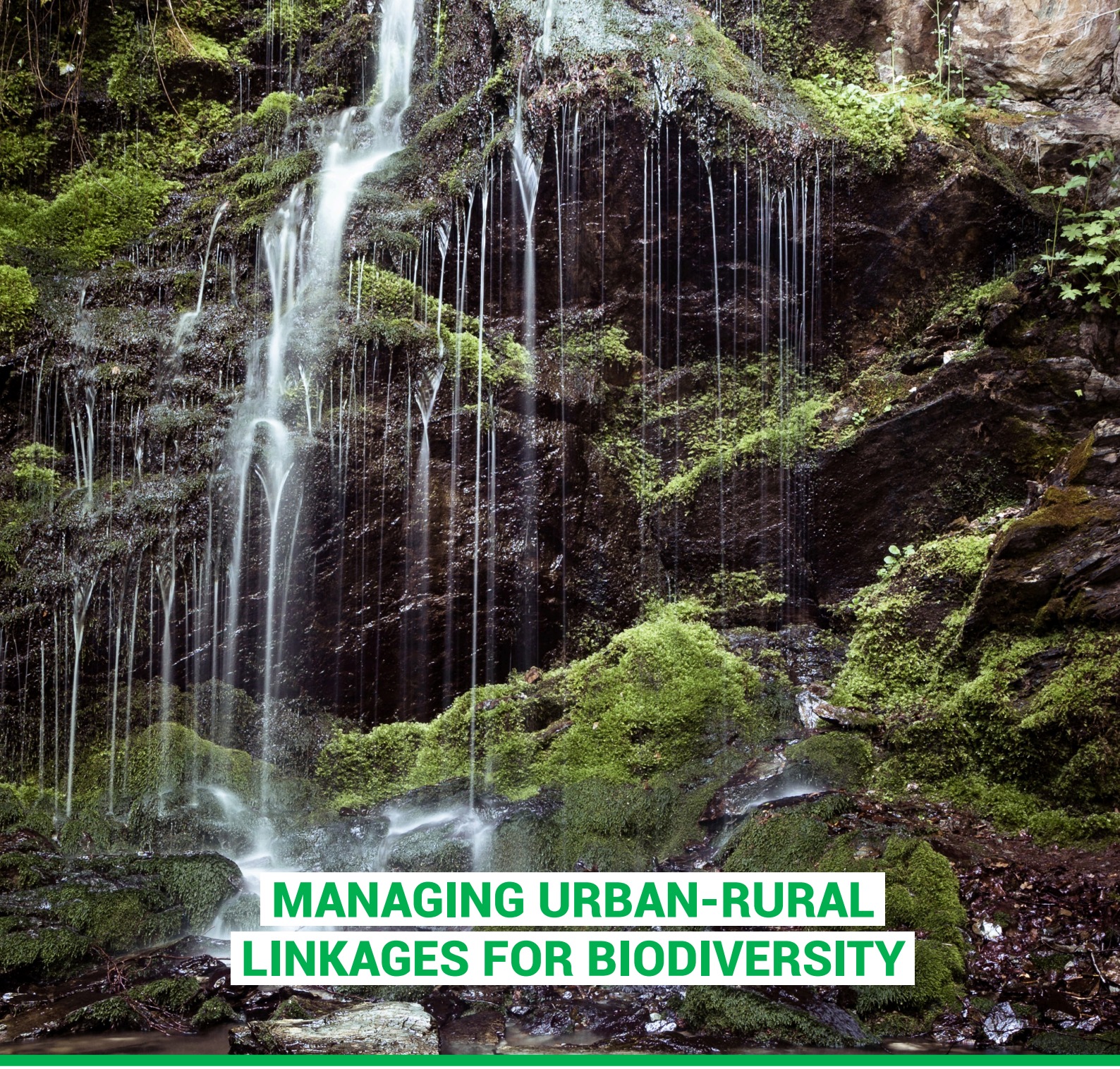

MANAGING URBAN-RURAL LINKAGES FOR BIODIVERSITY

An integrated territorial approach

Position Paper for CBD COP 15 to be completed with final language for Global Framework for Biodiversity (GBF) targets

UN HABITAT
FOR A BETTER URBAN FUTURE

Convention on Biological Diversity

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MANAGING URBAN-RURAL LINKAGES FOR BIODIVERSITY: AN INTEGRATED TERRITORIAL APPROACH

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Executive Summary

Launch of the Post-2020 Global Biodiversity Framework requires an integrated territorial (both urban and rural) approach for the sustainable management of biodiversity. Linkages between urban processes and rural transformation across municipalities, countries and world regions are essential for biodiversity conservation.

