture, green roofs, street-tree systems).
- **Describe their condition in a simple, comparable way** (for example, intact vs heavily degraded wetlands; well-managed vs poorly managed parks; functional vs non-functional bioswales).
- **Generate a spatial overview** of “what nature we have, in what state, and where” that is consistent across departments and data sources.

This step ensures that any indicators selected later (in Step 2) are grounded in **the actual ecosystems present in your city**, rather than the qualities of “urban green space” more generally.

Table 1. Urban ecosystem typology: groups, sub-types, condition and ecological focus

Broad ecosystem group	Typical sub-types found in cities	Condition	Examples of ecological focus (non-exhaustive)
Terrestrial remnant ecosystems	Natural/semi-natural forests; Woodlands, scrub; Remnant grasslands and savannas; Rocky outcrops; Dunes.	<i>Intact / moderately modified / heavily degraded</i>	Structural habitat quality, native biodiversity, connectivity, microclimate regulation, erosion control.
Agrarian and production ecosystems	Croplands, Orchards; Agroforestry plots; Grazing lands; Community gardens and allotments; Urban farms; Brackish aquaculture ponds; Salt pans; Terrace agriculture	<i>Intact / moderately modified / heavily degraded</i>	Soil health, water use, agro-biodiversity, pollination, food provisioning, nutrient cycling.
Aquatic and riparian ecosystems	Rivers and streams (natural to channelised); Canals and drains; Ponds and lakes; Reservoirs; Wetlands; Mangroves and Saltmarshes;	<i>Intact / moderately modified / heavily degraded</i>	Hydrology, water quality, aquatic and wetland biota, flood regulation, blue-green connectivity.
Designed vegetated ecosystems	Urban parks (neighbourhood, district, metropolitan); Gardens (private yards, institutional gardens, temple/church grounds); Cemeteries and Burial Grounds; Formal squares with trees; Sports fields and lawns; Street-tree systems	<i>Well managed / minimally managed / poorly managed</i>	Access to nature, recreational and cultural services, urban cooling, generalist biodiversity, social equity.
Engineered blue green ecosystems	Green roofs (extensive, intensive); Green walls and facades; Sea walls; Bioswales; Rain gardens; Shelterbelt plantations; Bio-engineered check dams; Stormwater retention basins; Culturally associated water harvesting systems	<i>Functional / partially functional / non-functional</i>	Stormwater management, flood risk reduction, microclimate regulation, habitat creation in built fabric.
Highly artificial / sealed ecosystems with sparse biota	Road and plaza surfaces; Parking lots —still functioning as ecosystems for disturbance-tolerant plants, invertebrates, and urban fauna.	<i>Completely sealed / partially vegetated / opportunities for retrofitting</i>	Imperviousness, heat islands, barriers or filters to movement, but also habitat for disturbance-tolerant species.

Box 1: Ecosystem Types: How your city can apply the typology categorisation in practice

You can use the typology through a simple two-step process.

Step 1 – Map ecosystem types in your city

- Use existing land-use/land-cover datasets, remote sensing (e.g. satellite imagery), local expert knowledge and field surveys to **map all vegetated, aquatic and sealed areas** within your administrative boundary.
- For each mapped unit (polygon or segment), assign:
 - **One broad ecosystem group** from the typology (e.g. Terrestrial remnant, Agrarian and production, Aquatic and riparian, Designed vegetated, Engineered green–blue, Highly artificial / sealed), and
 - Where useful, a **more specific sub-type** (e.g. “wetland”, “mangrove”, “terrace agriculture”, “bioswale”, “cemetery”, “parking lot”).

This produces a **spatial ecosystem map** for your city, showing the distribution and area of each ecosystem type across neighbourhoods and key planning zones.

Step 2 – Record the condition of each ecosystem unit

- For each mapped unit, assign a **condition category** appropriate to its ecosystem group. Examples include:
 - Terrestrial, agrarian, aquatic ecosystems: *intact / moderately modified / heavily degraded*;
 - Designed vegetated systems: *well managed / minimally managed / poorly managed*;
 - Engineered green–blue systems: *functional / partially functional / non-functional*;
 - Sealed areas: *completely sealed / partially vegetated / opportunities for retrofitting*.
- Your city can base this classification on simple, observable criteria, such as:
 - Visible pollution, erosion, sedimentation or encroachment.
 - Presence of native vs invasive or disturbance-tolerant species.
 - Degree of connectivity or physical disruption (e.g. culverted or fragmented waterways, isolated forest patches).
 - Operational status of engineered systems (e.g. whether rain gardens effectively drain and infiltrate water; whether bioswales are clogged).

Now your city has a **mapped dataset where every polygon or segment has two core attributes:**

- **Ecosystem type** (what it is), and
- **Condition** (what state it is in).

The ecosystem baseline is not an end in itself. It is an input to Step 2, where your city will overlay this map with information on data availability, existing policy commitments and programmes, and institutional and financial capacity. Together, these factors will help you decide **which ecosystem types to prioritise and which indicators are feasible and most relevant to monitor for your context**. These indicators will then form the basis for **setting measurable targets in Step 3**.

How this supports city context-setting

Using this approach helps your city to:

- Answer, in a structured way, the question: “**What nature do we have, in what condition, and where is it located?**”
- **Differentiate your city’s ecological profile** from others. For example:
 - A city with extensive wetlands will naturally give more weight to wetland extent, water quality and wetland-dependent biodiversity.
 - A city with significant remnant forests will emphasise forest canopy, connectivity and forest-dependent species.
- Establish a transparent chain from:
 - **ecosystem mapping** →
 - **condition assessment** →
 - **tentative indicator options linked to ecosystem type and condition (to be screened and refined in Step 2)** →
 - and, finally, **priority-setting for conservation, restoration and Nature-based Solutions (NbS) investments (also consolidated in Step 2)**.

For instance, if your city identifies several heavily degraded wetlands in the **Aquatic and riparian** group, you may, at this stage, note candidate indicators related to water quality, wetland-dependent species and flood storage capacity for those areas. If, in contrast, your city maps intact remnant temperate forests in the **Terrestrial remnant** group, you may note candidate indicators relating to canopy cover, forest biodiversity and habitat connectivity. In Step 2, these preliminary indicator options will be further tested against **data availability, policy commitments and capacity to act**, so that the final set of indicators reflects both the ecological character of your city and what is realistically actionable for your local context.

3.2. Data availability: Assessing what is feasible to measure

To understand your city's context, assess **data availability** and the **overall capacity** of your local government (or responsible organisation) to generate and work with data. This assessment will guide whether your city should initially apply **core (basic)** indicator methodologies or whether it can already implement **comprehensive (more detailed)** methodologies.





Each indicator in this framework can be measured using different methodological levels, from simpler **core** approaches that rely on basic data, to more **comprehensive** approaches that demand higher-resolution data, more advanced tools, and greater analytical effort. To determine which level is feasible for your city, you should first evaluate:

- whether relevant datasets exist or can be obtained, and
- your city's capacity to **collect, process, analyse, and manage** these data.

At this stage, focus on your city's **general capacity for data and methods** (for example, use of spatial maps, GIS, ability to run surveys, access to research partners), rather than on capacity for individual indicators. Later chapters will provide specific guidance on indicator-level capacities, including tailored methodologies and data requirements for each indicator.

Use Table 5 to self-assess your city's capacity for the main data and method types that underpin the indicators. This will inform whether a **core** or **comprehensive** methodology is appropriate for each indicator in subsequent steps.

Table 2. Review data and methods to determine your capacity level for choosing indicator methodology

Indicator Type	Comprehensive	←-----→	Core
Geospatial data (e.g. satellite data) 	Advanced use of GIS, satellite and spatial plans: city has technical expertise to process and analyze data.	Access to GIS and satellite and spatial plans with some expertise: may require external support for processing data.	Limited or no access to geospatial data or plans: relies on external partners.
Existing public datasets 	Able to access, integrate, and analyze public datasets efficiently.	Access to public datasets but limited capacity for in depth analysis.	Relies on basic use of public datasets without significant analysis.
Existing regional/national research done by research institutions (e.g. universities) 	Strong partnerships with research institutions for access to detailed regional/national research.	Moderate collaboration with institutions: uses research but may lack capacity to analyze it fully.	Limited access to or collaboration with research institutions.
Primary data collection by surveys (data from citizens and/or businesses) 	Skilled staff, tools, and resources to design, distribute, and analyze complex surveys.	Capacity to conduct basic surveys, may rely on external help for design or analysis.	Limited capacity to conduct surveys: relies on external partners or simplified methods.

This step will help your city understand its overall data and methodological capacity. The results will inform whether you should apply core or comprehensive methodologies for each indicator in Step 2, ensuring that selected indicators are both relevant and realistically measurable.

3.3. Existing policy context

This step requires assessing your city's context by reviewing its existing policy and governance landscape. Many cities already have policies, strategies, and targets related to nature, climate, land use, and sustainability that partially align with the indicators in this guidance. These may include urban master plans, climate action strategies, disaster risk reduction plans, green space and biodiversity strategies, or national biodiversity and climate commitments that cascade down to the city level.

A structured policy-mapping exercise will help you to:

- Identify which ecosystem services, habitats, and social groups are already prioritised.
- Understand which indicators and datasets are already collected by different departments.
- Reveal misalignments, gaps, or conflicts between policies and mandates.
- Clarify how this existing landscape can inform indicator selection (Step 2) and baseline analysis and prioritisation (Step 3), including SBTN-style assessments.

3.3.1. Compile policies and actors

List the key policies, plans and programmes at three levels that affect nature and ecosystem services:

- **City level:** master/local development plans, climate action plans, DRR plans, green space or biodiversity strategies, river or wetland plans.
- **Regional/subnational level:** regional spatial plans, river-basin or watershed plans, forestry/biodiversity policies, regional climate or DRR strategies.
- **National level:** NBS/biodiversity strategies, climate policy/NDC, wetland and water policies, coastal regulations, national urban or green-infrastructure missions.

At the same time, note the **lead departments and agencies** responsible for implementation and monitoring (planning, environment, parks, water, housing, DRR, health, basin authorities, etc.) and any formal coordination mechanisms (committees, basin councils, task forces).

Some questions that can be picked up by your city for assessing this are outlined in the table below

Table 3. Focus areas and guiding questions for reviewing the city's existing policy and governance context

Focus area	Illustrative Guiding questions
Scope of policies	<ul style="list-style-type: none"> • Which policies, plans, and programmes explicitly mention nature, ecosystem services, biodiversity, climate resilience, or urban greening? • At which levels do they operate (city, metropolitan/regional, subnational, national)?
Ecosystem services	<ul style="list-style-type: none"> • Which ecosystem services are explicitly or implicitly prioritised (e.g. air quality, urban cooling, stormwater management, flood regulation, recreation, food production, cultural values)? • Are key services for vulnerable groups or priority neighbourhoods recognised?
Biodiversity & habitats	<ul style="list-style-type: none"> • Do existing policies identify priority species, habitats, or ecological corridors in the city (e.g. wetlands, rivers, remnant forests, coastal ecosystems, peri-urban agriculture)? • Are there quantitative or qualitative targets for these (e.g. “no net loss of wetlands,” “X% increase in tree canopy”)?
Spatial focus	<ul style="list-style-type: none"> • Which areas of the city are spatially prioritised (e.g. “high-risk flood zones,” “heat-stress wards,” “informal settlements,” “river corridors”)? • Are these priorities mapped, and can they be overlaid with ecological or socio-economic data?
Indicators & monitoring	<ul style="list-style-type: none"> • What indicators are currently used to track implementation (e.g. number of trees planted, green space per capita, water quality parameters, protected area coverage)? • How often are these indicators monitored, and by whom? Is the data accessible?
Targets & commitments	<ul style="list-style-type: none"> • Are there measurable nature- or climate-related targets (e.g. SDG-aligned, NDC-linked, city climate action plan targets, Master plan and others)? • Do these targets have time-frames, baselines, and responsible agencies clearly defined?
Institutions & mandates	<ul style="list-style-type: none"> • Which departments and agencies are responsible for planning, implementation, enforcement, and monitoring (e.g. environment, planning, parks, water, housing, disaster management)? • Are mandates overlapping, fragmented, or complementary?
Instruments & financing	<ul style="list-style-type: none"> • Which regulatory, planning, and financial instruments are used (e.g. zoning, building by-laws, environmental impact assessment, green bonds, grants, PPPs)? • Are there dedicated budgets for nature-related actions?

Participation & equity	<ul style="list-style-type: none"> • How are communities, civil society, and private actors involved in policy formulation and implementation (consultations, co-design, citizen science, community monitoring)? • Do policies recognise equity, justice, or inclusion (e.g. focus on low-income or high-risk groups)?
Policy gaps & conflicts	<ul style="list-style-type: none"> • Are there policies that inadvertently increase pressure on nature (e.g. incentives for sprawl or hard infrastructure that degrades wetlands)? • Where do contradictions or gaps appear between sectoral policies (e.g. housing vs. conservation)?

Following this the city can consider using the following template for policy mapping:

Table 4. Policy-mapping template across city, regional and national scales for nature and ecosystem governance

Scale	Policy / Plan / programme	Nature / ecosystem objectives or targets	Main ecosystem services / habitats (Focus on those identified in Step 3.1)	Existing indicators / data	Key gaps or conflicts
City/Local					
Regional/ Sub National					
National					

The completed policy-mapping table should be used as a reference when selecting indicators in Step 2 and interpreting baseline results in Step 3, ensuring that the assessment is aligned with existing commitments while also revealing gaps and opportunities for strengthening SBTN-related targets and nature-based solutions.

Box 2: Example from Verdantia: Using Policy Mapping to Refine Urban Cooling Targets

The city of Verdantia completed the Step-1 policy scan and summarised it in the policy-mapping table. For urban cooling, the table showed that:

- The **national climate strategy** promotes urban greening and cool roofs in major cities but does not specify local canopy targets.
- The **regional climate resilience plan** identifies Verdantia as a heat-stress hotspot and recommends increasing tree cover in dense neighbourhoods.
- The **city climate action plan** includes a general objective to “reduce heat stress through green infrastructure” but only tracks the *number of trees planted*, without spatial or equity considerations.
- No document defines minimum canopy cover for high-risk districts, and no department systematically maps **tree canopy cover** or **surface temperature**.

3.4 Capacity to act

In the last part of assessing your city context, you will review your **capacity to set, implement, and track targets** for urban nature. The aim is not yet to define targets, but to understand **how ambitious and specific** your targets can realistically be in the next planning cycle.

Capacity is considered across three interconnected dimensions:

1. **Technical capacity**
2. **Institutional capacity**
3. **Financial capacity**

Together, these dimensions determine how far your city can go in translating indicators into **equitable, context-specific, and actionable targets**.

A. Key capacity dimensions and their implications

You may use the table 5 below as a reference when reflecting on your city’s situation.

Table 5. Key capacity dimensions and implications for target-setting on urban nature

Capacity dimension	What it covers	Considerations	Implications for target-setting	Illustrative actions to strengthen capacity
Technical capacity	Skills, tools, and data needed to assess ecological conditions and monitor change.	<p>Staff with training in ecology, urban forestry, environmental science, GIS, statistics;</p> <p>Ability to conduct biodiversity or ecosystem assessments; access to spatial and monitoring data;</p> <p>Use of remote sensing or open-source tools.</p>	<p>High technical capacity supports prescriptive targets with quantitative baselines and percentage-based improvements (e.g. “increase canopy cover by X% by year Y”).</p> <p>Emerging capacity may favour directional targets (e.g. “increase street-tree cover”) until stronger baselines and monitoring systems are in place.</p>	<p>Train staff in ecological assessment, monitoring, and data analysis;</p> <p>Adopt standard monitoring protocols; engage citizen science to expand data collection;</p> <p>Build partnerships with universities, research institutions, and NGOs;</p> <p>Use open-source GIS and remote-sensing tools.</p>

<p>Institutional capacity</p>	<p>Governance arrangements, mandates, and political support for nature.</p>	<p>Existence of a biodiversity or nature office; clearly assigned responsibilities;</p> <p>Cross-departmental working groups;</p> <p>Integration of nature in planning, transport, and infrastructure decisions; presence and implementation of biodiversity strategies or action plans;</p> <p>Level of political priority for nature.</p>	<p>Strong institutional capacity allows cities to commit to advanced prescriptive targets and to coordinate implementation across departments.</p> <p>Where institutional capacity is still developing, cities may start with standard-level targets aligned with current mandates and use early results to build broader political and organisational support.</p>	<p>Designate a lead unit for nature initiatives;</p> <p>Create inter-departmental coordination mechanisms;</p> <p>Develop or update local biodiversity strategies and NbS plans;</p> <p>Build political support through demonstration projects and communication of co-benefits (climate resilience, health, economic value);</p> <p>Participate in city networks and peer-learning platforms.</p>
<p>Financial capacity</p>	<p>Resources available to implement and sustain nature-related actions.</p>	<p>Dedicated budget lines for biodiversity or green infrastructure; access to external funds (national programmes, climate funds, foundations); ability to co-finance projects; predictability and stability of funding; capacity to prepare funding proposals.</p>	<p>Stable, dedicated funding enables intermediate or advanced prescriptive targets that require sustained investment (e.g. large-scale restoration, extensive green infrastructure, long-term monitoring).</p> <p>Limited or uncertain funding may call for standard-level prescriptive targets in priority areas, complemented by directional targets that depend on mobilising future resources.</p>	<p>Secure dedicated annual budgets for nature;</p> <p>Integrate NbS into existing infrastructure budgets;</p> <p>Prepare investment cases that quantify ecosystem service benefits;</p> <p>Diversify funding sources (national funds, multilateral finance, private partnerships, philanthropy);</p> <p>Explore innovative instruments (green bonds, PES, offsets) where appropriate.</p>

These three dimensions reinforce each other: institutional support often shapes budget allocations; financial resources enable technical capacity-building; and robust technical evidence can, in turn, strengthen political and institutional backing.

B. Summarising your city's capacity profile

Rather than using a formal questionnaire, cities are encouraged to translate the reflections above into a **concise capacity profile**:

- For each dimension (**technical, institutional, financial**), classify your city as having **emerging, moderate, or strong** capacity.
- Provide 2–3 sentences of justification for each rating, referencing concrete evidence such as staff, existing plans and strategies, partnerships, budgets, and current projects.

This qualitative profile gives an initial picture of **how ambitious your targets can be in the coming cycle**, and where additional investment or reform may be needed to support more ambitious targets in future.

C. Link to Step 3 – using capacity to shape target type and ambition

The actual **target-setting** will be carried out in **Step 3** of this framework. The capacity profile from this step will guide:

- the choice between **prescriptive** (quantitative) and **directional** (qualitative or trend-based) targets, and
- the appropriate **ambition level** (standard, intermediate, or advanced) for each indicator.

In general:

- Cities with **strong** technical, institutional, and financial capacity can adopt **more ambitious prescriptive targets**, with explicit percentage improvements and shorter timelines.
- Cities with **emerging or moderate** capacity may prioritise **standard-level prescriptive targets** for a limited set of critical indicators, complemented by **directional targets** in areas where baselines or resources are not yet sufficient.

This capacity-informed approach helps ensure that targets are both **meaningful and feasible**, and that they can be progressively strengthened as your city invests in technical skills, governance arrangements, and financing for urban nature.

