



Convention on Biological Diversity

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Item 13 of the provisional agenda*

Cooperation with international organizations and bodies established under other conventions

Report by the United Nations Human Settlements Programme

Note by the Secretariat

1. The Executive Secretary is pleased to circulate herewith, for the information of participants in the sixteenth meeting of the Conference of the Parties to the Convention on Biological Diversity, a report by the United Nations Human Settlement Programme (UN-Habitat).
2. The report provides information on the implementation of resolution 2/4 on biodiverse and resilient cities: mainstreaming biodiversity and ecosystem services into urban and territorial planning, adopted by the United Nations Habitat Assembly on 9 June 2023.¹
3. The report is circulated in the form and language in which it was received by the Secretariat.

* CBD/COP/16/1.

¹ [HSP/HA.2/Res.4](#).

REPORT BY THE UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME

30 September 2024

I. INTRODUCTION

1. Urban land expansion is a major driver of the loss of natural habitat for biodiversity. Over 90% of the cities in the world's 36 biodiversity hotspots are expanding in direct conflict with biodiversity and climate risk. The conversion of natural habitat for human habitation is accelerating, with 290,000 square kilometres of natural habitat likely to be lost to urban growth between 2000 and 2030.
2. These trends are further compounded by the 'land greedy' nature of contemporary urban expansion patterns, yielding a land consumption growth rate (4.84% per year) double that of urban population growth (2.18% per year). Land continues to be consumed even where the urban population is not increasing at all. Due to this loss of nature, 44% of the global gross domestic product in cities is at risk.
3. Cities are recognizing the need to protect landscapes in their vicinity, with approaches such as extending ecological corridors and connecting green patches for biodiversity protection. However, ecosystem restoration cannot keep up with the pace of land degradation, and this requires accelerating preservation and conservation at the interface between cities and nature; often the peri-urban edge.
4. Caring for nature would not only prevent the sixth extinction of non-human species but also prevent the collapse of human settlements whose infrastructure fundamentally depends on the ecosystem services that biodiversity provides. At the same time, most existing spatial planning processes treat built and natural habitats as binary and static, while they are both in constant flux.
5. The United Nations system adopted a common approach to biodiversity that includes a joint commitment to improve the quality of urbanization and limit encroachment. Pro-biodiversity interventions within and beyond cities include not only direct nature-based solutions but also indirect land-sparing measures that prevent the destruction of natural habitat in the first place.
6. The planet needs to shift to systematic, effective and properly targeted interventions of biodiversity preservation and conservation in the face of urban expansion, both present and future. Preventing mistakes before they are visible and too expensive to correct will still require unprecedented effort.
7. In this vein, the United Nations Habitat Assembly, in its second session, approved resolution 2/4² on biodiverse and resilient cities: mainstreaming biodiversity and ecosystem services into urban and territorial planning.

II. REPORT ON THE IMPLEMENTATION OF UN-HABITAT RESOLUTION 2/4 ON BIODIVERSE AND RESILIENT CITIES: MAINSTREAMING BIODIVERSITY AND ECOSYSTEM SERVICES INTO URBAN AND TERRITORIAL PLANNING

² See [HSP/HA.2/Res.4](#)