Urban-rural linkages are constituted by reciprocal and repetitive flows of people, goods and financial and environmental services between specific rural, peri-urban and urban locations. To mainstream biodiversity across the urban-rural continuum and connect nature in cities with nature in regions, these flows must respect, conserve and steward biodiversity.

Addressing processes of urbanization and rural transformation across municipalities, countries and world regions are essential for biodiversity conservation. Managing both the direct and indirect drivers of biodiversity loss – particularly resource use and consumption processes in urban areas – requires an integrated policy framework to guide actions at the local and subnational level.

Such an integrated framework for mainstreaming biodiversity across the urban-rural continuum can be found in the combination of the *Urban-Rural Linkages: Guiding Principles (URL-GP) and Framework for Action to Advance Integrated Territorial Development* launched in 2019 by UN-Habitat and the targets of the Global Biodiversity Framework (GBF) to be launched in 2022 at the UNCBD COP 15.

Managing Urban-Rural Linkages for Nature presents a policy framework for managing urban-rural linkages for biodiversity action. The framework builds from a foundation that includes:

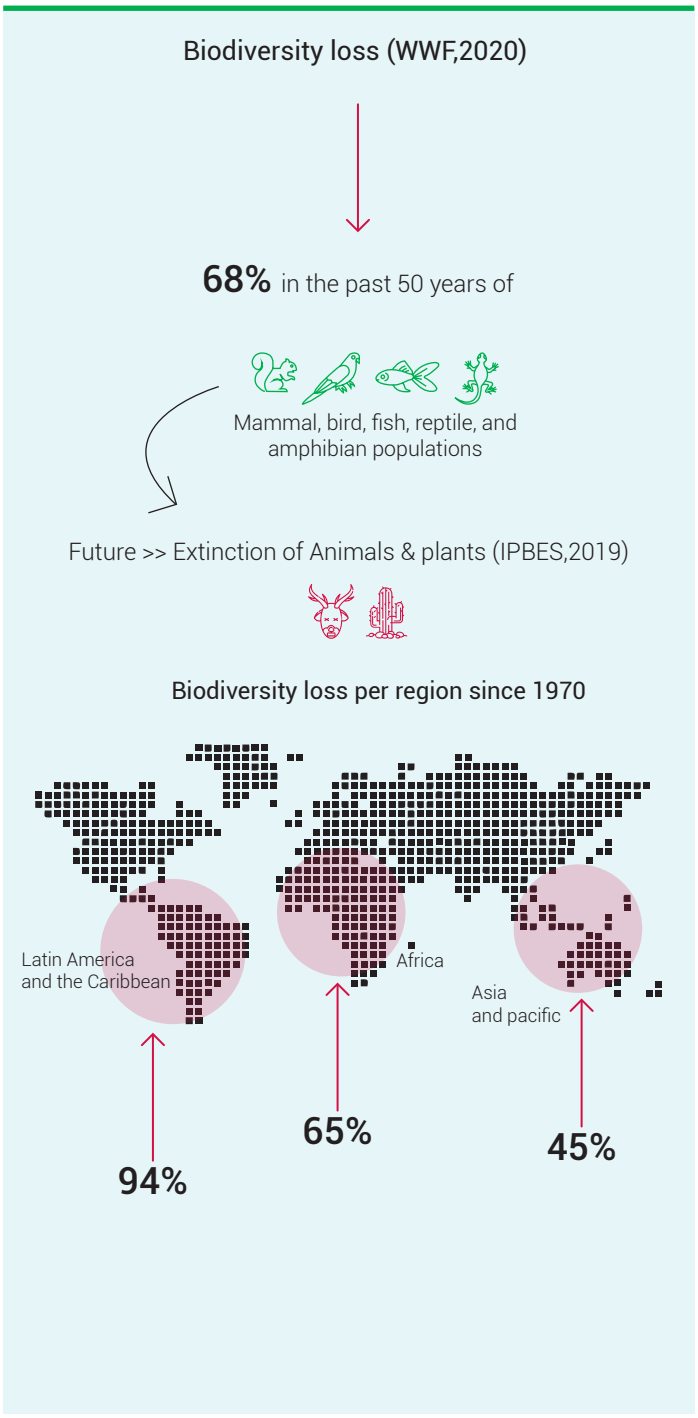
- **Recognizing the effects (actual or potential) of policy regimes and management decisions on territorial biodiversity** across multiple sectors, actors and governance levels in adjacent as well as distant locations.
- **Adopting a territorial approach for biodiversity action using the principles of the URL-GP**, based on the different capacities (starting with subnational and municipal roles for biodiversity governance) and including human and financial resources within and outside territories .
- **Integrating GBF targets in both territorial (in-situ) and flows-based (ex-situ) approaches** for the management of interactions and networks to mainstream biodiversity across the urban-rural continuum, including those interactions and networks that stretch beyond localities or bounded territories.