In box 3 you can find an example that illustrates how a low-capacity, desert-based coastal city in the Global South can use Step 1 to outline its ecosystem baseline, data and policy context, and overall capacity, and how these insights can later inform realistic and context-appropriate target-setting in Step 3.

The next chapter will guide you through [Step 2](#) where you will select a relevant set of indicators and measuring methods to assess the state of pressures and nature in your city.

Box 3: Key Concepts for Target-Setting

Before developing your capacity profile, it is important to understand three classification systems that will guide your indicator selection and target-setting in subsequent steps. These concepts—capacity ratings, target types, and ambition levels—work together to help your city set realistic, appropriately ambitious targets.

Capacity Ratings

Capacity ratings describe your city's current readiness to set, implement, and monitor nature targets. Use the definitions in Table A to rate each dimension (technical, institutional, financial) based on your assessment.

Table A. Capacity rating definitions

Rating	Description
Emerging	Limited dedicated staff, tools, or budgets; responsibilities fragmented or unclear; nature not yet a stated policy priority; monitoring ad hoc or project-dependent.
Moderate	Some trained staff and established processes; nature recognised in policy but not consistently prioritised; coordination improving but still partial; funding available but not secure or dedicated.
Strong	Dedicated teams with specialist expertise; clear mandates and cross-departmental coordination; nature embedded in planning and budgeting cycles; stable, multi-year funding in place.

Target Types

Target types describe how targets are expressed. The choice between prescriptive and directional targets depends primarily on your technical capacity—specifically, whether you have reliable baselines and monitoring systems in place.

Table B. Target type definitions

Target Type	Definition	Example
Prescriptive	Quantitative targets specifying a measurable outcome, magnitude of change, and timeline. Requires reliable baseline data and monitoring capacity.	Increase district-level canopy cover by 15% by 2030.
Directional	Trend-based targets indicating the desired direction of change without fixed quantities. Appropriate where baselines or monitoring capacity are not yet sufficient for precise commitments.	Increase street-tree cover in heat-stressed neighbourhoods.

Ambition Levels

Ambition levels describe how far targets aim to go. The choice of ambition level depends primarily on your institutional and financial capacity—specifically, whether you have the governance arrangements, political support, and resources to deliver on more stretching commitments.

Table C. Ambition level definitions

Level	Description
Standard	Targets aligned with existing mandates and achievable within current resources; represent a credible starting point.
Intermediate	Targets that stretch beyond business-as-usual but remain feasible with moderate investment in capacity or resources.
Advanced	Ambitious targets requiring significant new investment, cross-sectoral coordination, or systemic change; appropriate where strong capacity exists or is being built.

How Target Type and Ambition Level Combine

The two classifications work together. A city selects a target type (prescriptive or directional) based on data and monitoring readiness, and an ambition level based on institutional and financial capacity. Table 9 illustrates how these choices combine, using an urban cooling indicator (canopy cover in heat-stressed areas) as an example.

Table D. Matrix of target type and ambition level with illustrative examples

	Standard	Intermediate	Advanced
Prescriptive	"Increase canopy cover in priority heat-stressed wards by 5% by 2030."	"Increase canopy cover in all heat-stressed wards by 15% by 2030, with no ward below 10% cover."	"Achieve 25% canopy cover in all heat-stressed wards by 2030, closing the gap with city average."
Directional	"Increase tree planting in identified heat-stressed neighbourhoods."	"Progressively expand canopy cover across heat-stressed areas, prioritising lowest-cover wards first."	"Systematically eliminate canopy-cover disparities between heat-stressed and other neighbourhoods."

In general, cities with strong technical capacity (reliable baselines, established monitoring systems) can set prescriptive targets. Cities with emerging technical capacity may begin with directional targets while building monitoring systems. Ambition level is then calibrated to institutional and financial capacity: cities with stronger capacity in these dimensions can aim higher within whichever target type they select. As capacity develops over successive planning cycles, cities can

progress from directional to prescriptive targets, and from standard to intermediate or advanced ambition levels.

Developing Your Capacity Profile

Using Table 5 and the definitions above, develop a concise capacity profile by rating each dimension—technical, institutional, and financial—as emerging, moderate, or strong. Provide short justifications grounded in existing staff, plans, partnerships, budgets, and projects.

This profile shapes Step 3 in two ways: it guides whether targets should be prescriptive or directional, and it calibrates ambition level (standard, intermediate, or advanced). Cities with strong capacity across all three dimensions can commit to ambitious prescriptive targets with clear percentage improvements and shorter timelines. Cities with emerging or moderate capacity may focus on standard-level prescriptive targets for a limited set of critical indicators, complemented by directional targets where baselines or resources are not yet in place.

Completing Step 1: Summary Profile

At the end of Step 1, your city should compile its findings into a summary profile that consolidates all four elements of your context assessment: ecosystem types, data availability, policy context, and capacity to act. This profile serves as the foundation for selecting indicators (Step 2) and setting targets (Step 3). Table E provides a template for organising your summary profile.

Table E. Step 1 Summary Profile template

Section	Key Questions to Answer
1. Ecosystem Overview	What ecosystem types are present? What condition are they in? Which are priorities for protection, restoration, or NbS investment?
2. Data and Methodological Capacity	For which indicator types can you use comprehensive methodologies? Where should you rely on core methods or external support?
3. Policy Context	What existing policies address nature, climate, or land use? What indicators are already tracked? Where are the gaps or misalignments? What alignment opportunities exist?
4. Capacity to Act	What are your ratings (emerging/moderate/strong) for technical, institutional, and financial capacity? What justifies each rating?
5. Implications for Steps 2 and 3	What indicator methodologies are feasible? What target types are appropriate? What ambition levels are realistic? What should your priority focus areas be?

6. Capacity-Building Priorities

What actions would strengthen capacity for future planning cycles?

City Example: Verdantia (illustrative only)

Verdantia is a fictitious mid-sized coastal city located in an arid, desert-based landscape in the Global South. The city has a compact historic core, rapidly expanding peri-urban settlements, and limited but growing interest in nature-based approaches, rapidly expanding peri-urban settlements, and limited but growing interest in nature-based approaches, with **urban sprawl emerging as a major driver of land-use change and ecosystem degradation**.

Its socio-economic context and municipal structures are comparable to cities with **low to emerging capacity** that are beginning to recognise the importance of urban nature but face constraints in data, staffing, and finance.

City context assessment (Step 1 focus)

1. Ecosystem types and condition

Using the urban ecosystem typology in this guidance, Verdantia identified and mapped the main ecosystem types within its administrative boundary. The summary is shown below.

Broad ecosystem group	Sub-types present in Verdantia	Dominant condition category	Notes on relevance
Terrestrial remnant ecosystems	Coastal sand dunes and dune scrub; rocky desert outcrops inland.	Heavily degraded (dune stabilisation by infrastructure, encroachment from urban sprawl , off-road driving, grazing, and informal extraction of sand and shrubs).	Important for stabilising coastal sands, providing windbreaks, and supporting drought-adapted flora and fauna; now highly fragmented by roads and informal housing.
Agrarian and production ecosystems	Small oases and irrigated plots near wetlands; peri-urban vegetable fields; date-palm groves.	Moderately modified (salinisation, over-extraction of groundwater, and conversion to built-up	Critical for local food security and livelihoods; provide shade and microclimate regulation in an otherwise highly exposed desert environment.

		land driven by urban sprawl).	
Aquatic and riparian ecosystems	Intermittent wetlands crossing the urban area; small coastal lagoons; a narrow, fragmented mangrove belt in the estuarine zone.	Heavily degraded (wetlands encroached and used as dumping grounds; lagoons partially filled; mangroves reduced and stressed by pollution and altered hydrology).	Key for flood conveyance during rare but intense rainfall events, shoreline protection, nursery habitat, and water quality buffering; currently under severe pressure.
Designed vegetated ecosystems	Neighbourhood pocket parks, roadside plantings on main avenues, planted roundabouts around key intersections.	Minimally managed to poorly managed (irregular irrigation and maintenance, high plant mortality, sparse tree cover).	Provide limited but important shade and recreational space; currently concentrated in wealthier areas, with low provision in informal settlements.
Engineered green–blue ecosystems	A few detention basins constructed in new housing schemes; roadside drainage channels; simple traditional cisterns and community tanks in older neighbourhoods.	Partially functional to non-functional (detention basins silted or used for dumping; traditional cisterns still used but not integrated in city planning).	Potential to support stormwater management and water storage in a highly water-scarce context; currently not managed as a coherent system.
Highly artificial / sealed ecosystems with sparse biota	Extensive asphalt roads and parking areas; port and industrial platforms; compacted open yards and courtyards.	Completely sealed , with occasional volunteer vegetation along cracks and edges.	Major contributors to heat stress and runoff; represent priority zones for future retrofits (street trees, permeable surfaces, shade structures).

Local experts also noted that the **mangrove belt and coastal lagoons** are likely to correspond to **threatened ecosystem types** in national and regional assessments, reinforcing their importance within the **Aquatic and riparian** group, even though the city currently has limited data to formally confirm their status.

2. Data availability and methodological capacity (overview)

Verdantia reviewed its data and methodological capacity along the main dimensions in Table 5 and concluded:

- **Geospatial data and GIS:** Access is limited to basic national land-cover maps and free satellite imagery; the city has only one staff member with partial GIS training and outdated

software. Complex analyses usually require support from national agencies or external consultants.

- **Existing public datasets:** Some national statistics and hydrological data exist, but they are not regularly updated at city scale and are rarely disaggregated to neighbourhood level.
- **Research partnerships:** The city has **ad hoc contact** with a nearby university but no formal collaboration or ongoing joint projects.
- **Primary data collection (surveys and fieldwork):** Municipal staff conduct occasional, small-scale inspections. There is no systematic ecological monitoring, and larger surveys depend on NGO or donor-funded projects.

Overall, Verdantia assessed its **general methodological capacity as low to emerging**. This implies that, in later steps, the city will need to rely mainly on **core methodologies** that use simple, available datasets and basic analyses, and will selectively engage external partners for more comprehensive assessments.

3. Existing policy context

Verdantia then reviewed its policy and planning context to understand how the ecosystem baseline connects to current priorities:

- A **flood and disaster risk management plan** focuses on protecting low-income settlements along wetlands from flash floods, **many of which have expanded informally as part of wider urban sprawl**, but it does not yet explicitly integrate nature-based solutions or riparian restoration.
- A **water scarcity and demand management policy** emphasises reducing household water use and leakage but makes only limited reference to traditional cisterns, oases, or vegetated solutions that could support microclimate regulation and local water storage.
- An **urban development plan** promotes port expansion, new coastal roads and tourism infrastructure, with little explicit consideration of dune, lagoon, or mangrove ecosystems.
- There is **no dedicated biodiversity or urban nature strategy**, and nature-related actions are scattered across departments (planning, public works, environment) without a clear overarching framework.
- **Unplanned urban sprawl**, particularly along wetlands and coastal dunes, is a major underlying driver of these pressures, but it is not yet addressed explicitly in existing plans.

This review shows that, while Verdantia has some relevant policies (especially on flood risk and water scarcity), the role of ecosystems and nature-based solutions is not yet systematically recognised, particularly for **wetlands, coastal dunes, and mangroves**.

4. Capacity to act (qualitative profile)

Synthesising the above, Verdantia developed the following qualitative capacity profile:

- **Technical capacity: emerging**

- A small number of staff have basic GIS and environmental knowledge, but there is no dedicated ecology or biodiversity team.
- The city lacks systematic monitoring programmes and depends on external projects for specialised assessments.
- **Institutional capacity: emerging**
 - Responsibilities for nature-related issues are spread across several departments, with no single lead unit.
 - There is some local political concern about flood risk and heat stress, but biodiversity and ecosystems are not yet explicit policy priorities.
 - Coordination between departments is limited and mostly project-based.
- **Financial capacity: low**
 - The city has no dedicated budget line for biodiversity or nature-based solutions.
 - Most environmental spending is reactive (e.g. post-flood repairs, emergency works) rather than planned investments in preventive or restorative measures.
 - Access to external funding is sporadic and dependent on donor-driven projects.

Given this profile, Verdantia concluded that, in the next planning cycle, it should:

- Focus on a **small number of priority indicators** that are directly linked to urgent issues (e.g. flood risk in wetlands, heat stress in dense low-income areas, loss of dunes and mangroves near critical infrastructure).
- Use primarily **directional targets** (e.g. “increase vegetated buffer along priority wetlands”, “protect remaining mangrove patches from further encroachment”, “introduce shade and vegetation along key pedestrian routes”) and **standard-level prescriptive targets** where data and resources permit (e.g. “establish at least X km of protected riparian buffer in high-risk wetlands segments”).

Treat the first planning cycle as an opportunity to **build technical, institutional, and financial capacity** (e.g. by forming partnerships with universities and NGOs, piloting small NbS projects, and seeking external funding), with the aim of moving toward more **quantitative prescriptive targets** in subsequent cycles.

4. Step 2: Assess Human Pressure and Prioritize State of Nature

In this second step, you will identify the most relevant indicators to assess both the pressures on nature and the state of nature within your city (figure 5). You can choose from different measurement methodologies to ensure that the selected indicators are both feasible and appropriate for your city’s context.

In box 4 a summary can be found of how you will be selecting indicators in this second step of the guidance. In box 5 examples are given for integrating equity throughout this step.

The first part of step 2 guides you in assessing your city's pressures on nature. And the second part of this step, guides you in assessing the state of nature in your city. This chapter ends with a wrap up.

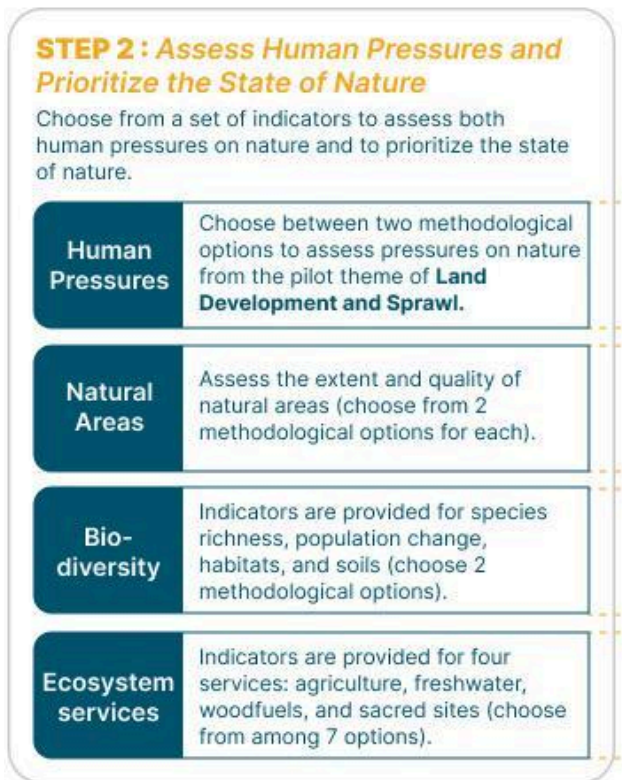


Figure 5. Overview of the three main steps in this guidance with the second step *Assess Human Pressure & Prioritize the State of Nature* highlighted.

Box 4: Explained in short: How do you select indicators for your city?

Throughout step 2 different sets of indicators have been provided. The indicators will be presented in a table like the example below (table xxx).

Indicators	Essentiality	Measuring level	Methodologies from existing frameworks	
			Core method	Comprehensive method
[Name of the indicator]	Essential or Optional	City-wide and/or Ecosystem level	[Abbreviation of the framework] Short explanation of how you would measure the indicator	[Abbreviation of the framework] Short explanation of how you would measure the indicator
			[Abbreviation of the framework] Short explanation of how you would measure the indicator	[Abbreviation of the framework] Short explanation of how you would measure the indicator

Table xxx. Explanatory table showing the elements of indicator method tables

Essential or optional indicators

The table informs you whether each indicator is essential or optional. **Essential** indicators (highlighted in yellow) are fundamental for your city to accurately assess its state of nature. Together this essential set provides a basic overview of the challenges and opportunities related to nature in your city and allows for comparison between cities.

In addition to this you are encouraged to broaden your scope with **optional** indicators, depending on your city's context, capacities, objectives and ambitions. In short, essential indicators help you establish a baseline and optional indicators offer flexibility for your context specific priorities. In this way this guidance aims for global consistency and local relevance.

Measuring level: city-wide or ecosystem level?

Next the table indicates on which level you will measure; on the city-wide or ecosystem level. **City-wide** means you assess the status for the indicator for your entire region or city area. **Ecosystem level** means you assess the status of an indicator for each different ecosystem type within your city area (e.g. four in figure 6). For certain indicators, for example those concerning biodiversity, it is relevant to measure their status and set targets specifically for each ecosystem type within your city area, while for other indicators measuring on a city-wide level is sufficient.

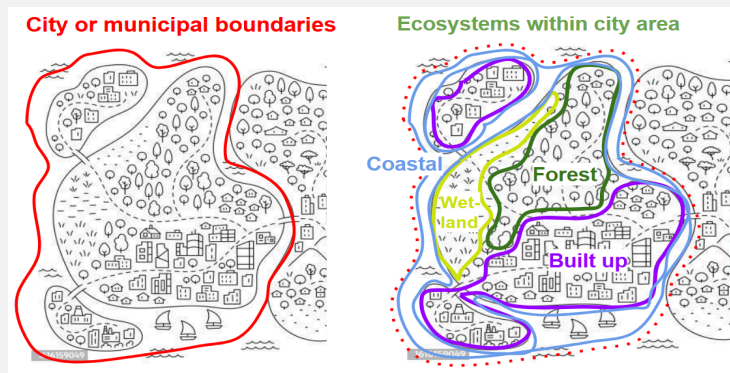


Figure 6. Example of a city with 4 different ecosystems within its city boundaries; built-up, forest, wetland and coastal ecosystem.

Choosing a method: Core or Comprehensive?

Finally, the table guides you in selecting a suitable measurement method for each indicator. For each indicator at least one or more *core* methods are provided. All methods come from existing frameworks and their abbreviated names serve as a reference (full names can be found in the [list of assessed frameworks](#)). Choose the most feasible method based on your city's data availability and measuring capacity, as assessed in [Step 1](#). If possible, opt for the *comprehensive* method to refine your assessments.

What if my city is already measuring indicators?

The table provides you an overview of different measurement methods from established frameworks.

If your city is already measuring one or more indicators, you can quickly check if the framework you are using is listed (see the full list of [assessed frameworks](#) for this guidance). The table provides an abbreviation of the framework name. If the framework your city is using is not listed, you can check whether your current measurement method aligns with one of the optional approaches. If your method is not aligned, while the indicator is marked as essential, select one of the measurement methods provided in the table.

Box 5: Incorporating equity and justice in your indicator selection and assessment is a prerequisite guiding principle.

As discussed in [chapter 2](#), equity and justice are prerequisites for this process. They form integral, non-negotiable guiding principles. Throughout this step 2 in the process of selecting your indicators, choosing your measuring methods, executing your measurements and disclosing your data it is important to use equity and justice as guiding principles.