8. UN Habitat Assembly resolution 2/4 recognizes the mandate of UN-Habitat as the focal point in the UN System for sustainable urbanization and stresses the relevance of the transformative commitments of the New Urban Agenda; inter alia, biodiversity and ecosystem protection, conservation, and sustainable use. It also reaffirms that biodiversity is deteriorating at rates unprecedented in human history and recalls the importance of ecosystem-based approaches for maintaining and increasing resilience and reducing the vulnerability of people and the ecosystems upon which they rely.
9. The resolution recalls General Assembly resolution 77/167³ which encourages, inter alia, relevant organizations to integrate nature-based solutions, ecosystem-based approaches, and other management and conservation approaches into their strategic planning. It recalls UN-Habitat Governing Council resolution 23/17, which encourages Governments to promote urban development patterns that reduce urban sprawl and ecological footprint and undertake coordinated action to promote cities and biodiversity as part of their sustainable urban development strategies.
10. In response, UN-Habitat is encouraging a shift in urbanization that takes into account biodiversity and ecosystem services. In its own advocacy it is promoting elements of the UN Common Approach to Biodiversity⁴, inter alia, action #10 on improving the quality of urbanization and limiting encroachment. It also continues to highlight elements of the Kunming-Montréal Global Biodiversity Framework⁵, inter alia, target #12 on improving the quantity, quality, connectivity, and accessibility of green and blue space in urban areas. It co-organized and participated in the inaugural biodiversity webinar series of the Environmental Management Group.
11. UN-Habitat is also mainstreaming biodiversity through other thematic lenses, resulting in *Nature-based Solutions in Urban and Territorial Planning* and *A Primer for Urban-Rural Linkages and Land*; both of which to be published before the end of 2024.
12. UNHA resolution 2/4 requests UN-Habitat to establish an open-ended international expert advisory group in collaboration with the secretariat of the Convention on Biological Diversity. Once funding is mobilized, the advisory group would oversee the compilation of best practices, assess existing guidelines, identify potential pathways for biodiversity-based livelihoods, and compile innovative methodologies.
13. The resolution also mandates the production of a toolkit for biodiverse and resilient cities. High-profile nature-based solutions have been applied at limited site-based scales, as retrofits to relatively wealthy, mature urban environments. This has left a gap in preservation-related efforts, particularly in fast-growing, resource-constrained contexts.
14. Many developmental decisions are still made based on a dichotomic conception of the natural and built, lack of clarity on where degradation is occurring, inability to predict future conversion, difficulty of assigning the full value of biodiversity, and resistance to cooperating across jurisdictions. As a corollary, UN-Habitat recognizes that policymakers and practitioners—as well as its own staff—need to spatialize challenges to understand where

³ See [A/RES/77/167](#)

⁴ See [CEB/2021/1/Add.1](#)

⁵ See [CBD/COP/DEC/15/4](#)

change occurs, work telescopically between scales, work transversally across sectors, and anticipate and guide change through informed decisions on where and how to develop.

15. In the white paper 'Cities and Nature: Planning for the Future'⁶, UN-Habitat proposed four key actions to support the preservation of biodiversity in and around cities: (a) projecting spatial growth over a specific timeframe to proactively guide urban expansion, (b) predicting land use conflict zones where urbanization and climate change are at odds with biodiversity in real space to pre-emptively intervene, (c) prioritizing areas of most suitability/least harm by preserving natural areas of highest value and directing compact growth to areas of less harm, and (d) preventing wasteful and dangerous land conversion that degrades natural habitat at the peri-urban edge.
16. To address the gaps above, UN-Habitat and The McHarg Center for Urbanism and Ecology at the University of Pennsylvania have developed one tool entitled Hotspot Stoplight. It uses open-source data and a unique workflow combining artificial intelligence and deep learning algorithms to project urban expansion and the risks of biodiversity loss and climate change to 2050 at a scale of 30 square metres. The methodology has been tested in four cities from Madagascar, Malawi, Solomon Islands, and Costa Rica. Data collection and ground-truthing took place in the seven highest at-risk municipalities in the metropolitan region of San José, Costa Rica, in May 2024. The tool has proven to have a high level of assertiveness and has shown to be very relevant for the different stakeholders involved in territorial planning, management and decision-making.
17. The Hotspot Stoplight was conceived upon open data sources, including NASA's Landsat, for nimble deployment in data-scarce cities and modular pairing with other planning tools. Potential benefits include assessment of broad environmental impact, catalyzing or revising master plans, studying land use conflict zones, promoting successful metropolitan planning models, and studying the trade-offs and co-benefits of nature-based vs form-based solutions for biodiversity.
18. A related expert group meeting in San José, Costa Rica convened over 25 experts from around the world, as well as domestic ministries, mayors, and civil society, to discuss challenges and share practices that contribute to more biodiverse and resilient cities. Recognizing that ecological systems typically span two or more political-administrative jurisdictions, and therefore require coordinated decision-making across municipalities, the focus of the meeting was on multi-scalar and supra-municipal planning for prevention-oriented development.
19. The meeting also highlighted the importance of scenario modelling and prospective tools for (1) preventative action to avoid further land use change at peri-urban edges, and (2) enhancement of biological connectivity within city cores, using networks of public space and riverbanks as critical elements of connectivity. Participants also discussed the complexity of balancing densification with quality of life; the impact of administrative fragmentation on territories; challenges and incentives for supra-municipal collaboration; and potential for nature-based solutions to increase connectivity, adaptation, and resilience. Additional specific conclusions for the Costa Rican context were also produced.