The ten guiding principles of the URL-GP can frame policy interventions designed to manage urban-rural linkages for the conservation and sustainable use of biodiversity. The principles can guide interventions to incorporate appropriate checks and balances, include territorial actors, promote balanced partnerships, human-rights, and do no harm to both human communities and ecosystems.

The paper addresses 15 of the provisional GBF targets in the context URL principles. This provides a set of actionable entry points for the implementation of GBF by managing urban-rural linkages. This is only a starting point for further development of integrated territorial approaches to address both proximate (in-situ) and distant (ex-situ or telecoupled) urban-rural interactions in an integrated manner.

Urban-rural linkages are key policy arena for biodiversity action and are an avenue for fostering synergies between national and subnational levels of governments in implementing the Post-2020 Global Biodiversity Framework (GBF).

1. INTRODUCTION



Biodiversity is declining globally at rates unprecedented in human history. During the last 50 years, the world has seen an average 68 percent drop in mammal, bird, fish, reptile, and amphibian populations (WWF, 2020). If current development trajectories are maintained, up to one million plant and animal species face mass extinction, many within decades (IPBES, 2019). Nonetheless, biodiversity loss is unevenly distributed, declining at different rates in different regions and territories. In Latin America and the Caribbean, biodiversity loss has been far more significant than in any other region with an average decline of 94 percent since 1970, followed by Africa and Asia Pacific with declining rates of 65 percent and 45 percent respectively (WWF, 2020).

Likewise, the demand and use of natural resources are unevenly distributed across regions. It is estimated that high-income countries account for 74 percent of global excess resource utilization, with the USA, EU countries and UK accounting for 52 percent of the global resource use overshoot. China as an upper–middle-income country is responsible for 15 percent, the rest of the Global South (i.e., the low-income and middle-income countries of Latin America and the Caribbean, Africa, the Middle East, and Asia) are collectively responsible for 8 percent (Hickel et .al. 2022). In an urbanizing world, most of this demand for resources is concentrated in cities.

The geographical patterns of biodiversity loss and demand for materials show that, though some countries and regions concentrate most of the material consumption driving biodiversity loss, the impacts on biodiversity are felt in regions far away from where the consumption occurs.

The intersection of biodiversity, urbanization and rural transformation is increasingly important for the achievement of the Post-2020 Global Biodiversity Framework, the Sustainable Development Goals (SDGs) including SDG 11, and the New Urban Agenda.

At the same time, it has been well established that resource utilization is the biggest single factor in driving biodiversity loss (IRP, 2021). Resource utilization (through processes of extraction and processing of materials, fuels and food) accounts for more than 90 percent of total global biodiversity loss; within this, 80 percent of land-use-related biodiversity loss is attributed to biomass extraction (IRP, 2019).