- When measuring indicators incorporate traditional ecological knowledge (e.g., Indigenous knowledge about species migration patterns) and or citizen-science to assess indicators and identify overlooked environmental impacts. Make sure citizens are remunerated for their time and efforts in an equitable way.
- Assessing impacts on communities that rely on nature for subsistence or cultural practices, such as urban Indigenous groups harvesting medicinal plants from green spaces.
- Ensuring that baseline data collection encompasses all types of nature and biodiversity, from charismatic species (e.g., urban foxes) to less visible but ecologically critical species (e.g., soil microbes or pollinators).
- Disclosing nature data in accessible ways—using amongst others visuals, multilingual formats, open-access platforms and community meetings, to engage both technical experts and local residents who depend on these ecosystems.

4.1. Assessing HUMAN PRESSURES in your city

In this first part of Step 2 we will look into pressures. According to the DPSIR framework, ‘pressure’ refers to the direct stress or impact on the environment caused by human activities, stemming from the underlying ‘driving forces’, and resulting in changes to the ‘state’ of the environment. Essentially it represents the negative consequences of human actions like pollution, resource depletion, and land-use change that affect the environmental system [10]. As discussed in the introduction chapter ([section 1.3](#)), this is the first pilot version of the guidance. This theme is land use development and sprawl.

Why assess HUMAN PRESSURES?

Assessment on human pressures explains **why** nature in cities is changing and **where** action is most urgently needed. Understanding the type, intensity, and distribution of pressures—such as land conversion, pollution, over-extraction of resources, and infrastructure expansion—helps cities identify the main drivers of ecosystem degradation and biodiversity loss. This, in turn, allows them to design targeted measures that address root causes rather than symptoms, align land-use and infrastructure decisions with ecological limits, and avoid locking in harmful development patterns. Assessing human pressure is therefore not only about constraining growth; it is about guiding urban development so that it reduces risks, supports ecosystem function, and sustains the benefits that nature provides for health, safety, and quality of life in cities.

4.1.1 Pressure theme: Land use Development and Sprawl

Pressures on nature degrade biodiversity and weaken essential ecological services that cities rely on, such as flood mitigation, air purification, and temperature regulation. To maintain resilient urban ecosystems that support both human and non-human life, it is crucial to address these pressures and their impact on your city’s environment.

For the pressure theme Land Use Development and Sprawl, this guidance focuses on one key city-wide indicator:

- **Indicator 1: Land Conversion due to Land Development and Sprawl**

The measurement level is **city-wide**, applying to the city's entire jurisdiction.

This indicator measures the relationship between overall consumption of land due to urban expansion and population dynamics to assess the sprawling nature of land use within local government boundaries.

Table 8. Pressure Indicators along with description and methodologies for assessment.

Indicators	Essentiality	Measuring Level	Methodologies from existing frameworks	
			Core method	Comprehensive method
Indicator 1: Overall Land Conversion due to Land Development and Sprawl	Essential	City-wide	<p>UNI 2.1: Average Population Density= Total Area of Developed Land/Total Population where: Total Population is the number of people living within the local government boundaries.</p> <p>Total Area of Developed Land is the total size of the developed land within the local government boundaries.</p>	<p>UMF 51, SDG 11.3.1: Annual land consumption rate / Annual population growth rate where annual land consumption rate = $\{U(t+n) - U(t)\}/n$ U (t+n) = amount of urbanized land at the end of the period (year t+n) U(t) = amount of urbanized land at the end of the period (year n) n is the number of years in the period.</p>

Notes with the methods in Table 8:

1. UNI, UMF and SDG are abbreviations of established frameworks from which these methods have been derived. The full list of [frameworks assessed for this guidance and their abbreviations](#) can be found at the start of this guidance.
2. For more details on the methods and their definitions please refer to the framework it was derived from, as referenced with the abbreviation in the table.
3. Data needed: for this indicator it is likely you will need (a combination of) public or existing datasets and/or geospatial data

Box 6: Indicator background - Pressure - Theme Land use development and sprawl

This box provides background on the pressure indicator, in particular the essentiality and measuring level (second and third column in table 8).

Essentiality

Because land conversion due to development and sprawl is one of the major drivers of biodiversity loss and ecosystem degradation in urban areas, it is essential for your city to measure this indicator. This metric directly reflects to which extent natural habitats are being transformed into built environments, disrupting ecological processes, fragmenting ecosystems, and reducing the availability of critical ecosystem services such as carbon sequestration and flood regulation.

Measuring level

Your city is expected to measure Indicator 1: Overall Land Conversion due to Land Development and Sprawl, at a city-wide level. This means that this indicator will capture the total land area converted due to (a combination of) different direct pressures. While this total land conversion serves as an initial indicator of the pressures affecting your city, further investigation into the specific ecosystems may be necessary to determine which factors most significantly contribute to the conversion of natural areas within a given ecosystem. This city-wide assessment provides a starting point to identify key pressures affecting ecosystems within your region.

Several direct pressures contribute to this ‘most essential’ pressure indicator including:

- construction of new buildings in urban area,
- expansion of industrial or agricultural land,
- the presence and expansion of informal settlements, and finally
- the construction of further infrastructure and transport options.

Although these individual pressures are not measured separately, they all are captured under the total land conversion. Your city can analyze the different contributing factors to determine where to focus efforts when setting targets for reducing Land Conversion due to Land Development and sprawl.

Selecting a measuring method for your city

Within the theme Land Use Development and Sprawl there is only one indicator but it is deemed essential for your city in order to make a valuable assessment. Table 8 provides you an overview of different measurement methods from established frameworks.

- If your city is already measuring land conversion, check Table 8 to see if your current measurement method aligns with the recommended approaches.
- If your city is not yet measuring land conversion or if your methodology is not aligned, select a suitable methodology from the options provided (categorised as *core* or *comprehensive* in Table 8). Choose the most feasible method based on your city’s data capacity, assessed in [Step 1](#). If possible, opt for the *comprehensive* method. Further details on each method can be found in the respective framework the method was derived from as referenced in the table ([full list of frameworks](#)).

Box 7: City example: Working with Pressure indicators and selecting measurement methods

In the fictitious city of Verdantia, several pressures are affecting urban nature. Drawing on its Step 1 assessment, the city identifies **Land Development and Sprawl** as a key pressure theme. City officials note that recent development is driven mainly by new residential areas and the expansion of agricultural land at the urban fringe, with additional, smaller-scale conversions for transport infrastructure (e.g. road and rail improvements). Together, these activities are converting **seasonal floodplain wetlands, peri-urban croplands, and parts of remnant grasslands and woodlands** into built-up areas.

Verdantia recognises that the “**rate of land consumption to population growth**” indicator is essential for a holistic understanding of this pressure and therefore includes it in the final indicator set under the Land Development and Sprawl theme.

Because Verdantia has a reasonable overview of **annual land conversion** (from its land-use maps) and **population growth** (from municipal statistics), it decides to measure this pressure using the **UMF 51 / SDG 11.3.1** methodology. By first quantifying the overall land area consumed each year, the city establishes a baseline for tracking land development over time. By relating this land consumption to population growth, Verdantia gains a deeper understanding of its development patterns:

- If the **rate of land consumption to population growth increases**, Verdantia interprets this as **sprawl**—more land is being consumed relative to population growth. This suggests inefficient land use (e.g. lower-density development) that can exacerbate **loss and fragmentation of seasonal floodplain wetlands and other habitats**, with negative consequences for biodiversity and ecosystem services (e.g. flood regulation).
- If the **rate decreases or remains stable**, this indicates **more compact and efficient development patterns**, which can reduce pressure on wetlands and other ecosystems, support biodiversity, and improve access to urban amenities without excessive land take.

Verdantia will use this information as part of its **baseline for Step 3 in (chapter 5)**, where it will set targets related to land development—for example, maintaining or reducing the rate of land consumption relative to population growth, and explicitly limiting further conversion of seasonal floodplain wetlands and other high-value ecosystems.

4.2. Prioritising the STATE OF NATURE in your city

In this second part of Step 2 you will assess the state of nature in your city. The “state of nature” refers to the overall condition of ecosystems, biodiversity, and the ecological processes that sustain life within a given area. It encompasses the health and resilience of habitats, the diversity and abundance of species, and the quality of ecosystem services such as air and water purification, carbon storage, and pollination. In cities, where natural and built environments overlap, understanding the state of nature means evaluating the balance—or imbalance—between urban development and ecological systems.

Why prioritise STATE OF NATURE?

The state of nature is crucial because it provides a baseline for action. Knowing where we stand helps cities set realistic goals for conservation, restoration, and sustainable development. It also highlights the interdependence between urban nature and human well-being—healthy ecosystems support cleaner air, cooler temperatures, mental health, and resilience to climate impacts. Addressing the state of nature is not just about protecting plants and animals; it’s about sustaining the systems that make cities livable for everyone, human and non-human alike.

This assessment is split up in three different themes:

- Theme 1: **extent of natural area** in your city
- Theme 2: **biodiversity** in your city
- Theme 3: **ecosystem services** in your city

The following sections will guide you in selecting relevant indicators and methodologies for each theme. It is important to assess all three themes, as they are interconnected and cannot be considered in isolation. Selecting only one theme would not provide a comprehensive understanding of the state of nature in your city. In addition, equity serves as a fundamental prerequisite for both assessment and target setting across all indicators (see [chapter 2](#)).

4.2.1. Theme 1: Assessing the EXTENT OF NATURAL AREAS

In this theme, the most relevant indicators to assess the *extent of natural areas* in your city are discussed in two sub-groups.

Why assess EXTENT OF NATURAL AREAS?

Natural areas refer to spaces where ecosystems are predominantly shaped by natural processes rather than human activity. These can include forests, wetlands, grasslands, rivers, oceans, and other habitats that provide a home for biodiversity and deliver essential ecosystem services. The indicators are split in two subgroups, one focusing on the extent in terms of area coverage, and the other focusing on the quality of the ecosystems in those areas.

Sub-group 1: Extent of Natural Areas

This subgroup focuses on indicators that measure the coverage of different natural areas within a city. The measurement level is flexible and can be applied at either the city-wide scale or the ecosystem-specific level, depending on the city's context.

- **Indicator 1A: Extent of terrestrial areas:** Measures the proportion of (ecosystem specific) terrestrial areas within a city either at a city-wide level or for specific ecosystems.
- **Indicator 1B: Extent of aquatic areas:** Evaluates the proportion of aquatic ecosystems within the city's area, considering both city-wide and ecosystem-specific perspectives.
- **Indicator 1C: Vegetation and Green Cover:** Assesses the extent and changes in vegetation and tree cover within a city.

Table 9. State of Nature Indicators for Theme 1: Extent of Natural Areas, subgroup 1 Extent

Indicator	Essentiality	Measuring Level	Methodologies from existing frameworks	
			Core method	Comprehensive method
Indicator 1A: Extent of Terrestrial Areas	Essential	City-wide & Ecosystem	EUBI L03 (see pg. 19) Proportion of natural areas in the total city area: Total area of natural, restored and naturalised areas (in ha)/ the total area of city	NA
Indicator 1B: Extent of Aquatic Areas	Essential	City-wide & Ecosystem	EUBI C04: (see pg. 15) (EU Centric) Proportion of blue areas: Proportion is calculated on the basis of UA (Urban Atlas) 2012 class 50000 divided by total area including no-data areas. All UA level 2 (croplands) and 3 (forests) are extracted at FUA level and converted to line polygons. These separate line polygon layers are intersected and dissolved. Total length of transitions per grid cell is calculated from the length of all remaining polygons.	NA
Indicator 1C: Extent of Vegetation and Green Cover	Optional	City-wide & Ecosystem	CSCAF: Green cover	USF 2.1a Hectares of permanent green space per 100,000 city residents (IDB) (see page 87)
			UMF-48: Change in tree cover +	CBI 12:

			alterations in the extent of tree cover	(Area of parks, nature conservation areas and other green spaces with natural areas and protected or secured accessible natural areas)/1000 persons (see page 25)
			GCA 3.2: Percentage of tree canopy cover in municipality	UMF-47 (Pg 140-141), CPI Total green area within the city (forests, parks, gardens, etc.) per inhabitant. Squared meters (m ²) per inhabitant. Green area per capita = Total green area within a city / city population (Note: Cities located in deserted or semi arid areas have a natural disadvantage; However, it is a duty of the city to guarantee a minimum amount of green space to its population. The character of the green spaces should be referred to based on the context - ecoregion)
			CBI 11: Tree canopy cover	UNI 3.4 Tree canopy cover Comprehensive method using Landsat 8 remote sensing imagery in GIS.
			UNI 3.4 Tree canopy cover Core method using free iTree online tool.	

Notes with the methods in Table 9:

1. The abbreviations (e.g. EUBI, CwN, UNI) refer to established frameworks that contain these methods ([list of frameworks](#)).
2. For more details on the methods and their definitions please refer to the framework it was derived from.

Box 8: Indicator background - Theme 1. Extent of nature - Subgroup 1 Extent

This box provides background on the indicated essentiality and measuring level for subgroup 1 Extent (tables 9).

Essentiality

To assess the extent of natural areas in your city, this guidance divides natural areas in your city into terrestrial and aquatic areas (Indicators 1A and 1B). Measuring the extent of both in your city is *essential* to establish a baseline of the current coverage in your city. Tracking this over time helps identify key trends of natural area coverage and ecosystem loss or expansion.

Besides these essential indicators, you can measure *vegetation and green cover* in terrestrial ecosystems if this is relevant in your city context, as assessed in [Step 1](#). This additional indicator can provide detailed insights into composition of terrestrial natural areas, and becomes particularly useful when evaluating ecosystem services, such as mitigating urban heat-island effect.

Measuring level

It is recommended to measure extent indicators at the city-wide level, adding up all terrestrial and aquatic ecosystems. This broad assessment provides an initial overview of total natural area coverage in the city. However, you can choose to refine your assessment by opting to measure the extent of specific ecosystems within these broader categories. This guidance recommends to focus first on the ecosystems that are at a greater risk of degradation.

Sub-group 2: Quality of Natural Areas

This subgroup examines the overall condition of natural areas, considering both degradation and protection status. Cities can choose to measure these indicators at either the city-wide scale or for specific ecosystems. :

- **Indicator 2A: Degraded:** evaluates the extent of degraded natural ecosystems within urban landscapes, identifying areas that require restoration efforts.
- **Indicator 2B: Protected:** Measures the extent of natural areas under official protection within a city's boundaries.

Table 10. State of Nature Indicators for Theme 1: Extent of Natural Areas, subgroup 2 Quality

Indicator	Essentiality	Measuring Level	Methodologies from existing frameworks	
			Core method	Comprehensive method
Indicator 2A: Degraded	Essential	City-wide & Ecosystem	CwN: Area of degraded systems in the city limits. What degraded means is not defined explicitly.	SBT: Total area (ha) and percentage (%) of natural ecosystems in the landscape that are currently degraded

Indicator 2B: Protected	Optional	City-wide & Ecosystem	<p>CBI 8: The definition of protected natural areas should be broadened to include legally protected, formally secured areas, and other administratively protected areas, as different cities have different terminologies and means for protecting their natural areas.</p> <p>(Area of protected or secured natural areas) ÷ (Total area of the city) × 100% (see pg. 21)</p>	<p>SBT Coverage (in % out of total area in the landscape) of protected areas and other effective conservation measures (OECMs)</p>
			<p>UMF-49: Land under protected natural areas / total of the area of a city. (see pg. 146-147)</p> <p>Express each as well as the total protected area as a percentage of area occupied by the city. Protected natural areas are nature reserves that are legally protected under the laws of a country. Measure the areas occupied by each of seven categories of protected areas by IUCN.</p> <p>1) Calculation of surface from the Nationally designated protected areas data eliminating double counting of areas where National sites are overlapping; 2) topological controls and adjustments, other data quality controls; 3) Member States' territories are taken from "EuroBoundaryMap 2020" dataset. References about these sources are available in the specific dataset's section of this catalogue.</p>	<p>UNI 3.1: Protected land factor= LF + 0.75 LN + 0.5 LP + 0.25 LI (see page 18)</p> <p>LF - land that is undeveloped and protected primarily for nature conservation or indigenous and local traditional use. LN - land that is natural and protected or conserved but allows for sustainable use and/or access. LP - land under conservation development approaches. LI - land with incentives encouraging conservation-friendly development.</p>
			<p>CwN: Increase protected areas - This indicator measures the increase of protected areas of particular importance for biodiversity and their contributions to people by providing a baseline and/or target</p>	<p>DOPA: Terrestrial protected area coverage: Percentage or surface (km²) of a terrestrial (land and inland waters) area covered by</p>

		and by measuring again in 12, 24 and 36 months. The level of importance is defined by the city and not standardized.	protected areas.
		<p>EUBS 1.1.3 This indicator measures the percentage of land, by Member State and at EU 27 level, covered by nationally designated protected areas. Values are calculated and provided each year by the European Environment Agency based on data reported by Member States</p> <p>% of area protected under nationally designated protected areas on land</p>	<p>GCA 3.1: Percentage of protected, restored and naturalised areas on public land Calculate the share of protected areas as a percentage of total land in the city, then calculate the public restored and naturalised areas as a percent of the total public land in the city. Restored areas imply the restoration of degraded or destroyed ecosystems to good. Naturalisation is a management strategy for green urban areas which aims at reverting urban green to a more natural state to improve provision of ecosystem services towards healthier, better adapted and more resilient cities.</p>
		<p>EUBI C02: Proportion of Functional Urban Area (FUA) area belonging to Natura 2000 network per grid cell- Proportion of protected area is calculated from the amount of Natura 2000 area covering the respective grid cell. A FUA encompasses the urban city perimeter and its commuting zone (Eurostat, 2016a) and includes all aspects of the urban ecosystem.</p>	

Notes with the methods in Table 10:

1. The abbreviations refer to the names of the frameworks from which the method is derived ([frameworks assessed](#)).
2. For more details on the methods and their definitions please refer to the referenced framework.

Box 9: Indicator background - Theme 1. Extent of nature - Subgroup 2 Quality

This box provides background on the indicated 'essential' and measuring level for subgroup 2 Quality (tables 10).

Essentiality

In addition to measuring the extent of nature in your city in terms of surface area, it is essential to assess the quality of nature in your city to gain a comprehensive understanding of the status of nature. Hence it is essential to assess the amount of *Degraded land* within your city (Indicator 2A). Assessing this enables your city to identify high risk areas, prioritize restoration efforts and assess the effectiveness of your land-use policies. In addition the share of *Protected Areas* (Indicator 2B) offers a complementary perspective of current efforts and restrictions for certain areas. However, as protection does not tell you anything about the quality of nature directly, this indicator only works in combination with assessing degradation as protection alone might not suffice and restoration efforts might be needed. Therefore indicator 2B is optional. Assess your city context and policies to determine whether it is relevant to include this indicator in your selection.

Measuring level

For area degradation and protection indicators, most measurement methods focus on city-wide scale. For example, by summing the total area of degraded terrestrial your city can quantify the overall 'size' of degraded areas. This overview is essential for assessing the general state of nature and identifying areas in a good state condition.

However, like extent indicators, quality indicators can also be applied on the ecosystem level. Your city can adapt these indicators to analyze degradation within specific ecosystems, ensuring a more **targeted approach** to conservation. The guidance again recommends prioritizing ecosystems at high risk of degradation to ensure that restoration efforts address the most urgent challenges.

Selecting Indicators for your City - Theme 1. Extent of Natural Areas

This theme includes three essential indicators and one optional indicator. Table 9 and 10 provide an overview of different measuring methods from existing frameworks for these indicators.