⁶ See [UN-Habitat white paper](#)

20. In compliment to the Hotspot Stoplight, UN-Habitat's City-Wide Public Space Assessment tool has added a biodiversity layer to its framework that helps local governments evaluate the network, distribution, accessibility, quantity and quality of their public spaces. It uses a digital questionnaire that can be customized to local contexts and priorities and takes a participatory approach to engaging communities and stakeholders in mapping and analyzing public spaces. Its process (i.e. pre-fieldwork, data collection, reporting, and post-assessment activities) has already supported evidence-based public space strategies and policies. The Assessment is now being tested in the same seven at-risk municipalities in the metropolitan area of San José, Costa Rica, to demonstrate the value of following up a multidimensional metropolitan projection with a fine-grained inventory of priority sites for intervention.
21. UN-Habitat has also been building capacity through technical assistance and guidance to local officials on decision making about where and how to develop with the least risk to planet and people. The Stoplight's projections and mappings have initiated discussions about the spectrum of possible responses (e.g. preservation to creation) and trade-offs (e.g. conservation vs conversion) that undergird evidence-based decisions.
22. In addition, UN-Habitat is making progress on pilot plans and projects for biodiverse and resilient cities. Its Programme Development Branch in collaboration with the McHarg Center for Urbanism and Ecology at the University of Pennsylvania presented the Hotspot Stoplight at the 24th Understanding Risk conference and is discussing with the World Bank how it could be refined and scaled up. Now fundraising for testing and scale-up to regions and watersheds and indicate high-potential project sites that subnational authorities might select. Progress will be reported in a side event at CBD COP16⁷, as well as at an event at the 12th World Urban Forum⁸ in Cairo in November.
23. Lastly, UN-Habitat is identifying options for supporting sustainable investment in biodiverse and resilient cities through outreach to financial institutions and looks forward to sharing information with relevant stakeholders.

⁷ See [CBD COP16 side event programme](#)

⁸ See [WUF12 Arena Event Programme](#)

Annex I

UN-HABITAT REPORTS, POLICIES, GUIDELINES, TOOLS, PROJECTS, EVENTS, AND PRODUCTS

Reports

UN-Habitat. 2022. *Cities and Nature: Planning for the Future*. Nairobi. https://unhabitat.org/sites/default/files/2022/12/white_paper_cities_and_nature_rev2.pdf

UN-Habitat. 2022. *Managing Urban-Rural Linkages for Biodiversity: An Integrated Territorial Approach*. Nairobi. <https://unhabitat.org/managing-urban-rural-linkages-for-nature>

Tools

UN-Habitat. 2024. *Hotspot Stoplight*. https://linktr.ee/UNHabitat_Biodiversity

UN-Habitat. 2022. *City-wide Public Space Assessment Toolkit: A guide to community-led digital inventory and assessment of public spaces*. Nairobi. <https://unhabitat.org/city-wide-public-space-assessment-toolkit-a-guide-to-community-led-digital-inventory-and-assessment>

UN-Habitat. 2024. *Our City Plans*. Nairobi. <https://ourcityplans.org/toolbox>

UN-Habitat. 2024. *Nature-based Solutions in Urban and Territorial Planning*. Nairobi. (forthcoming)

UN-Habitat. 2024. *A Primer for Urban-Rural Linkages and Land*. Nairobi. (forthcoming)

Projects

Cities and nature: planning for the future along a spectrum of ecological preservation, conservation, restoration, and creation. https://linktr.ee/UNHabitat_Biodiversity

Events

Expert Group Meeting on Territorial Strategies for Urban Biodiversity: Multiscale Planning for Prevention-Oriented Development (2024). https://linktr.ee/UNHabitat_Biodiversity