Through increasingly long-distance interactions and resource exchange, high-income countries (and in particular urban centers) have displaced their extractive frontiers, thereby shifting the environmental burden and costs of producing and consuming goods, including deforestation and CO^2 emission, to territories elsewhere in poorer nations (Balvanera, P., and A. Pfaff, 2019). These resource-related exchanges and flows have resulted in particular urban-rural linkages between territories in the Global North and Global South with unequal environmental exchanges and economic outputs for interlinked territories.

These linkages among territories highlight that processes of environmental change and biodiversity loss in rural areas and natural spaces (particularly in the Global South) are often tied to processes and decisions taken elsewhere (in consumption centers of the Global North). For this reason, an urban-rural management framework that aligns in situ and ex situ measures for the conservation and sustainable use of biodiversity is necessary for successful implementation of the post-2020 global biodiversity framework (GBF).

The United Nations Human Settlements Program (UN-Habitat) and the Convention on Biodiversity (CBD) have been collaborating on the challenges and opportunities that rise from this intersection in the context of urban-rural linkages (URLs) since the launch of the New Urban Agenda (NUA) in 2016.

This intersection is addressed in key global agendas. In the NUA, biodiversity is mentioned in the section calling for "environmentally sustainable and resilient urban development" where conservation of biodiversity requires policies and actions extending beyond cities. Member States agreed that:

> We recognize that cities and human settlements face unprecedented threats from unsustainable consumption and production patterns, loss of biodiversity, pressure on ecosystems, pollution, natural and human-made disasters, and climate change and its related risks, undermining the efforts to end poverty in all its forms and dimensions and to achieve sustainable development. Given cities' demographic trends and their central role in the global economy, in the mitigation and adaptation efforts related to climate change, and in the use of resources and ecosystems, the way they are planned, financed, developed, built, governed and managed has a direct impact on sustainability and resilience well beyond urban boundaries. (NUA, para 63, 2016)

From the 1992 launch of the CBD on the occasion of the United Nations Conference on Environment and Development (UNCCD, 1992) and in each of the three UN-Habitat conferences (Habitats I, II and III) from 1976 to 2016, the importance of urban-rural linkages has been recognized. Nonetheless, frameworks and tools for integrated management of urban and rural approaches to biodiversity conservation and ecosystem restoration have only become more urgent in recent years as urbanization and biodiversity also converge in the context of the climate crisis. This is a gap that this paper seeks to redress.

The primary question guiding analysis is whether two important frameworks that can be integrated in order to give local, subnational and national governments a basis for the integration of urban and rural approaches to conservation of biodiversity. The two frameworks are the Urban-Rural Linkages Guiding Principles (URL-GP) and Framework for Action (UN-Habitat, 2019) and the Post-2020 Global Biodiversity Framework (GBF) with targets for actions to mainstream biodiversity.

This position paper examines these two frameworks for developing strategies and policies addressing urban-rural linkages constituted by flows of natural resources and ecosystem services across territories for the sustainable management of biodiversity.

The paper is organized in three sections. Section 1 describes two related but different scenarios for governance approaches needed to manage urban-rural linkages for biodiversity:

- A **territorial approach** for managing resource-based interactions and their biodiversity impacts across contiguous urban and rural jurisdictions in an integrated manner, and

- A **flow-based approach** to manage the more long-distance interactions among non-contiguous, and often remote territories, which cannot be encompassed by an integrated territorial framework for contiguous, urban, peri-urban and rural areas.

Section 2 presents the URL principles in the context of biodiversity mainstreaming to provide guidance on the necessary checks and balances for management of urban-rural linkages for biodiversity. In section 3, following analysis of how each of the 10 URL principles can be applied to territorial and flows-based management of biodiversity, 15 targets of the Global Biodiversity Framework are linked to the URL-GP in specific actions for governmental and nongovernmental, civil society and private sector actors.

Mainstreaming urban-rural linkages into planning and development processes across levels of governance can enable transformative action for conservation and sustainable use of biodiversity and for advancing toward socio-environmental justice.