- If your city is already measuring one or more of the essential indicators, check the table to see if your current measuring methods align with the suggested approaches.
- If your city is not yet measuring the three essential indicators yet, select a measurement method (*core* or *comprehensive*) from Tables 9 and 10). Choose a method that is both relevant and feasible based on your city's measurement capacity, assessed in Step 1. Where possible, opt for the *comprehensive* method. More details on each method can be found in the respective frameworks the methods are derived from ([list of frameworks](#)).
- In addition to essential indicators, choose other optional indicators that align with your city's ambitions, resources, capacity, existing policies and local context.

Box 10: City example: Working with Extent of Nature indicators

In Verdantia, city officials have noted that a range of pressures affect nature, particularly due to land development and urban sprawl. As the city keeps developing, officials have identified different indicators to monitor the impacts on terrestrial and aquatic ecosystems to inform nature-positive urban planning decisions.

**Subgroup 1: Extent indicators**

Verdantia recognizes that indicator 1A: Extent of Terrestrial Areas and 1B: Extent of Aquatic Areas are marked essential and are therefore included in the city's final indicator selection. Although Indicator 1C: Extent of Vegetation and Green Cover is optional, it has been noted as a valuable metric for tracking the city's vegetative cover and its role in supporting biodiversity and ecosystem services. Including this indicator will provide additional information on urban green spaces and their contribution to ecological health and urban resilience.

Subgroup 2: Quality of nature areas

Recognizing the importance of addressing ecosystem degradation, Verdantia has made Indicator 2A: Degraded Areas a priority in its assessment. This essential indicator provides critical data on the extent and severity of degraded areas, enabling the city to identify hotspots for restoration and assess the effectiveness of its land-use policies. In particular, *Seasonal Floodplain Marshes* within its city boundaries are in dire condition. These marshes are vital for biodiversity, water filtration, and flood management, making their restoration a top priority. The city has decided to concentrate its efforts here first, undertaking targeted assessments to halt further decline and begin rehabilitation.

Meanwhile, Indicator 2B: Protected Areas offers a complementary perspective by focusing on the city's protected areas. Although optional, this indicator is highly valuable for tracking the size, location, and conditions of these regions. It provides a benchmark for evaluating conservation successes and ensuring that key habitats remain intact amidst urban growth.

Measuring methods for subgroups 1 & 2

In choosing how to measure these indicators, Verdantia carefully evaluated its data capacities to select methods that align with its available resources. The city relies mainly on *geospatial data*, such as satellite imagery and GIS mapping, to monitor land use and ecosystem changes. Additionally, Verdantia partners with *local research institutes*, leveraging their expertise and field data to complement geospatial insights.

Together, the five indicators allow Verdantia to set a baseline and monitor. They help city officials understand the dynamics between areas under stress and those recovering and thriving. By monitoring trends over time, Verdantia can identify opportunities for intervention, allocate resources strategically, and measure progress toward restoration and conservation goals. This data will also support setting measurable nature targets in [Step 3 \(chapter 5\)](#) of this guidance, ensuring Verdantia's urban growth aligns with global sustainability goals.

4.2.2. Theme 2: Assessing BIODIVERSITY in Your City

In this theme 2, the most relevant indicators to assess biodiversity have been divided into two sub-groups: species and habitat quality. Assessing each of these are discussed in the following subsections.

Why assess BIODIVERSITY?

Biodiversity here refers to the variety of life within a specific area, encompassing the diversity of species, their genetic variation, and the ecosystems they form. In the context of cities, biodiversity includes all living organisms found in urban environments—ranging from native plants, pollinators, and birds to soil microbes and aquatic life in urban waterways. It also considers the interactions between these species and their habitats, as well as the ecological functions they perform. A healthy status of urban biodiversity is fundamental to creating nature-positive cities, as this reflects the health and resilience of local ecosystems. Native species are critical for maintaining ecological balance and delivering essential services such as pollination, soil enrichment, and water purification.

Within the biodiversity theme, this guidance uses indicators to assess the state of biodiversity in your city by focusing on two sub themes: species and habitat quality.

Sub-group 1: Species

This sub-group includes several key indicators to assess species diversity and abundance at the ecosystem-specific scale:

- **Indicator 1A: Diversity:** Measures the number of different species in a particular area and their relative abundance.
- **Indicator 1B: Abundance & Conservation status:** Measures the total number of individual species or group of species in a given area. This indicator contributes to the overall understanding of species diversity (Indicator 1A).
- **Indicator 1C: Richness:** Measures the total number of species present in a habitat or specific area, providing another dimension of species biodiversity (Indicator 1A).

Table 11. Detailed Indicator list for Theme 2: Biodiversity, Subgroup 1: Species

Indicators	Essentiality	Measuring Level	Methodologies from existing frameworks	
			Core method	Comprehensive method
Indicator 1A: Diversity	Essential	Ecosystem	GCA 3.3 Percentage changes in bird and/or butterfly species diversity over time.	Not applicable
Indicator 1B: Abundance & Conservation status	Essential	Ecosystem	CwN Richness and conservation status of native species	CBI 4,5,6 Change in number of native vascular plant, bird, & arthropod species
			EUBS 4.1.1: Percent birds and pollinators in a positive conservation status or trend ++++ This indicator measures the proportion of bird and pollinator species within a specified area that are experiencing stable or improving population trends and conservation statuses. It reflects the health and viability of bird and pollinator populations.	ISO 37120 8.9 Percentage change in number of native species
				IEFS HB Number of keystone species in bioregion
Indicator 1C: Richness	Essential	Ecosystem	CBI 3: Number of native bird species in built-up vs. natural areas	UNI 4.1 and 4.2 Animal and plant species richness in at least 5 locations across the city
			EUBI C06 Bird species richness by habitat type	EUBI C07 Species richness by habitat type

Notes with the methods in Table 11:

1. The abbreviations refer to the names of the frameworks from which the method is derived ([frameworks assessed](#)).
2. For more details on the methods and their definitions please refer to the referenced framework.
3. Data needed: for these indicators it is likely that existing research 🏛️ and/or fieldwork 🦋 are needed to measure the indicators.

Box 11: Indicator background - Nature theme 2. Biodiversity - Sub-group 1. Species

This box explains the essentiality and measuring level indicated in table 11.

Essentiality

To ensure a comprehensive assessment of biodiversity, it is *essential* for cities to measure all species indicators (Table 11). These indicators will help your city identify species at risk due to urbanization and other pressures, providing a clearer picture of biodiversity within your city region.

Measuring level

Measuring species richness, diversity, and abundance at the *ecosystem level* is more effective than measuring them at the city-wide level. This means you will measure the species indicators for each of the different ecosystems within your city region, as identified in [Step 1, section 3.1](#). This approach captures the distinct characteristics and ecological dynamics of different habitats – such as forests, wetlands, grasslands – each with its own unique species composition and ecological processes.

Aggregating data at the city-wide level may obscure critical habitat-specific details. By focusing on individual ecosystems, cities can better detect spatial variations, identify local pressures and prioritize conservation efforts more effectively.

Sub-group 2: Habitat Quality




This sub-group includes several key indicators to assess different aspects of habitat quality:

- **Indicator 2A: Connectivity (City-wide scale):** Measures how easily organisms and natural processes can move across different terrestrial and aquatic habitats without obstruction.
- **Indicator 2B: Habitat Diversity (City-wide Scale):** Measures the variety of distinct habitats within an ecosystem or biome.
- **Indicator 2C: Soil Health (Ecosystem scale):** Measures the overall health of soil in a given area, providing insight into its ability to support biodiversity and ecological functions.

Table 12. Detailed Indicator list for Theme 2: Biodiversity, Subgroup 2: Habitat Quality

Indicators	Essentiality	Measuring Level	Methodologies from existing frameworks	
			Core method	Comprehensive method
Indicator 2A: Connectivity	Essential	City-wide	EUBI C05 Length of Ecotones, length of transitions between agricultural and forest classes	CBI 2 Connectivity between natural areas UNI 3.5 Connectivity between natural areas
Indicator 2B: Habitat Diversity	Essential	City-wide	CBI 3 Native (bird) species in built-up areas vs natural areas (also proxy for species richness)	EUBI C08 Density of bird habitat diversity. Habitat richness: Number of bird habitats per hexagonal grid cell (density of habitat diversity)
Indicator 2C: Soil Health	Optional	Ecosystem	IEFS 02 Soil health	UNI 4.4 Decomposition rates in the soil (also proxy for microbiota and fungal function)

Notes with the methods in Table 12:

1. The abbreviations refer to the names of the frameworks from which the method is derived ([frameworks assessed](#)).
2. For more details on the methods and their definitions please refer to the referenced framework.
3. Data needed: for these indicators it is likely that existing research , fieldwork  and/or geospatial data  are needed to measure the indicators.

Box 12: Indicator background - Nature theme 2. Biodiversity - Sub-group 2. Habitat quality

This box explains the reasoning behind essentiality and measuring level for the Habitat quality indicators indicated in table 12.

This guidance considers **habitat quality** along two key indicators that are essential and measured at the city-wide level:

- **Habitat connectivity** is essential for biodiversity allowing species to access resources, maintain genetic diversity, and adapt to environmental changes. Strong connectivity supports ecosystem resilience and long-term species survival. Assessing connectivity is crucial for cities to make informed urban planning decisions that minimize habitat fragmentation.
- **Habitat diversity** ensures a variety of natural spaces that support different species and enhance ecosystem complexity, further strengthening biodiversity.

Although measuring soil health is not essential, it remains **optional and therefore a strong recommendation**. Healthy soil plays a fundamental role in supporting ecosystem services and biodiversity, but its feasibility and relevance depend on your city's specific context and available resources.

Selecting Indicators for your city - Theme 2. Biodiversity

Within the theme of Biodiversity, there are five indicators marked as *essential* (marked yellow in the tables) and several optional choices. Tables 11 and 12 provide an overview of different measurement methods from existing frameworks for these indicators.

- If your city is already measuring one or more of the essential indicators, check the tables to see if your current measuring method is listed or aligns with the suggested approaches.
- If your city has not yet started measuring the essential indicators, select an appropriate method (*core* or *comprehensive*) from Tables 11 and 12. Choose a method that is feasible based on our city's measurement capacity (assessed in Step 1). When possible, opt for a more comprehensive method. More details on the method can be found in the referenced frameworks (see list of [framework abbreviations and links](#)).
- In addition to essential indicators, choose other indicators that align with your city's ambitions, capacity and context.

Box 13: City example: Working with Biodiversity indicators (theme 2)

To assess the status of nature in terms of biodiversity city officials have identified key indicators to monitor species diversity, abundance, and richness. These metrics will guide the city's actions to enhance biodiversity and ecosystem health.

**Selected Indicators for Biodiversity - Subgroup 1. Species**

Given the essential nature of these indicators, Verdantia is committed to integrating them into its biodiversity monitoring framework. Indicator 1A: Diversity focuses on measuring species diversity, providing a comprehensive view of the variety of life forms across the selected ecosystem. Indicator 1B: Abundance & Conservation Status evaluates the population abundance of species and their conservation status, highlighting trends in species survival and identifying those at risk. Indicator 1C: Richness, which tracks species richness, adds another layer of understanding by capturing the number of distinct species in a given area.

To implement these indicators effectively, Verdantia leverages its geospatial data capabilities and partners with local research institutes. Geospatial tools like remote sensing and GIS mapping are used to identify biodiversity hotspots and track changes over time. Data from local researchers, including species inventories and field observations, enrich these datasets and provide context for interpreting patterns in diversity, abundance, and richness.

As these indicators are to be measured on the ecosystem level, Verdantia assesses them within its *Seasonal Floodplain Marshes* first, an ecosystem type that is at high risk. In addition it also assesses the species indicators on a city-wide level.

Selected indicators for Biodiversity - Subgroup 2.

Verdantia recognizes the critical importance of Indicator 2A in assessing the connectivity of ecosystems, ensuring that habitats remain linked to support species movement and genetic exchange. Indicator 2B, which tracks habitat diversity, provides insights into the variety of ecosystem types present and their capacity to sustain diverse species. To monitor these indicators, Verdantia uses mostly geospatial data. Connectivity and habitat diversity are primarily assessed through GIS mapping, enabling the city to analyze ecological corridors and landscape mosaics.

As Indicator 2C: Soil Health is optional, Verdantia has chosen to exclude it from its monitoring framework at this stage. The city determined that its current priorities and data capacities are better suited to addressing the essential indicators of connectivity and habitat diversity.

By focusing on these five indicators, Verdantia is building a robust framework for understanding biodiversity challenges. These assessments will inform the targets set for biodiversity indicators in [Step 3 \(chapter 5\)](#) of this guidance, ensuring Verdantia's urban growth aligns with the preservation of biodiversity and interconnected and resilient habitats.

4.2.3. Theme 3: Assessing ECOSYSTEM SERVICES in Your City

In this theme 3, the most relevant indicators to assess ecosystem services have been divided into three sub-groups: provisioning services, regulating & maintenance services, and cultural services. Indicators for each of these are discussed in the following subsections.

To make the ecosystem services theme more impactful and aligned to your city's priorities, integrate existing policy initiatives into the selection process, as first discussed in [Step 1, section 3.3](#). For example,

- If your city prioritizes food security, focus on provisioning services such as urban agriculture or the sustainable harvesting of natural resources.
- If climate resilience is a key priority, emphasize regulating and maintenance services such as stormwater retention, urban cooling, or air purification.
- If cultural or recreational value is central to your urban planning, prioritize cultural services such as preserving sites of cultural significance to enhance community well-being.

Why assess ECOSYSTEM SERVICES?

Ecosystem services are the vital contributions from nature that support the well-being of urban populations. These services, typically classified as provisioning, regulating and maintenance, and cultural [11], include air and water purification, climate regulation, pollination, flood control, and recreational spaces that enhance mental and physical health. In cities, especially those with limited natural areas, it is vital to preserve and enhance these services to strengthen resilience against climate change, improve the quality of life, and foster sustainable urban development.

Sub-group 1: Provisioning services

This sub-group 1 focuses on key indicators that assess the availability of essential natural resources:

- **Indicator 1A: Food Security (City-wide scale):** Measures the availability and accessibility of food through urban agriculture.
- **Indicator 1B: Woodfuel (Ecosystem specific scale):** Measures the extent to which woodfuel supplies energy needs, including wood and biomass as fuel sources.
- **Indicator 1C: Water security (City-wide scale) -** Measure water withdrawal levels to determine the availability of freshwater for domestic, agricultural, industrial, and recreational use.
- **Indicator 1D: Medicinal applications (Ecosystem-specific scale):** Measures the contribution of natural resources to the development of medicines and traditional remedies.

Table 13. Detailed Indicator list for Theme 3. Ecosystem Services – Subgroup 1. Provisioning

Indicators	Essentiality	Measuring Level	Methodologies from existing frameworks	
			Core method	Comprehensive method
Indicator 1A: Food Security	Optional	City-wide	SBT (Step 1, Table 6): Area of land using good land management practices	ISO 37120 20.1: Total urban agricultural area per 100,000 population
			This indicator measures the area (km ² or ha) of land use, including known land management practices (e.g., crop rotation, tillage practices, or fire regimes)	EUBS 8.1.1: Percent utilised agricultural area occupied by organic farming. This indicator assesses the proportion of agricultural land within a region that is cultivated using organic farming practices. It measures both existing organically-farmed areas and areas in the process of conversion.
				CBI 14 Qualitative assessment based on the level of institutionalisation of urban agriculture policies, plans, guidelines and implementation by the city (0 points for no plans/policies/guidelines to 4 points for policy, plan and guidelines on urban agriculture that include predominantly biodiversity conservation practices are being implemented)
Indicator 1B: Woodfuel	Optional	Ecosystem	NA	FAO's WISDOM method Woodfuel Integrated Supply/Demand Overview Mapping methodology to analyse woodfuel balances around cities.
Indicator 1C: Water security	Optional	City-wide	UNI 1.5 Measure freshwater consumption against locally sustainable levels.	<i>InVEST model</i> (highly comprehensive, optional extension) Model using the InVEST urban water retention model to assess surface water quality and water supply.
Indicator 1D: Medicinal applications	Optional	Ecosystem	NA	NA

Notes with the methods in Table 13:

1. The abbreviations refer to the names of the frameworks from which the method is derived ([frameworks assessed](#)).
2. For more details on the methods and their definitions please refer to the referenced framework.

Sub-group 2: Regulating and Maintenance Services

This sub-group 2 focuses on various indicators that assess how ecosystems regulate environmental conditions and provide essential protective functions:

- **Indicator 2A: General protective services (Ecosystem scale)** - Measures the presence of protective services offered by all ecosystem types across the city.
- **Indicator 2B: Precipitation, flooding and erosion protection (Ecosystem scale)** -Measures mitigation of impacts from extreme weather events, such as heavy precipitation, flooding, and soil erosion, through natural features.
- **Indicator 2C: Coastal flood protection (Ecosystem scale)** - Measures the role of coastal ecosystems, including mangroves, salt marshes, and dunes in acting as natural against coastal flooding.
- **Indicator 2D: Urban heat island reduction (Ecosystem scale)** - Measures the impact of urban green spaces, trees, and vegetation in cooling the urban environment and reducing urban heat island effect.
- **Indicator 2E: Air quality regulation (Ecosystem scale)** -Assesses how vegetation and natural areas improve air quality by filtering pollutants, capturing particulate matter, and reducing harmful emissions, contributing to healthier urban environments.
- **Indicator 2F: Pollination (Ecosystem scale)** - Evaluates the role of pollinators such as bees, butterflies, and other species, supporting plant reproduction, including crops and wild vegetation, essential for food security and ecosystem health.
- **Indicator 2G: Carbon sequestration (Ecosystem scale)** -Measures how forests, vegetation, and soils capture and store carbon dioxide from the atmosphere, contributing to climate change mitigation and reducing greenhouse gas concentrations.
- **Indicator 2H: One health: Disease regulation (Ecosystem scale)** - Assesses how biodiversity and healthy ecosystems help reduce the spread of pathogens, mitigate zoonotic disease risks, and promote human well-being.