The need for managing these linkages among territories has been evidenced not only for the science-policy body of the CBD, namely Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services of IPBES (Balvanera, P., and A. Pfaff (2019), but also by the Intergovernmental Panel on Climate Change or IPCC, the science-policy body of the United Nations Framework Convention on Climate Change (UNFCC) in its last report (See Dodman et.al., 2022).

The latter highlights the interdependencies between urban processes and flows that reach into rural places shaping natural resource use far from the city, which in turn bring risk to the city when these places are impacted by climate change. Climate change is a direct and major driver of biodiversity loss with potential significant consequences for human settlements and the ecosystem services cities depend upon.

Indeed, all three Rio Conventions recognize the agency of local and subnational governments and the importance of urban-rural linkages. A working paper leading up to the recent COP 15 for the United Nations Convention on Desertification (UNCCD) similarly focuses on urban-rural linkages and ecosystem restoration (UNCCD, 2021). Leading up to the CBD COP 15 the outcome of WorldBio 2022 notes that "the implementation of the CBD can be accelerated and improved as a consequence of the adequate management of territories and the linkages that connect urban centers of production and consumption with rural, productive land- and seascapes and conservation areas".

The approach taken in this position paper has included a detailed review of the URL-GP and development of the Global Biodiversity Framework and cases of local and subnational governments that have adapted or embedded the principles and actions from these frameworks in selected countries. There are existing components of an integrated framework and a growing number of local and subnational cases of defacto integration, a few of which are summarized in this paper.

The work on tools for cities and nature are advancing rapidly, building on summits on biodiversity for local and regional governments at 6 of the past CBD COPs, with the 7th in December 2022 parallel to the Montreal COP 15.

In 2022 the WorldBio2022 process contributed many important experiences of subnational and local governments (SNLGs) working together. This adds to the CitiesWithNature and RegionsWithNature platforms created by ICLEI, the Regions4 Biodiversity Learning Platform, and the Group of Leading SNLGs towards Aichi Biodiversity Targets and the Edinburgh Process. UN-Habitat will present its White Paper on Cities and Nature at COP 15 which strengthens the argument for urban action on biodiversity to limit and manage the encroachment of urbanization on Nature (UN-Habitat, 2022).

In the build-up to COP 15, the Edinburgh and WorldBio processes have brought the implementation of the Global Biodiversity Framework (GBF) by SNLGs to an operational level that will be showcased in COP 15 in Montreal. The outcome document of WorldBio hosted by the State Government of Sao Paolo, Brazil, states:

> **"The implementation of the CBD can be accelerated and improved as a consequence of the adequate management of territories and the linkages that connect urban centers of production and consumption with rural, productive land- and seascapes and conservation areas"** *(WorldBio, 2022)*

Further collaboration, research and joint work streams are needed between leading cities and subnational governments with city networks such as UCLG, ICLEI, Regions4 etc., to further develop, refine and apply tools for the integrated territorial management of biodiversity by managing urban-rural linkages. As stated in the conclusion of the paper:

2. THE URBAN-RURAL LINKAGES - BIODIVERSITY NEXUS

2.1. Nature is the Foundation for Territorial Sustainability

A Territory is a space for human governance that includes human settlements of different sizes and unbuilt landscapes of cultivated, managed and wild lands. Territorial sustainability is a set of integrated development outcomes that include economic prosperity for all, integrated landscape and natural resource management, improved food and nutrition systems and inclusive access to public and private services. (adapted from Forster et. al., 2021a).

Biodiverse ecosystems in stable balance with both rural and urban human communities are fundamental to territorial sustainability (UNCCD, 2021).

Biodiversity (short for "biological diversity") is not just about cute and charismatic wildlife; it is the living, breathing web of all life (Guterrez, A. 2021), comprising the variety of life forms on Earth, including diversity within species, between species, and of ecosystems (CBD, 1992). Biodiversity enables ecosystems to flourish and supply a wide variety of services to all non-human and human communities.

Ecosystem services - also nature's contributions or gifts to humanity- refers to all the contributions, both positive and negative, of living nature to the quality of life of people. These services include regulating and supporting contributions, material contributions and non-material contributions (IPBES, 2019). Among regulating and supporting contributions are, for instance, filtering pollutants to provide clean air and water and sequestering carbon.

Material contributions include provisioning services, which include the vast range of goods that societies obtain from ecosystems in the shape of food, feed and fuel, materials, medicines, and genetic resources. And non-material contributions include the cultural services that people obtain from nature such as inspiration and learning, emotional sustenance and recuperation, physical and psychological experiences, and those that support cultural identities. All people, directly or indirectly, depend on ecosystem goods and services for their daily needs and engagements. The continued provision of ecosystems good and services underpin human existence, health, as well as the prosperity and sustainability of any community and territory.

Biodiversity is essential for preserving ecosystem integrity or ecosystem functioning (Hanley and Perrings, 2019). It crucially sustains the abundance, extent and condition of ecosystems and biodiversity is needed to secure the continuous flows of ecosystem goods and services. Changes in biodiversity affect both the supply or ecosystem productivity (Dasgupta, (2021) and the resilience of ecosystem services (Millennium Ecosystem Assessment, 2005). Biodiversity loss triggers cascading and/or cumulative effects that undermine ecosystem health and the ability to provide goods and services to all people, especially to those most directly dependent on biodiversity and ecosystems.

The vital role of biodiversity makes its loss much more than an environmental problem.

In the processes related to urban growth and expansion, the loss of biodiversity has profound impacts on the sustainability of towns and cities and the well-being of their inhabitants. Biodiversity loss affects human health, the quality and availability of food, livelihoods, income, and migration. Its loss can harm the human rights of multiple communities, including urban and rural dwellers, Indigenous Peoples and especially the poor and those in vulnerable situations. Biodiversity loss has and will continue to trigger or exacerbate the crises of health, hunger, political conflicts and climate change.

In the 21st century biodiversity decline is accelerating faster than it has at any other time in human history as reported by the International Science-Policy Panel on Biodiversity and Ecosystem Services (IPBES, 2019). This trend undermines progress towards achieving 80 percent of the SDGs, related to poverty (SDG 1), hunger (SDG 2), health (SDG 3), water (SDG 6), cities (SDG 11), climate (SDG 13), oceans (SDG 14) and land (SDG 15). Reversing biodiversity loss and restoring ecosystems while meeting peoples' needs through biodiversity, sustainable use and benefit-sharing is the basis for any long-term territorial sustainability.

2.2. Why are Urban-Rural Linkages Important for Biodiversity?

Historically, the productive systems of cities – including agriculture, forestry, fisheries, infrastructure, and energy sectors - tended to capitalize on the extraction of natural resources available within their vicinity or territories. The basic provisioning (feeding, watering and energy supply) of cities was limited by the restricted productive capacity of a relatively confined hinterland, which forced cities to be ***defacto*** "sustainable". Although some cities were centers of long-distance trade, the security of urban economies crucially depended upon the qualities of a localized metabolic support system, in which local ecosystems and derived goods and services such as food, water and energy supply - particularly firewood – were most prominent. In other words, cities were bioregionally defined (Harvey, 1996).

With successive waves of innovation after the 16th century - in transport, communication, and later telecommunications - cities were able to increase levels of exchange over longer and longer distances. Flows of goods, people, capital and services across land and sea allowed cities, and different territories at various scales – including regions and countries -- to break their dependency upon relatively confined and proximate bioregions, as well as from highly localized constraints, opening new possibilities for urban growth. Thus, urban systems started to have complex socioeconomic and environmental interactions (or "telecoupling interactions") with rural and natural systems over distances, leading to the coupling of urban and rural areas across regions (Carrasco et al. 2017; Balvanera, Pfaff, 2019).

The linkages between urban areas and ecosystems/territories/landscapes outside cities - or "urban-rural linkages"[1] - have become crucial for sustaining cities and are a fundamental feature of modern and current urbanization processes.