Table 14. Detailed Indicator list for Theme 3. Ecosystem Services – Subgroup 2. Regulating and maintenance

Indicators	Essentiality	Measuring Level	Methodologies from existing frameworks	
			Core method	Comprehensive method
Indicator 2A: General protective services	Optional	Ecosystem	SBT 1.11 (Step 3, Table 15): Services provided by ecosystems or an assessment of critical natural assets + This indicator measures the services provided by ecosystems or an assessment of critical natural assets.	ISO 37120 8.2: Percentage of natural areas within the city that have undergone ecological evaluation for their protective services
Indicator 2B: Precipitation, flooding and erosion protection	Optional	Ecosystem	<p>CBI 10A: Proportion of all permeable areas (including areas identified in CBI indicator 1 plus other parks, roadside, etc. to total terrestrial area of city (excluding marine areas under the city’s jurisdiction).</p> <p>$(\text{Total permeable area}) \div (\text{Total terrestrial area of the city}) \times 100\%$</p>	<p>CBI 10B: Proportion of all effective impervious areas (i.e., impervious areas that are not draining to previous areas or stormwater vegetated systems such as biofilters) to total terrestrial area of the city (excluding marine areas under the city’s jurisdiction).</p> <p>$(\text{Total effective impervious area}) \div (\text{Total terrestrial area of the city}) \times 100\%$</p> <p><i>InVEST model (highly comprehensive, optional extension)</i> <i>Understanding landscape ‘method’ (highly comprehensive) Specific data inputs needed.</i> <i>Model using the InVEST urban flood risk mitigation model.</i></p>
Indicator 2C: Coastal flood protection	Optional	Ecosystem	<p>CBI1 Proportion of Natural areas in the City. Adjust this method to specifically measure coastal areas that provide flood protection e.g. mangroves, coral reef and/or salt marsh area.</p> <p>CWN 04.b Share of coastal ecosystems degraded of the total area it covers in the city boundary</p>	<p><i>InVEST model (highly comprehensive, optional extension)</i> <i>Model coastal exposure to storm-induced erosion and flooding using the InVEST coastal vulnerability model. Model output is an index for vulnerability of the shoreline. Aim would be to lower vulnerability and increase presence and quality of natural coastal habitats.</i></p> <p>GBF 7.1 Index of coastal eutrophication potential (advanced)</p> <p>SDG 14.1.1 (a) Index of coastal eutrophication; and (b) plastic debris density (advanced)</p>

Indicator 2D: Urban heat island reduction	Optional	Ecosystem	CBI 11 Climate regulation: Benefits of trees and greenery (Tree canopy cover) ÷ (Total terrestrial area of the city) × 100%	(METHOD) Model urban heat island reduction using the InVEST urban cooling model:
			*Cities in the desert or arid zones or other ecological zones, where it is not feasible to maintain extensive tree canopy cover, should explore relevant indicators that offer a similar range of ecosystem services (from CBI Handbook)	SBT 1.12 Total climate regulation services provided by ecosystems by ecosystem type (System of Environmental Economic Accounts).
Indicator 2E: Air quality regulation	Optional	Ecosystem	Tree cover can be used as a proxy CBI 11 Climate regulation: Benefits of trees and greenery	NA
			It is important to combine this indicator with green cover (5.2.2) as well as pressures (e.g. traffic) to understand the relation between air quality and nature's regulation services. UNI 5.3 Air quality can be measured using, for example: air quality index, childhood asthma rates, NO2 or PM2.5 concentrations.	
Indicator 2F: Pollination	Optional	Ecosystem	UNI 4.3 Pollination services can be estimated by counting the visitation rate of flowers in at least five representative locations in the city over a given period of time (Fijen and Kleijin, 2017), or the rate of pollinated fruit/seed set in each location.	NA
Indicator 2G: Carbon sequestration	Optional	Ecosystem	Tree cover can be used as a proxy CBI 11 Climate regulation: Benefits of trees and greenery	SBT1.13 Carbon stocks and annual net GHG emissions, by land-use category, split by natural and non-natural land cover. (advanced)
Indicator 2H: One Health: Disease regulation	Optional	Ecosystem	UNI 5.3 Rates of zoonotic communicable disease outbreaks and/or presence of resistant bacterial strains	NA

Notes with the methods in Table 14:

1. The abbreviations refer to the names of the frameworks from which the method is derived ([frameworks assessed](#)).
2. For more details on the methods and their definitions please refer to the referenced framework.

Sub-group 3: Cultural Services:

This sub-group focuses on indicators that assess the cultural, recreational, and educational benefits provided by natural spaces. The measurement level for most indicators can be **either city-wide or ecosystem-specific**, depending on the city's preference :

- **Indicator 3A: Population living near a park or green area (City-wide or ecosystem scale)** - , Measures the accessibility of natural spaces for residents , promoting physical and mental well-being, fostering social cohesion, and enhancing overall quality of life in urban environments.
- **Indicator 3B: Recreation, Heritage, Cultural Value (City-wide or ecosystem scale)** - Assesses opportunities for recreation, cultural, and heritage activities in natural areas, supporting community well-being, leisure, and cultural identity while preserving traditional practices and landscapes.
- **Indicator 3C: Enumerating sacred natural sites (City-wide of ecosystem scale)** - Evaluates the recognition and preservation of sacred natural sites, which hold cultural, spiritual, and historical significance for local communities, fostering a sense of identity, respect, and connection to nature.
- **Indicator 3D: Education and science opportunities for formal and informal education and training (City-wide of ecosystem scale)** - Measures access to formal and informal education and scientific research related to nature, sustainability, and environmental stewardship. This indicator highlights opportunities for **learning, knowledge-building, and innovation** in environmental science and conservation.

Table 15. Detailed Indicator list for Theme 3. Ecosystem Services

Indicators	Essentiality	Measuring Level	Methodologies from existing frameworks	
			Core method	Comprehensive method
Indicator 3A: Population living near a park or green area	Essential	City-wide and/or ecosystem	<p>CBI 13 (13A) Proximity is measured in terms of the proportion of the population living within walking distance (400m) from a park or green space.</p> <p>Straight line distances are used to determine whether households fall within 400m from a park or green space. $\{(Population\ of\ city\ living\ within\ 400m\ from\ a\ park/green\ space) \div (Total\ population\ of\ city)\} \times 100\%$</p>	<p>CBI 13 (13B) Accessibility is measured in terms of the proportion of the population living within walking distance (400m) from a park or green space.</p> <p>This distance takes into account obstacles and routes within the street network system, differing from the calculation of proximity. $\{(Population\ of\ city\ living\ within\ walking\ distance\ (400m)\ from\ a\ park/green\ space) \div (Total\ population\ of\ city)\} \times 100\%$</p>
			<p>CwN: Nature can be accessed by what share (%) of the total people living in the city</p>	<p>EUBI Percentage of population with green urban areas in their neighbourhood (i.e. that can be reached within 10 min. walking distance)</p> <p>UNI 5.2 Calculate the percentage of residents in the lowest income quintile (lowest 20%) living within a walkable distance (300 m) of a public, open access natural area</p> <p>USE Share of population within a 15-minute walk of open green space (see page 87)</p> <p><i>InVEST model (highly comprehensive method, optional extension)</i> For greater ability to assess equitability of distribution of urban natural areas in relation to population demography (e.g. class, age, ethnicity etc.), use the <i>InVEST</i> urban nature access model.</p>
Indicator 3B: Recreation Heritage, cultural	Optional	City-wide and/or ecosystem	<p>UNI 5.1 Total annual number of visitors to vegetated and/or natural open areas. Counts and/or estimates are acceptable</p>	
Indicator 3C: Enumerati	Optional	City-wide and/or ecosystem	<p>UNI 5.5 Calculate the total number of Sacred Natural Sites</p>	

ng sacred natural sites				
Indicator 3D: Education and science opportunities for formal and informal education and training	Optional	City-wide	<p>CBD Presence of features with special educational and scientific value/interest.</p> <p>Number of classes visiting. Number of scientific studies</p>	<p>UNI 6.3 Number of citizens participating in educational programmes covering the themes of the UNI</p>

Notes with the methods in Table 15:

1. The abbreviations refer to the names of the frameworks from which the method is derived ([frameworks assessed](#)).
2. For more details on the methods and their definitions please refer to the referenced framework.

Box 14: Indicator background - Nature theme 3. Ecosystem services

This box provides background information on essentiality and measuring level for the cultural services indicators as indicated in tables 13,14 and 15.

Essential Indicator: Population Living Near a Park or Green Area:

To measure ecosystem services, it is essential for your city to assess Indicator 3A: Population Living Near a Park or Green Area (Table 15). This indicator captures the accessibility of natural areas and determines whether residents can benefit from sports, recreation, relaxation, and cultural enrichment—all of which contribute to mental and physical well-being.

Equity is a key consideration for making this indicator essential to measure. Inspired by the principles of Earth-system justice, equity encompasses not only access to basic resources and services but also procedural and substantive justice (see chapter 2). Building on these principles, this indicator evaluates whether parks and green areas are distributed fairly across urban populations, considering factors surrounding the proximity of green spaces. While this approach may not capture every dimension of equity, it ensures a focus on those who are most at risk of being left behind (more details on equity in [chapter 2](#)).

Optional Indicators: Tailoring to your City's Needs

All other ecosystem services indicators are optional, as their relevance depends on your city's context, policies, and goals. However, we recommend selecting at least one indicator from each category—provisioning, regulating and maintenance, and cultural—to ensure a comprehensive assessment of ecosystem services.

Selecting Ecosystem services Indicators for your City

Tables 13, 14 and 15 provide an overview of different measurement methods from existing frameworks for the indicators.

- Within the theme of Ecosystem Services, your city is strongly recommended to **select at least one indicator from each of the sub-groups**. For the Cultural services sub-group one indicator is already marked as essential, while for the other two subgroups, your city has the flexibility to choose which indicators to measure. While selecting, a minimum of three indicators is recommended, your city is encouraged to measure additional (optional) indicators if they align with your local priorities and ambitions.
- If your city is already measuring one or more of ecosystem services indicators, check the table to see if your current measurement methodology aligns with the suggested approaches.
- If your city is not yet measuring at least three indicators, choose relevant indicators and select an appropriate measuring method as indicated in tables 13, 14, 15. Choose a method that is feasible based on your city's measurement capacity (assessed in [Step 1](#)). When possible, opt for a more comprehensive method for greater accuracy. More details on each method can be found in the referenced framework ([list of frameworks](#)).

Box 15: City example: Working with the Ecosystem Services Indicators

In Verdantia, officials recognize that urban development must be balanced with the protection and enhancement of ecosystem services. These services are essential to maintaining the city's resilience, supporting public health, and ensuring the long-term sustainability of urban ecosystems. To effectively monitor and manage ecosystem services, Verdantia has chosen a select set of indicators that align with both global sustainability goals and the city's specific needs.

**Selected Indicators for Ecosystem Services Monitoring:**

Verdantia has prioritized Indicator 3A, which measures the proportion of the population living near parks or green areas, as this indicator is marked 'essential' under the SBTN guidelines. Access to green spaces is crucial for public health and well-being, and this indicator will help the city assess how well it is providing these spaces to its growing population.

Additionally, Verdantia has selected Indicator 2F: Air Quality Regulation, as clean air is an essential ecosystem service that directly impacts the health of residents. By tracking how well ecosystems contribute to maintaining air quality, Verdantia can take informed steps to protect green spaces that help filter air pollutants and improve the urban environment.

Indicator 2G: Pollination was also chosen because of its direct relevance to food security and biodiversity. Verdantia's urban and peri-urban areas host a range of plant species in specific biomes that rely on pollinators, and tracking the health of pollinator populations will help the city understand potential risks to its food systems and natural ecosystems.

Lastly, Indicator 1A: Food Security was selected to track the role of ecosystems in supporting local food systems. With increasing urbanization, the city must understand how ecosystems contribute to food production, especially in urban agriculture and local food initiatives. This indicator will help Verdantia assess the resilience of its food systems and ensure food security for its growing population.

Verdantia's decision to focus on these four indicators reflects its specific goals for enhancing urban sustainability and resilience. The city has tailored its approach by considering data sources such as geospatial analysis, local environmental monitoring, and collaboration with research institutes to track these services. The availability of these sources decides whether the city chooses the more comprehensive or core measurement methods.

By focusing on these ecosystem services, Verdantia will be able to set a baseline, monitor trends, and take proactive steps to preserve and enhance ecosystem services that benefit both people and nature. This monitoring will also feed into broader targets in Step 3 of this guidance, ensuring that Verdantia's urban development is aligned with global sustainability and ecosystem service targets.

4.3. Wrap-up of Step 2: connecting the dots

By following the 'Assess and Prioritize' steps in this framework, your city now has a clear initial understanding of the state of nature and the pressures affecting it, both at the city-wide and/or the specific ecosystem level. This section concludes the indicator selection process by providing a summary of the chosen indicators.

Some indicators are measured at the ecosystem level, while others apply to a broader, cross-ecosystem scale. Although the city-wide and ecosystem-specific data will ultimately need to be integrated to develop a comprehensive nature strategy, for now, we present them separately. This helps clarify which indicators fall under each level and how they have been assessed by your city.

Connecting city-wide and ecosystem specific indicators

Understanding the state of nature at both a city-wide and ecosystem-specific scale enables your city to evaluate the balance between the broad-scale trends and localised ecosystem conditions. For example, there may be ecosystems within your city that support high diversity of species and provide various ecosystem services, yet these areas could represent only a small portion of the city's total natural area due to urban pressures.

Prioritizing Ecosystems at High Risk of Degradation:

Since many assessments are resource- and time-intensive, it is recommended to prioritize ecosystems at the highest risk of degradation. These ecosystems require **immediate attention** and targeted action to prevent further loss. However, while prioritizing high-risk ecosystems, it is also essential to maintain a broader conservation perspective. Aligning your city's efforts with global targets - such as 30x30 - ensures a holistic approach to nature conservation.

Indicator selection and Baseline Assessment:

Use table 16 to document the selected indicators and their baseline assessment. Typically, the earliest year for which data is available serves as a baseline or reference year. However, verify whether this aligns with existing local or national policies and targets - if not, ensure that your city adopts a consistent baseline year across all assessments and otherwise make sure to use the same baseline year.

Table 16. Overview table to mark your city's selected indicators and fill out your baseline assessment.

Indicator name	Measuring Level	Selected	Baseline assessment	
			year	value
Pressure: Pilot theme LUDaS				
Pressure Indicator 1: Land Conversion due to Land Development and Sprawl	City-wide	•	e.g. 2023	e.g. 10 km ²
State of Nature: Extent				
Extent Indicator 1A: Terrestrial area	City-wide and/or Eco.	•	e.g. 2023	If assessments were done on ecosystem level list all ecosystems and their assessment e.g. 100 km ² boreal forest, 200 km ² build up area
Extent Indicator 1B: Aquatic area	City-wide and/or Eco.	•		e.g. 200 km ² lakes and rivers
Extent Indicator 1C: Vegetation and Green Cover	City-wide and/or Eco.	•		
Extent Indicator 2A: Degraded area	City-wide and/or Eco.	•		
Extent Indicator 2B: Protected area	City-wide and/or Eco.	•		
State of Nature: Biodiversity				
Biodiversity Indicator 1A: Diversity	Ecosystem	•		
Biodiversity Indicator 1B: Abundance & Conservation status	Ecosystem	•		
Biodiversity Indicator 1C: Species Richness	Ecosystem	•		
Biodiversity Indicator 2A: Connectivity	City-wide	•		
Biodiversity Indicator 2B: Habitat Diversity	City-wide	•		

Biodiversity Indicator 2C: Soil Health	Ecosystem	•		
State of Nature: Ecosystem services				
Provisioning Indicator 1A: Food Security	City-wide	•		
Provisioning Indicator 1B: Woodfuel	Ecosystem	•		
Provisioning Indicator 1C: Water security	City-wide	•		
Provisioning Indicator 1D: Medicinal applications	Ecosystem	•		
Regulating & Maintenance Ind. 2A: General protective services	Ecosystem	•		
Regulating & Maintenance Ind. 2B: Precipitation, flooding and erosion protection	Ecosystem	•		
Regulating & Maintenance Ind. 2C: Coastal flood protection	Ecosystem	•		
Regulating & Maintenance Ind. 2D: Urban heat island reduction	Ecosystem	•		
Regulating & Maintenance Ind. 2E: Air quality regulation	Ecosystem	•		
Regulating & Maintenance Ind. 2F: Pollination	Ecosystem	•		
Regulating & Maintenance Ind. 2G: Carbon sequestration	Ecosystem	•		
Regulating & Maintenance Ind. 2H: Disease regulation	Ecosystem	•		
Cultural Indicator 3A: Population living near park or green area	City-wide and/or Eco.	•		
Cultural Indicator 3A: Recreation, Heritage, cultural	City-wide and/or Eco.	•		
Cultural Indicator 3A: Enumerating sacred natural sites	City-wide and/or Eco.	•		
Cultural Indicator 3A: Education and science opportunities	City-wide	•		

5. Step 3: Setting Targets

5.1. Introduction to target setting

Box 16: Recap of the completed steps

In *Step 1 Your City Context*, your city identified key aspects in terms of ecosystems, existing policies, capacity to measure and capacity to act and set targets. These context factors have influenced the selection of relevant indicators and suitable measurement methods in step 2. Now that you have an assessment for all your selected indicators, you will establish a target for each indicator based on the guidelines provided in this chapter and your baseline assessment. The city context assessed in step 1, will also play a critical role in target-setting to ensure targets that are feasible and impactful. In particular, consider your existing policies as assessed in [Step 1, section 3.3](#). Make sure your targets align with local and regional targets for your indicators. In addition, take your city's capacity to set targets and act into account as assessed in [Step 1, section 3](#), which resulted in a target setting level of either standard, intermediate or advanced. Throughout this step 3 you will be guided in choosing a target based on your capacity level.

This chapter guides you through Step 3: Target setting (figure 7). Ensure you have a clear overview of the work completed in Step 1 and 2. Use table 17 to summarize key insights from step 1. And use table 16, from the wrap-up section as a summary of your selected indicators and baseline assessments. Having this information organised will help you set targets that align with your city's needs and priorities.

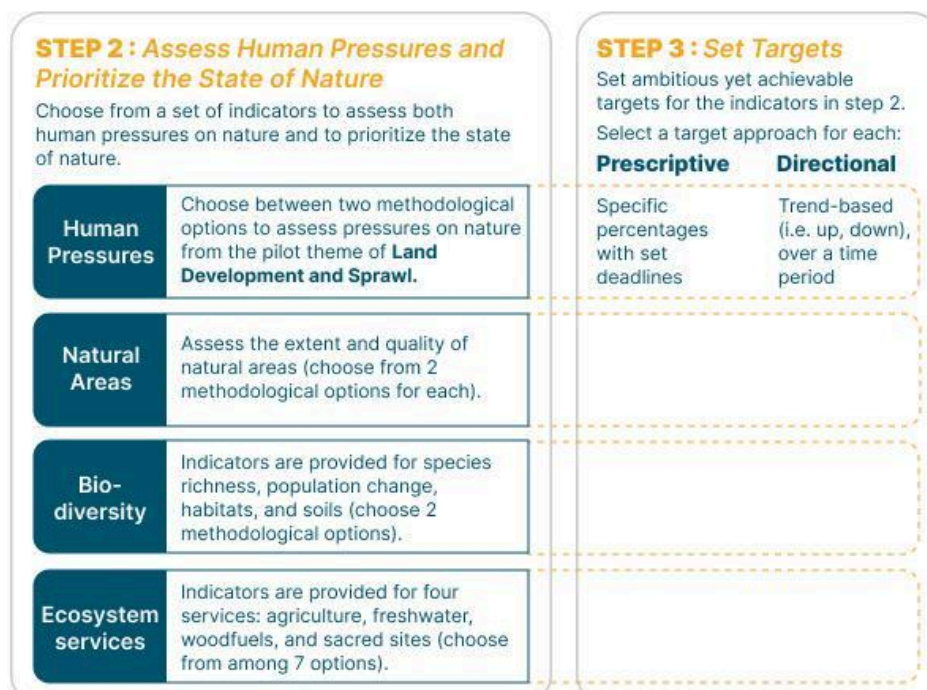


Figure 7. Overview of the three main steps in this guidance, with “Step 3 Setting Targets” highlighted.

Table 17. Key City Characteristics: Ecosystem Type, Target Setting Capacity and Existing policy context

City Key Characteristics		
Ecosystem Type(s) – Biome level	City Capacity Level to set targets	Existing policy context
E.g. T2. Temperate-boreal forests and woodlands	E.g. Advanced	E.g. existing goals or targets on your city, regional or national level

5.1.1. Two Types of Targets

The indicators you have selected and the city characteristics you have identified will play a crucial role in shaping the ambition and structure of your targets. For example, the ecosystem types you identified may directly determine which species need to be measured, thereby guiding your target species and their expected richness. Similarly, your city's capacity level will play a critical role in determining the feasibility and scope of the targets you set.