1 The designation "rural" - in urban-rural linkages - encompasses all non-urban spaces with which human settlements from villages to metropolises have interdependencies. These non-urban or mostly unbuilt spaces comprise different ecosystems that persist along a gradient of change between extremes of completely altered or managed ecosystems, such as croplands, rangelands, and peri-urban areas, to wild or intact ecosystems.

Interactions between rural and urban areas include trade and business relations, commuting and migration of people, provisioning of services, leisure, tourism, foreign direct investments, and other flows of goods, materials, culture and information. Cities have greatly benefited and even thrived from ecosystem goods and services provided by means of their linkages with rural areas outside their boundaries, near and far. Urban growth and material consumption in cities has been sustained by means of urban-rural linkages, through which cities draw upon a variety of hinterlands and ecosystems from all over the world. At present, in our interconnected world, it is unlikely than many urban areas would be able to satisfy resource demands and meet the needs of their citizens from proximate ecosystems within their administrative boundaries.

Furthermore, through their linkages with rural areas, urban systems and communities have been able to displace the social and environmental impacts of resource utilization and consumption to ecosystems and territories elsewhere (usually territories with weaker governance for nature). In doing so, urban communities may increase alternative but more distant sources of supply in the face of environmental degradation. For example, urban demand for foods that are not in season or grown in near rural areas, may generate impacts of large-scale monocultures of a few export crops in countries far from their markets. This long-distance urban-rural dependence extends the extractive frontier of urban areas.

In contrast, rural dwellers in poorer nations are a lot closer to the landscapes on which they vitally rely.

While consuming fewer resources than urban communities in high-income countries, rural communities also have fewer choices in the face of the degradation of local ecosystems –compounded many times by the linkages with distant urban systems.

In this way, urban-rural linkages have allowed cities to grow and sustain urban demands over time but also have played havoc with biodiversity and ecosystems in rural areas and natural spaces.

Market-driven establishment of urban-rural linkages has brought negative impacts (or externalities) for biodiversity in rural and natural spaces. These externalities, or "spillovers" have to be integrated and accounted for in decision-making process at urban and rural levels. In policy formulation the consideration of human-nature interactions across spaces is often lacking (Balvanera,and Pfaff, 2019).

Understanding and improving the management of urban-rural linkages can bridge the environmental degradation of remote rural areas and natural spaces. This happens only with urban actions and decision-making at various levels, including the public and private sectors in cities. Improved urban-rural linkages can respond to the social and environmental transformation of rural areas (including biodiversity loss and ecosystem degradation). Urban and rural are inextricably connected in processes of social and environmental change tied to urbanization, including increased consumption levels and demands for natural resources. This underscores the need for an integrated urban-rural approach for the conservation and sustainable use of biodiversity simultaneously at both a global and territorial level.

2.3. Interlinked Territorial Sustainability[2]

Over the last few decades, trade and trade liberalization have led countries - and regions within countries - to specialize in those products where they have a comparative advantage[3]. This specialization for national, regional and global markets has led to geographies characterized by some territories becoming net-exporters of natural resources (materials and biomass) while others became net-importers (Dasgupta, 2021). On a global level, low-income countries have specialized in export of primary products (coffee, tea, sugar, timber, fibers, palm oil, and minerals), becoming net exporters of materials and biomass while wealthier countries specialized in high value-added product development and management activities, becoming net importers of primary materials (IRP, 2019) with comparatively higher consumption rates (Carrasco et al., 2017).

Specialization in economic activities for export by countries and regions shifted development trajectories, creating different but interconnected "development pathways for nature"[4]. Although economic development - even for high-income countries - occurred at the expense of local ecosystem goods and services, development trajectories shifted in high income countries after trade and governance increased imports of natural resources from low-income countries (Balvanera, P., and A. Pfaff. 2019).

High income countries were more able to "off-shore" the adverse impacts of their consumption on ecosystems and biodiversity, through trade in commodities, goods and services with lower-income countries (Dasgupta, 2021). The importation of products whose production has negative ecosystem impacts in distant rural areas can reduce environmental degradation domestically. This can even lead to a trajectory of stabilization or even recovery of natural stocks in these countries.