The target-setting process includes two types of targets, each serving a distinct purpose:

- **Prescriptive Targets (Highest Priority):** These are the most critical targets, directly within the city's sphere of influence and highly recommended by SBTN. They include specific percentage-based improvements and time-bound goals to ensure measurable progress. Without setting quantitative targets, achieving a net gain for nature in your city would likely be unfeasible or unattainable. Three different target levels are given; *standard- intermediate-advanced*. A level is chosen based on the city's capacity to act (assessed in step 1, section 4.3). The levels are there to ensure that cities set both relevant and feasible targets.
- **Directional Targets (Flexible Progress Goals):** These targets help cities outline their intended progress without requiring specific timelines or percentage-based goals. They serve as complementary goals to prescriptive targets, ensuring that biodiversity and ecosystem services are integrated into conservation efforts.

Cities are encouraged to adopt a more quantitative approach for directional targets, where possible. If your city has the capacity to define specific timelines and percentage-based improvement goals, doing so can provide a stronger drive for nature improvements. It also enables measuring progress and benchmarking against other cities. Finally, by aligning target-setting with your city's capacity and context, you can ensure that your efforts lead to meaningful and measurable improvements for urban nature.

5.1.2. Setting Targets on Ecosystem or City-wide Level

Similar to Step 1 and 2, the target-setting process requires your city to establish both the city-wide and ecosystem specific targets. These levels remain consistent throughout the guidance ensuring that the areas identified in the assessment phase continue to guide the target-setting process. The rationale is straightforward: the areas you assess and measure are the same areas where you can set targets and monitor progress over time. By maintaining this alignment, your city ensures that targets are relevant, actionable, and measurable.

5.1.3. Setting Targets relative to Your Baseline

You will set targets for all the indicators you have selected and assessed in Step 2. In most cases, the first year you conducted assessment or the earliest year with available data will serve as your baseline or reference year. However, it is important to verify whether this baseline aligns with existing local or national policies and targets (as identified in Step 1). Once determined, ensure that your city's baseline year is clearly outlined and communicated to maintain consistency in tracking progress.

Setting targets in collaboration with stakeholders

Setting targets for nature in your city is an important step, but achieving them often requires collaboration beyond city officials. While the city can take direct action, such as restoring or protecting natural areas within its control, many targets depend on the involvement of other stakeholders, including businesses, landowners, and residents. In some cases, the city may even be fully reliant on external actors to meet its goals. This underlines the importance of involving stakeholders in the target-setting process to set feasible targets, increase buy-in and create a shared responsibility to take action.

Incorporating equity and justice in your target setting is a prerequisite

Incorporating equity and justice in target-setting is not just an ethical consideration—it is essential for achieving truly effective and transformative outcomes for nature and people alike. Without an explicit focus on equity, conservation and restoration efforts risk reinforcing existing inequalities, leaving marginalized communities without access to the benefits of nature's ecosystem services. As discussed in [Chapter 2](#), equity and justice must be integrated into every phase. Otherwise, governance models may continue to overlook the rights and voices of all stakeholders —both human and non-human—thereby weakening the impact and legitimacy of targets for nature.



Some examples on setting targets not only for improving nature but also the equitable distribution of the benefits of nature's ecosystem services:

- When setting targets for restoring degraded ecosystems, like polluted rivers or urban wetlands, weigh in the importance of which locations to prioritise to provide a healthy living environment with recreational or cultural spaces for marginalized communities.
- Prioritizing urban biodiversity hotspots, such as fragmented forests or remnant grasslands, while ensuring nearby underserved communities gain equitable access to the ecosystem services these areas provide (e.g., cooling, flood mitigation).
- Setting biodiversity restoration targets that address historical inequities, such as expanding biodiversity-rich parks in neighborhoods that lack green spaces.
- When setting targets for increasing shares of natural areas in the city (e.g. through green roofs or urban tree planting) make sure benefits of green are shared in an equitable way between lower and higher-income neighborhoods.

5.2. Targets for nature enhancement in your city

The first section of this target-setting guidance is centered on establishing a clear direction for your city's future state of nature, by focussing on the same three key themes:

- Extent of natural area in the city
- Biodiversity (including ecosystem services)
- Ecosystem services

As highlighted, biodiversity and ecosystem services are fundamental aspects of all nature areas within your city. Therefore, setting targets for the extent of natural areas is inherently linked to biodiversity and ecosystem services goals. Expanding the extent of nature should always aim to enhance biodiversity by supporting diverse species and habitats. It should also improve ecosystem services to provide greater environmental and social benefits.

5.2.1. Setting Targets for EXTENT OF NATURAL AREAS in Your City

This section focuses on setting targets for Extent of Natural Areas indicators, which you selected and assessed in step 2. Tables 23 and 24 provide examples for directional targets for the extent indicators. These targets are flexible and adaptable, allowing cities to tailor them to their specific circumstances. However, cities are strongly encouraged to set specific targets, including quantitative benchmarks and timelines, where possible. Setting clear, measurable goals enhances accountability and provides a stronger vision for progress.

For quality/status indicators, this guidance follows a prescriptive approach. If you assess indicators at the ecosystem level, ensure that you set specific targets for each ecosystem. Prioritize more ambitious targets for vulnerable ecosystems, as identified in Step 1, to ensure that conservation and restoration efforts are directed where they are most needed.

The target-setting process for these indicators is closely aligned with the target setting for the pressure indicators in section 6.3, as both play a crucial role in achieving a nature-positive outcome. To support natural recovery, cities must aim to increase ecosystem coverage while simultaneously reducing pressures that limit space for nature.

Extent Indicators : Directional

Target setting for indicators, such as terrestrial area, aquatic area and green cover) is recommended as *directional* as the feasibility of increasing natural areas depends heavily on the context of your city. Only your city can determine whether an increase is possible, and, if so, by how much. However, at a minimum, cities should aim to prevent further loss of natural areas (net zero).

Quality Indicators: Prescriptive

Target setting for indicators such as degraded area and protected area is *prescriptive*, as the quality of natural areas must improve over time. Based on your city's capacity to act (assessed in step 1, section 4.3) you will be advised an appropriate target level.

- If your city has the resources and commitment, you are **encouraged to adopt a more ambitious target level** than the one recommended in **Step 1**.
- If you choose a less ambitious target, it is important to justify this decision and reflect on the rationale. Equity considerations, such as ensuring fair distribution of environmental benefits across all communities, may be a valid reason—but make sure to engage all stakeholder groups, including marginalized and Indigenous communities, as well as consider non-human species in your decision-making.

Ensuring Alignment with Biodiversity and Ecosystem Services Targets: When setting these targets, consider the biodiversity and ecosystem services you have already established. Achieving this may require expanding natural areas to create more habitat space; improving habitat quality where necessary; maintaining and protecting high quality habitats that already exist.

Equity must remain a key consideration. Pursuing ambitious targets should not come at the expense of fairness and justice. Ensure that your city's nature-positive actions benefit all communities equitably while fostering long-term environmental resilience (see chapter 2).

Table 23. Targets per indicator for Theme EXTENT OF NATURAL AREAS – Subgroup Extent

Indicators	Level (Ecosystem or City-wide)	Target Type	Indicator Target
Indicator 1A: Terrestrial	City-wide and Ecosystem	Directional	<p>Increase the extent and quality of natural terrestrial areas in your city.</p> <p>For example by rewilding natural areas, development or extension of public parks, regenerating former industrial areas, developing green roofs, substituting pavement for plants or trees, etc.</p>
Indicator 1B: Aquatic	City-wide and Ecosystem	Directional	Aim to increase the extent and quality of aquatic ecosystems within the city
Indicator 1C: Vegetation and Green Cover	City-wide and Ecosystem	Directional	Aim to increase the total vegetation and tree canopy cover within the city boundaries

Table 24. Targets per indicator for Theme EXTENT OF NATURAL AREAS – Subgroup Quality/Status

Indicators	Level (Ecosystem or City-wide)	Target Type	Indicator Target
Indicator 2A: Degraded	City-wide and Ecosystem	Prescriptive	<p><i>Using the first assessment year as the baseline: as measured before in the assessed area.</i></p> <p><i>When setting targets for each ecosystem within your city area please incorporate the level of threat you assessed in step 1. Consider adopting more stringent targets for ecosystems that are threatened and vulnerable.</i></p> <p><i>Standard:</i> Restore at least 30% (test in pilot) of the total degraded area of ecosystems in the city's boundaries by 2030</p> <p><i>Intermediate:</i> Restore at least 40% of the total degraded area of ecosystems in the city's boundaries by 2030</p> <p><i>Advanced:</i> Restore at least 60% of the total degraded area of degraded ecosystems in the city's boundaries by 2030</p> <p>Please note regeneration does not apply here; areas as measured before.</p> <p>Linkage to global goals:</p>

			<p>These targets are explicitly linked to the targets as listed in the CBD KM-GBF for 2030:</p> <ul style="list-style-type: none"> Target 2: Restore 30% of all Degraded Ecosystems. This target aims to ensure that by 2030, at least 30% of areas of degraded terrestrial, inland water, and coastal and marine ecosystems are under effective restoration. <p>Furthermore, a combination is made with the EU's Nature Restoration Law:</p> <ul style="list-style-type: none"> Article 4 and 5: A National target of restoring at least 30% of the total area of all habitats that are not in good condition - priority to Natura 2000 sites - by 2030. The target will increase to 60% and 90% by 2040 and by 2050 respectively. Flexibilities may apply.
Indicator 2B: Protected	City-wide and Ecosystem	Prescriptive	<p>Aim to increase the extent and quality of protected areas within the city over time, ensuring they provide critical habitats for biodiversity, offer ecological services, and contribute to the well-being of urban residents.</p> <p><i>Share of protected versus non-protected (given a 2024 baseline);</i></p> <p>Standard: Achieve a conservation proportion/share of at least 20% in the total area of ecosystems by 2030.</p> <p>Intermediate: Achieve a conservation (protect) share of at least 30% in the total area of ecosystems by 2030.</p> <p>Advanced: Achieve a conservation share of at least 40% in the total area of ecosystems by 2030.</p> <p>Linkage to global goals: These targets are explicitly linked to the targets as listed in the CBD KM-GBF for 2030: <i>By 2030, at least 30% of terrestrial and inland water ecosystems, as well as marine and coastal areas, should be effectively conserved through protected areas and other effective area-based conservation measures.</i></p>

Box 17: City example: Setting targets for Nature theme 1. Extent of natural area

Verdantia has selected the following indicators to measure and set targets for the expansion and improvement of natural areas within the city. These efforts are aimed at creating a more sustainable urban environment where nature plays a key role in supporting biodiversity, climate resilience, and quality of life for residents.



Indicator 1A: Terrestrial Ecosystems

Verdantia will aim to Increase the extent and quality of natural terrestrial areas within the city.

Baseline: The first year for which GIS data is available, 2015, will provide the starting point.

Indicator 1B: Aquatic Ecosystems

Verdantia will aim to increase the extent and quality of aquatic ecosystems within the city.

Baseline: The first year for which GIS data was available, 2015, will provide the starting point.

Indicator 1C: Vegetation and Green Cover

Verdantia will aim to increase the total vegetation and tree canopy cover within the city boundaries.

Baseline: The first year of data collection, 2025, will provide the starting point.

Verdantia's focus on restoring degraded ecosystems and expanding protected areas is a key strategy for ensuring long-term biodiversity resilience and improving the health of natural systems within the city. By setting these prescriptive targets, the city is positioning itself to make meaningful progress towards global conservation goals and building a more sustainable and resilient urban environment.

Indicator 2A: Degraded Areas

Verdantia will focus on restoring degraded ecosystems, especially the Seasonal Floodplain Marshes.

Intermediate Level: Restore at least 40% of the total degraded area of ecosystems in the city's boundaries by 2030, with a focus on areas in severe decline, such as the Seasonal Floodplain Marshes, to enhance biodiversity and ecosystem services.

Baseline: The first year of data collection, 2025, will serve as the starting point.

Indicator 2B: Protected Areas

Verdantia will work to increase the proportion of protected areas within the city to safeguard critical habitats and enhance ecosystem services. Protection efforts will focus on conserving key ecological areas, including marshlands, forests, and riparian zones.

Intermediate Level: Achieve a conservation proportion of at least 30% in the total area of ecosystems by 2030, ensuring high-priority habitats like the Seasonal Floodplain Marshes are included in the city's protected areas.

Baseline: The first year with available data, 2010, will provide the starting point.

5.2.2. Setting Targets for BIODIVERSITY in Your City

You will begin by setting targets for biodiversity for your city, covering all the indicators selected and assessed in step 2. Generally, the earliest year with available data or an assessment will serve as the baseline or reference year, unless a local or national policy (assessed in Step 1) specifies a different baseline. Since indicators were assessed at different levels (scales) in step 2 - either at the city-wide level, ecosystem level or both - you will set targets for the same level(s) to maintain consistency.

Table 18 and 19 provide guidance for setting directional targets for the biodiversity indicators. As shown, these targets indicate a general improvement compared to the baseline assessment, but do not specify a fixed percentage or timeline. However, cities that have the capacity to set more detailed targets, including specific improvement percentages and timelines, are strongly encouraged to do so. Setting such quantifiable targets helps create clear benchmarks for progress and strengthens accountability in achieving biodiversity goals.

Box 18: Why are biodiversity targets set directionally?

All targets for the biodiversity theme are recommended as '*directional*' rather than prescriptive for several reasons:

1. Ecosystem balance as the goal: Setting specific percentage-based increases or detailed targets for ecosystem-related metrics like species richness and abundance is highly complex. The ultimate goal for any ecosystem is to achieve a balanced state that is rich and abundant in species. Therefore, the focus remains on continuous improvement until this state is achieved.
2. Integration with city-wide targets: Biodiversity-specific indicators contribute to broader targets for overall terrestrial and aquatic ecosystem coverage, which may include multiple biomes. These city-wide targets are prescriptive, ensuring that as ecosystem coverage increases, biodiversity improves in parallel.
3. Avoiding overburdening cities: Mandating prescriptive targets at every level can overwhelm cities and dilute attention from their primary objective—achieving net gains for nature. The city-wide targets, which align more closely with global goals like 30x30, provide a clearer and more focused representation of the city's overall ambition.

Table 18. Recommended target per indicator for Theme BIODIVERSITY, subgroup Species

Indicators	Level (Ecosystem or city-wide)	Target Type	Recommended Indicator Target
Indicator 1A: Diversity	Ecosystem	Directional	Aim to increase the variety and abundance of species within the city area over time. (ballpark range of years/number to measure - success stories of cities increasing variety and abundance)
Indicator 1B: Abundance & Conservation status	Ecosystem	Directional	Aim to enhance the population size of (native) species and improve the conservation status of threatened or endangered species over time.
Indicator 1C: Richness	Ecosystem	Directional	Aim to increase the number of different species present within the city area over time.

Table 19. Recommended target per indicator for Theme BIODIVERSITY, subgroup Habitat Quality

Indicators	Level (Ecosystem or city-wide)	Target Type	Recommended Indicator Target
Indicator 2A: Habitat Diversity	City-wide	Directional	Aim to increase the variety and distribution of habitats within the city area over time
Indicator 2B: Connectivity	City-wide	Directional	Aim to improve the connectivity between natural habitats over time, reducing habitat fragmentation.
Indicator 2C: Soil Health	Ecosystem	Directional	Suggested targets: Aim to improve the overall quality and biodiversity of urban soils over time Increase soil organic content by 5% across urban areas by 2030

Box 19: City example: Setting targets for Nature theme 2. Biodiversity**Subgroup 1: Species**

Based on the selected indicators, Verdantia is moving forward with setting specific targets to guide the preservation and enhancement of its urban ecosystems. These targets will focus on increasing species diversity, abundance, and richness—key aspects of maintaining healthy, resilient ecosystems within the city.

**Indicator 1A: Diversity**

Verdantia aims to increase the variety and abundance of species within the ecosystem area in focus over time, meaning that the city in this case specifically targets *Seasonal Floodplain Marshes*. Progress will be tracked by monitoring changes in species variety and their distribution throughout the given ecosystem, looking at ecosystem specific (native) species.

Baseline: Data collected in 2025 will establish the baseline for measuring improvements in species diversity.

Indicator 1B: Abundance & Conservation Status

Verdantia aims to enhance the population sizes of native species in *Seasonal Floodplain Marshes* and improve the conservation status of those that are threatened or endangered.

Baseline: Data from the first year of collection (2025) will serve as the starting point for assessing changes in abundance and conservation status.

Indicator 1C: Richness

Verdantia aims to increase the number of different species present within its *Seasonal Floodplain Marshes*.

Baseline: The 2025 data collection will provide the benchmark for measuring changes in species richness over time.

By setting these targets, Verdantia is taking meaningful steps to foster a nature-positive urban environment. The city will continue to use geospatial data and GIS mapping to monitor progress, ensuring that its strategies effectively enhance species diversity, abundance, and richness. These efforts will contribute to reducing ecological fragmentation and promoting healthy, interconnected habitats across Verdantia's urban landscape.

Subgroup 2: Habitat quality

Based on the selected indicators, Verdantia is now moving ahead setting specific targets to guide the preservation and enhancement of its ecosystems. These targets will focus on improving habitat diversity and connectivity, two key elements vital for maintaining healthy, resilient ecosystems in the urban landscape.

Indicator 2A: Habitat Diversity

Verdantia aims to **increase the variety and distribution of habitats** within the city over time. This

will be tracked by measuring the number and distribution of different habitat types across the city.
Baseline: Data from 2025 will serve as the baseline for measuring progress towards enhancing habitat diversity.

Indicator 2B: Connectivity

Verdantia aims to **improve connectivity between natural habitats**, working to **reduce habitat fragmentation** and promote ecological corridors that allow species to move freely across the landscape. The focus will be on establishing or improving linkages between key habitat areas.

Baseline: The first year of data collection, 2025, will provide the starting point for assessing connectivity improvements.

By setting these targets, Verdantia is taking meaningful steps to foster a nature-positive urban environment. The city will continue to use geospatial data and GIS mapping to monitor progress, ensuring that its strategies are effectively reducing fragmentation and enhancing habitat variety across urban areas.

5.2.3. Setting Targets for ECOSYSTEM SERVICES in Your City

This section on target-setting focuses on the Ecosystem Services indicators that are most relevant to your city, as identified in Step 2. When defining targets, consider the specific ecosystem services your city has prioritized—such as food security, water provisioning, or climate regulation—and the measurement methods best suited to your urban context.

Box 20: Why are ecosystem services targets set as directional?

Similar to the biodiversity targets in section 6.2.1, the targets for ecosystem services generally remain at a directional level for several reasons:

1. Establishing precise numerical targets, such as specific percentage increases in ecosystem service provision, is challenging due to the dynamic and context-dependent nature of ecosystems and their services. The ultimate goal is to improve the functionality and long-term provision of ecosystem services to meet both human and ecological needs.
2. Measuring the direct outcomes of ecosystem services is often difficult, due to factors like data limitations, modeling uncertainties, and regional variations in service delivery. Directional targets accommodate these challenges by emphasizing progress while allowing for flexibility.
3. Prescriptive targets typically require extensive data collection, monitoring, and administrative effort, which can be burdensome for cities, especially those with limited resources. Directional targets offer a clear focus while being more manageable and actionable.

However, for the indicator 3A. *Accessibility of natural areas within the city* the target guidelines are prescriptive. This is done to ensure that all residents can benefit from the ecosystem services provided by public natural areas within the city boundaries. For this indicator it is of utmost importance to take equity into account when setting your target and implementing actions to achieve it (see [chapter 2](#)).

You will set targets for all the indicators selected and assessed in Step 2. Tables 20, 21 and 22 present examples of directional targets for ecosystem service indicators. These targets are flexible and non-specific, allowing your city to tailor them to your specific contexts. However, where possible, you are encouraged to set specific targets, including quantitative benchmarks and timelines. Defining clear, measurable targets help create a stronger vision for progress and enhances accountability in achieving ecosystem service goals.

Table 20. Targets per indicator for Theme ECOSYSTEM SERVICES - Provisioning

Indicators	Level (Ecosystem or City-wide)	Target Type	Indicator Target
Indicator 1A: Food Security	City-wide	Directional	Increase the availability of ecosystem services that support food production, while fostering an environment that allows for greater local food resilience.
Indicator 1B: Woodfuel	Ecosystem	Directional	Maintain or improve the natural systems that contribute to sustainable woodfuel availability while balancing the needs of urban growth and forest preservation.
Indicator 1C: Water security	City-wide	Directional	Ensure that ecosystems can continue to provide clean, accessible water by preserving the natural processes that regulate water cycles and availability.
Indicator 1D: Medicinal applications	Ecosystem	Directional	Protect and conserve species that contribute to medicinal resources, preserving both biodiversity and the ecosystem functions that support the discovery and sustainable use of medicinal plants.

Table 21. Targets per indicator for Theme ECOSYSTEM SERVICES – Regulating and Maintenance

Indicators	Level (Ecosystem or City-wide)	Target Type	Indicator Target
Indicator 2A: General protective services	Ecosystem	Directional	Gradually enhance the effectiveness of natural systems in providing protective services against natural hazards by improving ecosystem resilience and connectivity over time.
Indicator 2B: Precipitation, flooding and erosion protection	Ecosystem	Directional	Over time, reduce the impacts of heavy precipitation, urban flooding, and soil erosion by improving the condition and extent of natural landscapes that act as protective buffers. Continuously improve the capacity of urban ecosystems to retain and filter stormwater by protecting and enhancing wetlands, green spaces, and natural drainage systems.
Indicator 2C: Coastal flood protection	Ecosystem	Directional	Increase the effectiveness of coastal ecosystems, such as mangroves and dunes, in protecting urban areas from flooding and storm surges by preserving their health and expanding their coverage over time.
Indicator 2D: Urban heat island reduction	Ecosystem	Directional	Over time, reduce the intensity and extent of urban heat islands by increasing vegetative cover and enhancing the natural cooling capacity of the city through greening initiatives.
Indicator 2E: Air quality regulation	Ecosystem	Directional	Gradually improve air quality by enhancing the capacity of urban vegetation to filter pollutants and maintain atmospheric balance, ensuring healthier living conditions over time.
Indicator 2F: Pollination	Ecosystem	Directional	Increase the effectiveness and reliability of pollination services over time by conserving habitats for pollinators and fostering diverse plant communities that support these species.
Indicator 2G: Carbon sequestration	Ecosystem	Directional	Enhance the city's carbon sequestration capacity by gradually increasing the health, extent, and functionality of ecosystems, such as forests and soils, that capture and store carbon.
Indicator 2H: One Health: Disease regulation	Ecosystem	Directional	Over time, strengthen the natural regulation of disease vectors and pathogens by improving ecosystem health and biodiversity, contributing to reduced disease risks and enhanced public health.

Table 22. Targets per indicator for Theme ECOSYSTEM SERVICES – Cultural Services

Indicators	Level (Ecosystem or City-wide)	Target Type	Indicator Target
Indicator 3A: Accessibility of natural areas within the city area	City-wide and/or ecosystem	Prescriptive	<p>Target: Increase the percentage of the urban population living within 300 meters of a park or green area by 2030, ensuring equitable access to nature for recreation and well-being. This target is structured into three levels, allowing Verdantia to scale its ambitions based on resources and feasibility:</p> <p>Your target level is guided by your city’s capacity to act as assessed in step 1 (section 4.3)</p> <p>Standard Level: Ensure that at least 50% of the population lives within 300 meters of a park or green area by 2030.</p> <p>Intermediate Level: Ensure that at least 75% of the population lives within 300 meters of a park or green area by 2030.</p> <p>Advanced Level: Ensure that 100% of the population lives within 300 meters of a park or green area by 2030.</p> <p>Linkage to global goals: These targets are explicitly linked to the targets as listed in the CBD KM-GBF for 2030:</p> <ul style="list-style-type: none"> Target 12: Enhance Green Spaces and Urban Planning for Human Well-Being and Biodiversity. Significantly increase the area and quality, and connectivity of, access to, and benefits from green and blue spaces in urban and densely populated areas sustainably, by mainstreaming the conservation and sustainable use of biodiversity, and ensure biodiversity-inclusive urban planning, enhancing native biodiversity, ecological connectivity and integrity, and improving human health and well-being and connection to nature, and contributing to inclusive and sustainable urbanization and to the provision of ecosystem functions and services.
Indicator 3B: Recreation Heritage, cultural	City-wide and/or ecosystem	Directional	Enhance the recreational and cultural value of green spaces by fostering opportunities for leisure, celebration of heritage, and cultural expression, with ongoing improvements to accessibility and inclusivity for all residents.
Indicator 3C: Enumerating sacred natural sites	City-wide and/or ecosystem	Directional	Identify and document sacred natural sites within the city boundaries, gradually increasing recognition and protection of these culturally significant areas.
Indicator 3D: Education and science opportunities for formal and informal education and training	City-wide	Directional	Expand opportunities for formal and informal education and scientific research by improving access to natural spaces, fostering partnerships with educational institutions, and promoting community-driven environmental learning initiatives over time.

Box 21: City example: Setting targets for ecosystem services

Verdantia has selected the following indicators for ecosystem services to measure and set targets, reflecting the city's commitment to enhancing sustainability, resilience, and public well-being. The targets are designed to balance ecological and socio-economic goals, in line with the city's capacity for action.

**Indicator 3A: Population Living Near a Park or Green Area**

Verdantia will aim for the **Intermediate Level** based on its current capacity: ensure that at least 75% of the city's population lives within 300 meters of a park or green area by 2030.

Indicator 2F: Air Quality Regulation

Verdantia will aim to gradually improve air quality over time by enhancing the capacity of urban ecosystems, particularly vegetation, to filter pollutants and maintain atmospheric balance. This will contribute to healthier living conditions by supporting the natural processes that regulate air quality.

Baseline: The first year of data collection, 2025, will provide the starting point for assessing air quality improvements.

Indicator 2G: Pollination

Verdantia will aim to increase the effectiveness and reliability of pollination services over time by conserving and restoring habitats for pollinators.

Baseline: The first year of data collection, 2025, will provide the starting point for assessing pollination improvements.

Indicator 1A: Food Security

Verdantia will aim to increase the availability of ecosystem services that support food production, such as soil health, water regulation, and pollination, while fostering an environment that allows for greater local food resilience.

Baseline: The first year of data collection, 2025, will provide the starting point for assessing food security improvements.

5.3. Targets for pressure reduction in your city

5.3.1. Theme: Land-use development and sprawl

This section focuses on setting targets for the pressure indicator related to managing Land Development and Sprawl, as assessed in step 2. When defining targets, it's crucial to consider the specific drivers of land pressure—such as buildings, infrastructure, transport, agriculture, and industry—and choose the most suitable measurement methods for your city's context. However, it is important to recognize that all these activities ultimately result in one key outcome: the conversion of land, which is likely to reduce the quality of natural areas in your city.

Prescriptive target for Land Conversion:

This guidance sets a *prescriptive* target for Land Conversion, as it is the primary outcome of all urban developments like buildings, infrastructure, transport, agriculture, and industry. It is therefore necessary to set a measurable and time-bound target for Land Conversion as this will provide a clear target to work towards and to track progress. It ensures cities are held accountable for minimizing their impacts of sprawl and land-use change.

Table 25 provides guidance for the target setting for the Land Conversion indicator. Your city's target level (standard, intermediate, advanced) is determined by the assessment done in Step 1 on the city's capacity to act.

- If your city has the resources, you are **encouraged to adopt a more ambitious target** than the one suggested in Step 1.
- If you choose a less ambitious target, provide a clear justification. Equity may be a valid reason, but it is critical to engage all stakeholders in this decision, including marginalized and Indigenous communities, and consider non-human ecosystems in the discussion.

Aligning Land Conversion Targets with other Nature Goals: When setting Land Conversion targets, ensure alignment with your previous targets set for nature (biodiversity, ecosystem services and extent of natural area). Achieving these targets may require expanding natural spaces and reducing pressure on ecosystems. Therefore, land-use targets should be set at the ecosystem level, prioritizing the most vulnerable ecosystems that require immediate pressure relief.

Equity Considerations: It is crucial to balance environmental ambitions with a fair and just process (see chapter 2). Consider:

- Which ecosystems are most valuable to Indigenous and marginalized communities?
- Which areas require urgent pressure relief alongside regeneration and protection efforts?

By integrating equity into target-setting, your city can protect nature while ensuring that conservation efforts benefit all communities fairly.

Table 25. Detailed Indicator list for 4.B.1. Theme. Setting targets for PRESSURE REDUCTION in my city
- General Conversion

Indicators	Level (Ecosystem or City-wide)	Target Type	Indicator Target
Indicator 1A: Land Conversion due to Land Development and Sprawl	Ecosystem	Prescriptive	<p>Conversion from natural area (ecosystems/habitats) to intensively used area (buildings, infrastructure, industry, agriculture etc.)</p> <p>Standard: 2030: 10% (regenerative) conversion for public interest projects. 2040: 5% (regenerative) conversion for public interest projects. 2050: No net conversion</p> <p>Intermediate: 2030: 5% conversion for public interest projects. 2040: No net conversion</p> <p>Advanced: 2030: No net conversion</p> <p>Linkage to global goals: These targets are explicitly linked to the targets as listed in the CBD KM-GBF for 2030:</p> <ul style="list-style-type: none"> Target 2: Restore 30% of all Degraded Ecosystems. This target aims to ensure that by 2030, at least 30% of areas of degraded terrestrial, inland water, and coastal and marine ecosystems are under effective restoration. <p>Definitions: Public interest Projects: Projects for public benefit or common good that must be designed with biodiversity and ecosystem preservation in mind. These projects should avoid encroaching on important ecosystems and aim to support ecosystem restoration. Conversion: The change in land use from a natural ecosystem (forest, wetland, grassland, etc.) to a non-ecosystem type (urban, industrial, etc.). Barren land may be converted into certain acceptable ecosystem types, such as reforestation or wetland restoration, depending on the context.</p> <p>Acceptable Conversion (examples) Barren Land - Ecosystem Types (acceptable): Reforestation, wetland creation, urban agriculture.</p> <p>Not Acceptable: Conversion of sensitive, high-risk ecosystems (e.g., wetlands, floodplains, old-growth forests) into urban or industrial uses.</p> <p>Qualifiers: Maintain All Ecosystem Types: No ecosystem type should be permanently lost. The goal is to preserve and enhance biodiversity across all ecosystems in the area. Focus First on High-Risk Ecosystem Types: Priority should be given to protecting and regenerating ecosystems that are most at risk of degradation or destruction, such as wetlands, riparian zones, and coastal ecosystems. Safeguards around 'Net' Principles: Any development that leads to land conversion must be offset by equivalent or greater regeneration elsewhere, ensuring no net loss of biodiversity or ecosystem functions.</p>

Box 22: City example: Setting a target for Pressure reduction

For Verdantia, the target-setting for Indicator 1A: Land Conversion due to Land Development and Sprawl will focus on the intermediate level, considering the city's capacity and its strategic goals. The city will ensure that any land conversion is balanced with efforts to protect and regenerate ecosystems. Verdantia will prioritize regenerative approaches for public interest projects and work toward reducing land conversion through sustainable urban planning.

**Indicator 1A: Land Conversion due to Land Development and Sprawl**

Baseline: To be determined through initial assessments and mapping.

Intermediate Level Ambition:

2030: Limit land conversion to 10% of the total area affected by urban development, ensuring that all conversions are regenerative for public interest projects. Projects must be designed with biodiversity and ecosystem preservation in mind, and the focus should be on enhancing ecosystem quality rather than causing further degradation.

2040: Limit land conversion to 5% of the total area affected by urban development, focusing on sustainable, regenerative development strategies that support ecosystem restoration and minimize impacts on natural habitats.

2050: Achieve no net conversion, ensuring that any development activity is compensated with equivalent or greater regeneration efforts, maintaining or enhancing the quality and extent of the city's ecosystems.

5.4. Step 3 Wrap-up: Co-benefits and Interconnections

In cities, everything is connected—nature, people, and the environment we are all embedded in. Understanding how different elements of nature interact can help cities become more sustainable, healthier, and more resilient. When cities work on improving one area of the environment, they often create benefits in others. This interconnectedness means that small changes can lead to big improvements in the way cities function, helping both nature and people thrive.

For example, creating more green spaces in a city doesn't just provide places for people to relax and enjoy the outdoors. It also helps clean the air. Trees and plants absorb pollutants like carbon dioxide, and their leaves help trap dust and other particles in the air. So, by increasing the number of parks, green roofs, or tree-lined streets, cities can offer their residents places to gather and unwind, while also improving air quality and reducing the heat in the city. In this way, access to green spaces and air quality regulation go hand in hand. More green space means cleaner air and a cooler, healthier environment for everyone.

Another great example is how pollinators and food security are connected. Pollinators like bees, butterflies, and birds play a key role in helping plants reproduce, especially crops that are vital for food. In cities where urban farming and local food production are growing, protecting these pollinators becomes essential. If cities take steps to create safe spaces for pollinators, such as planting more flowers or creating green corridors, this directly supports food production and the resilience of local food systems. By protecting pollinators, cities are not only helping nature but also strengthening their food systems—ensuring a steady supply of healthy, local produce for their residents.

All of these connections show how smart, nature-positive interventions can improve life in cities. By recognizing that actions in one area—whether it's increasing green spaces, protecting pollinators, or managing land use—can benefit many others, cities can create a healthier, more balanced environment. It's not just about protecting nature for nature's sake, but about creating cities where both people and the environment can thrive as one whole. By working with nature, cities can unlock countless opportunities for a better future for everyone. These co-benefits not only enhance environmental and social outcomes but also help secure buy-in from citizens and policymakers, making nature-positive actions more attractive for all [12]. Therefore it is important to actively consider the co-benefits of setting targets for nature in cities.

6. Conclusions and next steps: Advancing Science-Based Targets for nature with local governments

As cities continue to grow and evolve, their role in addressing the global biodiversity crisis has never been more critical. This guidance document provides a structured, science-based approach for local governments to assess their urban ecosystems, prioritize key indicators, and set meaningful, measurable targets. By following the outlined three-step process—**understanding city context, assessing and prioritizing pressures and nature, and setting clear targets**—cities can align their policies and strategies with global efforts to achieve a nature-positive future.

Through this guidance, cities can:

- **Identify their local context** and the pressures driving biodiversity loss, such as land-use change and urban sprawl.
- **Assess and prioritize the local pressures on and state of nature**, ensuring that indicators chosen reflect both urban realities and the need for global alignment.
- **Set actionable and equitable targets**, balancing conservation efforts with community well-being and climate resilience.

However, to translate these ambitions into tangible urban transformation, cities must take deliberate steps toward embedding these targets into governance, planning, and policy frameworks.

6.1 Main Steps Forward for Cities

With targets now established, cities must focus on execution through four key action areas:

- **Integrating targets into policy and planning:** Cities may consider embedding biodiversity objectives within urban development strategies, land-use planning, climate adaptation efforts, and infrastructure projects. Aligning these priorities can help ensure that nature remains a central element in decision-making processes.
- **Engaging stakeholders:** Collaboration with local communities, businesses, NGOs, and research institutions can support the development of inclusive, community-driven approaches to nature conservation. Strengthening partnerships can enhance both implementation and long-term impact.
- **Ensuring financial and institutional support:** Sustainable financing plays a key role in advancing nature-positive initiatives. Cities can explore opportunities to secure public and private funding, grants, and innovative financial mechanisms to support long-term biodiversity investments.
- **Monitoring and adapting:** Regularly assessing progress through selected indicators can help cities refine their approaches and adjust targets based on evolving data and scientific insights.

This adaptive approach allows for continuous improvement in local understanding of nature and its well-being, working towards more effective outcomes.

By committing to these actions, cities can move from ambition to action, ensuring that their targets contribute to meaningful and lasting improvements in urban biodiversity and ecosystem resilience.

6.2 Scaling implementation and refining the approach

While this pilot guidance focuses on **land-use development and sprawl**, future iterations will expand to additional themes, such as **water use, pollution, and ecosystem restoration**. To ensure effective uptake, cities are encouraged to:

- **Pilot and refine** the target-setting process through real-world applications and feedback loops.
- **Enhance data collection mechanisms**, leveraging GIS, citizen science, and participatory monitoring.
- **Strengthen cross-sector collaboration**, integrating nature targets into broader sustainability and climate action plans.
- **Engage in peer learning**, sharing successes and challenges with other cities in regional and global networks.

6.3 A Call to Action: Cities as Leaders in Nature-Positive Development

Cities are at the forefront of biodiversity conservation. By adopting Science-Based Targets for nature, they can mitigate pressures, enhance urban ecosystems, and contribute to global sustainability goals. Local governments, urban practitioners, and community stakeholders must act now to transform cities into thriving, resilient ecosystems that support both people and nature.

By embedding Science-Based Targets for nature into urban governance and planning, cities can help reverse nature loss, restore ecosystems, and ensure a sustainable future for all.

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A list of [assessed established frameworks](#) can be found at the beginning of this guidance.

8. Appendices

Appendix A. Pressure themes and the chosen Pilot theme

This guidance is a first pilot version that initially focuses on one pressure theme; Land Use Development and Sprawl. Future work will expand this guidance on target setting for cities to additional pressure themes. While for this pilot we focus on Land Use Development and Sprawl, we acknowledge that cities apply pressures across multiple realms (e.g. water use and water pollution) that also play critical roles in biodiversity loss and ecosystem health. This pilot theme represents just one part of a broader set of pressures that need to be addressed, and future iterations of this guidance will reflect a more comprehensive scope.

This theme was selected through an assessment of over 30 urban pressures on nature across 13 criteria covering applicability, impact on biodiversity, equity, data availability, SBTN principles, and connection with climate change (Figure 8). Land Use Development and Sprawl emerged as the top scoring theme, possessing a direct relationship with the most significant driver of biodiversity loss: land use change. It also aligns with nearly all the global imperatives and scientific frameworks assessed. In other words, by focusing on this theme, there is great potential to address its impact on global biodiversity loss. Moreover, land use planning is often within the scope and responsibilities of local governments, who also often have access to data concerning land use within their jurisdiction. Integrating these targets into their assessments can be a practical step for the city's transition to nature positive.

Figure 8 gives an overview of urban pressure themes that can be added in future versions of this guidance to further develop and enhance the scope.

URBAN PRESSURE THEMES



Figure 8. Overview of urban pressure themes. Source: SBTN

Appendix B. Governance & Equity: detailing underlying considerations

When considering the state of nature in your city and the pressures that act upon it, there is always an overarching structure of governance—so to say, the structural way in which humans organize, take decisions and interact with their environment—that plays a key role in shaping the human connection to the ecosystems your city inhabits. extends beyond policy-making or silo governmental action. It encompasses multistakeholder management, interinstitutional collaboration, and transparent norms that guide decision-making, participation, and accountability within the socio-ecological systems of cities.

Equity in Governance

To address the protection, restoration, and enhancement of urban nature, governance must not only be inclusive but also fundamentally equitable. As highlighted in recent research and discussions on global biodiversity frameworks, transformative change requires governance that respects rights, ensures transparency, provides dispute resolution mechanisms, and equitably shares both the costs and benefits of conservation. Importantly, this equity extends beyond human considerations to embrace the non-human species such as bees, birds and trees, and ecosystems such as wetlands and forests.

Balancing Efforts on Nature and Social Foundation

While cities strive to enhance nature, they must equally prioritize the socio-economic well-being of their citizens to ensure it benefits everyone. Efforts to restore, protect and regenerate ecosystems and biodiversity, should go hand in hand with ensuring access to fundamental needs such as food, water, and housing, as well as to balancing the educational, safety, health, and overall financial growth of the City. Balancing these priorities demands good governance that is inclusive and equitable, addressing the voices of marginalized communities. Balancing these is also described in [Doughnut Economics](#) as the ecological ceiling and social foundation, and by following these principles cities can create environments where both people and nature thrive.

Interconnected Urban and Natural Systems

The urban environment is not a split system of “city” versus “nature” but a dynamic, interconnected whole. Governance processes that assess the state of urban ecosystems, set ambitious yet achievable targets, and act to improve their condition must reflect this interconnectedness within the overall landscape, seascape or watershed to which the City belongs and primarily depends on. For these processes to be effective, they must actively involve all city inhabitants, including indigenous communities and marginalized communities whose voices are often overlooked in decision-making. Simultaneously, governance must extend its recognition and representation to non-human actors—be it pollinators, urban forests, wetlands, or other vital ecological components—ensuring their intrinsic roles and needs are accounted for.

Moving Toward Rights-Based Frameworks

Equity in conservation is [less about management](#) (what actions are taken) and more about governance (who decides, how decisions are made, and how responsibilities and benefits are distributed). It calls

for a shift from participatory approaches to rights-based frameworks, which prioritize the rights of all stakeholders, including Indigenous Peoples, local communities, and other marginalized groups. Rights-based approaches (RBAs) codify these rights into enforceable mechanisms, ensuring that they are respected, protected, and upheld.

Addressing equity

In order to embed the element of equity within this guidance, we take inspiration from the Earth-system justice [8]. Building on epistemic justice and local-to-global justice scholarship, Earth-system justice includes procedural justice (access to information, decision-making, civic space, and courts) and substantive justice in terms of ensuring access to basic resources and services, while ensuring no significant harm and allocation of the remaining resources, risks and responsibilities. Achieving Earth-system justice involves multiple, systemic transformations that address drivers of Earth-system change and vulnerability, and includes addressing the barriers to, and responsibility for, such changes. It also requires addressing the mechanisms that govern the allocation of resources, as well as identifying who is responsible for Earth-system change, and how. The scope of Earth-system justice is framed by three overarching criteria: interspecies justice, intergenerational justice, and intragenerational justice. Building on this foundation, we evaluate the equity aspects within the accessibility indicators of ecosystem services (table 15). While we acknowledge that this is a somewhat narrow approach to the indicators, given the current context and chosen methodologies, they have been integrated in the most efficient and effective way possible.

Integration of the prerequisites and equity in the SBTs Steps

Across each of the five SBTN-steps for setting and acting on Science-Based Targets (SBTs) for Nature, it is important that the process is equitable and inclusive (figure 9). For this reason, we provide some examples on how equity can be incorporated in each step of the SBTN process. This guidance focuses on taking cities through the first three SBTN-steps (Assess, Prioritise, Set Targets). However, examples have also been included for the action and monitoring steps as this can help cities ensure integration of equity in the implementation steps (act and track) that go beyond this guidance.

SBTN'S 5-STEP APPROACH

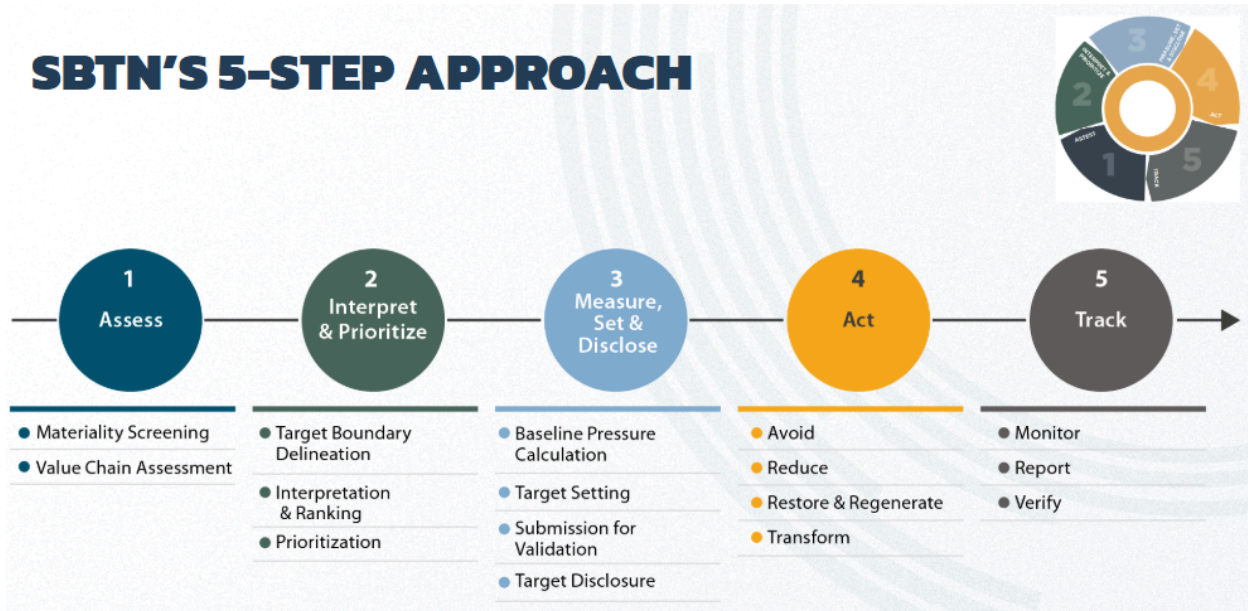


Figure 9. SBTN's five step approach; 1) Assess, 2) Interpret & Prioritize, 3) Measure, Set & Disclose, 4) Act, 5) Track. Source: SBTN

- (1) the assessment of environmental impacts, examples include:
 - Assessing impacts on communities that rely on biodiversity for subsistence or cultural practices, such as urban Indigenous groups harvesting medicinal plants from green spaces.
 - Incorporating citizen science and traditional ecological knowledge (e.g., Indigenous knowledge about species migration patterns) to identify overlooked environmental impacts.
- (2) the interpretation of pressure and state of nature data and prioritization of locations with the aim of addressing, examples include:
 - Prioritizing urban biodiversity hotspots, such as fragmented forests or remnant grasslands, while ensuring nearby underserved communities gain equitable access to the ecosystem services these areas provide (e.g., cooling, flood mitigation).
 - Recognizing the pressures of invasive species or habitat destruction in areas that disproportionately affect both biodiversity and marginalized communities. For instance, a degraded urban forest may lose its biodiversity value while also losing its capacity to provide shade for low-income neighborhoods.
 - Including data on ecological sensitivity (e.g., species richness) alongside social vulnerability (e.g., lack of green spaces) to guide decisions.
- (3) the baseline data collection, target setting, and disclosure, examples include:
 - Ensuring that baseline data collection encompasses all types of biodiversity, from charismatic species (e.g., urban foxes) to less visible but ecologically critical species (e.g., soil microbes or pollinators).
 - Setting biodiversity restoration targets that address historical inequities, such as expanding biodiversity-rich parks in neighborhoods that lack green spaces.

- Disclosing biodiversity data in accessible ways—using visuals, community meetings, and multilingual formats to engage both technical experts and local residents who depend on these ecosystems.
- (4) the action to meet targets (note that this is out of scope for this guidance), examples include:
 - Restoring degraded ecosystems, like polluted rivers or urban wetlands, while simultaneously creating biodiversity corridors and providing recreational or cultural spaces for marginalized communities.
 - Integrating green roofs and urban tree planting to boost biodiversity (e.g., increasing bird or insect habitats) in low-income neighborhoods, which often face urban heat island effects.
 - Ensuring inclusive project governance where community members, including those from marginalized groups, participate in implementing actions such as native species planting or invasive species management.
 - Ensuring actions do not cause or minimize displacement and costs are equitably addressed.
- (5) the monitoring, verifying and reporting on progress over time (note that this is out of scope for this guidance), examples include:
 - Designing participatory biodiversity monitoring programs, where local communities are involved (and remunerated) to monitor key species (e.g., butterfly counts or bird surveys) and provide feedback on changes in ecosystem services.
 - Tracking and reporting not only improvements in biodiversity (e.g., increased species richness in restored areas) but also the equitable distribution of these benefits, such as improved access to nature for underserved communities.
 - Incorporating the well-being of non-human species into monitoring frameworks, ensuring that actions benefit ecosystems holistically rather than focusing solely on human-centric outcomes.

The above examples show why your city, through working with this guidance, should elect to emphasize the principles of equity, inclusion, and rights-based approaches as a fundamental baseline rather than treating them as mere indicators to be measured or assigned specific targets. These considerations are not separate from the five steps but rather integral, non-negotiable guiding principles. They must be considered in each phase of the process with the same weight and urgency as ecological or technical goals. Without this, the transformative potential of SBTs for nature risks being undermined by governance models that perpetuate inequality or fail to account for the rights and voices of all stakeholders, both human and non-human.

Appendix C. Ecosystem typology and categorisation

Urban Ecosystem Typology

The IUCN Global Ecosystem Typology is a hierarchical classification system that, in its upper levels, defines ecosystems by their convergent ecological functions and, in its lower levels, distinguishes ecosystems with contrasting assemblages of species engaged in those functions.

The top level of the Global Ecosystem Typology divides the biosphere into five global realms: i) terrestrial; ii) subterranean; iii) freshwater (including saline water bodies on land); iv) marine; and v) the atmosphere.

The diagram below showcases the different realms and corresponding biomes associated with it.

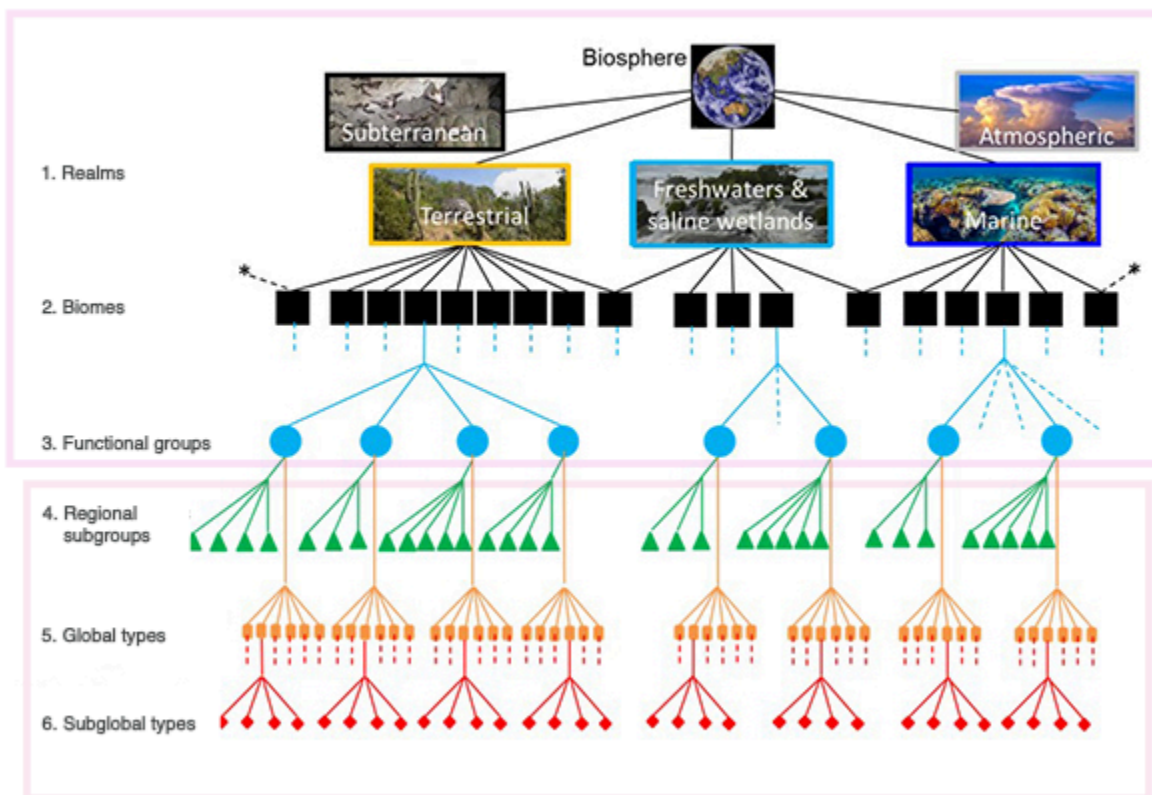


Figure 10. Global ecosystem typology overview. Source: IUCN [13]

For a detailed understanding and assessment, we encourage cities to refer to the Methods and source data for indicative maps of each Ecosystem Functional Group (EFG) provided in the [IUCN Global Ecosystem Typology 2.0: Descriptive profiles for biomes and ecosystem functional groups](#). Cities can

refer to the table in Appendix B, that guides cities on which ecosystems can be applicable in their jurisdiction.

For cities looking to assess the different ecosystem units within their jurisdiction, the following steps can be followed. Please note that this process should be tailored to the city's capacity and available resources:

1. **Understand the Typology Structure:** Familiarize with the hierarchical classification, which includes six levels. The upper levels categorize ecosystems based on functional characteristics, while the lower levels focus on compositional aspects.
portals.iucn.org
2. **Identify Relevant Ecosystem Functional Groups (EFGs):** Determine which EFGs pertain to urban areas. Notably, urban and infrastructure lands are classified under:
 - **T7.4 Urban and infrastructure lands:** This group encompasses areas dominated by human-made structures and infrastructure.
3. **Map Urban Ecosystems:** Conduct spatial mapping to delineate areas corresponding to the identified EFGs. This involves:
 - Collecting spatial data on land use and land cover.
 - Overlaying this data onto existing maps to visualize the distribution of urban ecosystem types.
4. **Assess Ecosystem Characteristics:** Evaluate the structural and functional attributes of each urban ecosystem type by:
 - Analyzing ecological processes, species composition, and interactions within these ecosystems.
 - Considering factors such as biodiversity levels, habitat connectivity, and the presence of green infrastructure.

Ecosystem Categorisation - Conservation Status

The IUCN Red List of Ecosystems includes eight categories: Collapsed (CO), Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT), Least Concern (LC), Data Deficient (DD), and Not Evaluated (NE).

The first six categories (CO, CR, EN, VU, NT and LC) are ordered in decreasing risk of collapse. These categories are nested, so that an ecosystem type meeting a criterion for Critically Endangered will also meet the criteria for Endangered and Vulnerable.

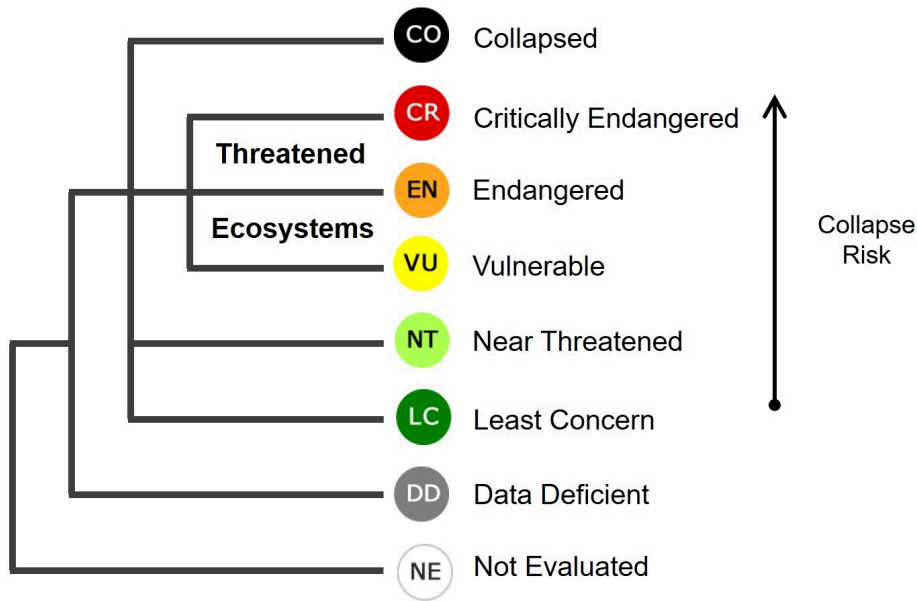


Figure 10. Eight categories of the IUCN Red list of ecosystems. Source: IUCN

The cities can choose follow the steps outlined below to assess the conservation status of the different ecosystems within their region :

1. Based on the Ecosystem Units identification and spatialisation
2. Cities can use five criteria to assess the risk of ecosystem collapse:
 - **Criterion A: Decline in Distribution**
 - Measure the historical and current extent of the ecosystem.
 - Calculate the percentage of area loss over three generations or 50 years (whichever is longer).
 - **Criterion B: Restricted Distribution**
 - Evaluate geographic range using Extent of Occurrence (EOO) and Area of Occupancy (AOO).
 - Assess if the ecosystem is highly fragmented or limited to specific urban pockets.
 - **Criterion C: Environmental Degradation**
 - Assess abiotic changes (e.g., soil contamination, air/water pollution) affecting ecosystem function.
 - Calculate the severity and extent of environmental changes.
 - **Criterion D: Disruption of Biotic Processes**
 - Examine changes in species composition, interactions, and population dynamics.
 - Identify any local extinctions or invasive species impacting ecosystem stability.

- **Criterion E: Quantitative Risk Analysis**
 - Use quantitative models (e.g., simulation models, risk assessments) to estimate the probability of ecosystem collapse within 50-100 years.
 - This requires advanced data on ecosystem dynamics and expert knowledge.
3. Assigning Threat Categories

Based on the results of the criteria analysis, cities can assign the urban ecosystem to one of the following IUCN Red List categories:

- **CR (Critically Endangered):** Extremely high risk of collapse.
- **EN (Endangered):** Very high risk of collapse.
- **VU (Vulnerable):** High risk of collapse.
- **NT (Near Threatened):** Close to qualifying for a threatened category.
- **LC (Least Concern):** Low risk of collapse.
- **DD (Data Deficient):** Inadequate data to make an assessment.