However, the reduction of impacts on biodiversity in high-income countries came with costs borne by territories in net export countries. Unlike territories in developed or high-income countries, where there has been stabilization and even recovery pathways for nature, territories – including rural areas and natural spaces - in net exporting countries continue to see declines in nature and ecosystem goods and services (habitat, climate, air, and water quality), even as they continue to export food, fiber, and timber products. Displaced deforestation, pollution, water scarcity, soil loss, and erosion from extractive practices driven by urban consumption have occurred at the expense of ecosystems in many of the most biodiversity rich countries, in particular developing countries (IPBES, 2019).

2 Territorial sustainability is a defined space for human governance that has stable economic prosperity for all, integrated landscape and natural resource management, improved food and nutrition systems and inclusive access to public and private services (GIZ, 2021.) A territory is also sustainable when ecosystems and underlying biodiversity are protected and restored where degraded. (UNCCD, 2021)

3 Besides composition (mix of production), the impacts of trade and trade liberalization on the biosphere tend to be discussed in terms of scale and technique too. For a complete discussion see Dasgupta, P. (2021).

4 Development pathways for nature are defined as the productive stocks or capacity of nature to generate valued contributions, at the time scale of decades. See Balvanera, P., and A. Pfaff (2019).

These two different outcomes for biodiversity and ecosystem services in territories of the Global South and Global North are the result of the interconnected but different development trajectories that interlink territories around material exchanges through. trade and business relations. These territorially differentiated outcomes, both in economic and environmental terms, shed light on the territorial impacts of urban-rural linkages. As a result, there are opposing roles that these linkages have in different territories: (i) stabilizing and restoring biodiversity, ecosystems and territorial assets in net-importing territories, and (ii) degrading biodiversity, ecosystems and territorial assets, mainly in rural areas in developing and low-income countries.

The differential territorial impacts on biodiversity point to the significance for national and global sustainability that territorial and local solutions (e.g. stabilizing and reversing biodiversity loss in a particular place at a particular time) should not create or contribute to unsustainable impacts elsewhere (across scales, places, sectors).

The tension between these differential impacts on biodiversity in the nearby or remote urban-rural interface underscores the importance of integrating urban-rural linkages into decision-making processes to recognize the effects (actual or potential) of governance and management decision on both proximate and distant territories.

2.4. The Global and Territorial Impacts of Urban-Rural Linkages on Biodiversity

Currently, 50 per cent of the biodiversity loss associated with consumption in developed economies is estimated to occur outside their territorial boundaries (Dasgupta, P.2021). Between one quarter and one half of the environmental impacts (carbon dioxide emissions, chemical pollutants, biodiversity loss, and depletion of freshwater resources) from consumption are felt in regions other than where the consumption occurs (IPBES, 2018a as cited in Balvanera and Pfaff, 2019). Furthermore, 33 percent of biodiversity impacts in Central and South America and 26 percent in Africa can be attributed to consumption in other regions (Marques et al, 2019, as cited in OECD, 2019).

While these numbers do not disaggregate urban from rural consumption, most global consumption concentrates in cities. By inference, urban consumption drives biodiversity loss, and urban-rural linkages are not only a local territorial matter, but are important also across regions and countries globally.

To underscore this point, 600 cities generate 60 per cent of global GDP[5]. While 380 out of these 600 are in developed countries, generating 50 per cent of global GDP, 220 are in developing regions with China's cities generating 4 per cent and Latin America's largest cities another 4 per cent (Dobbs et al. (2011).

Alongside the long-distance impacts of urban-driven resource utilization and consumption on biodiversity, more proximate interactions – at territorial and landscape levels or across contiguous jurisdictions - also contribute to the degradation of terrestrial and aquatic ecosystems. For instance, environmental impacts associated with consumption in urban spaces, for instance water and air pollution, are felt beyond urban borders and have impact at territorial levels, i.e. in contiguous rural jurisdictions. Downstream dwellers in a contiguous rural area can be negatively impacted and damaged by the pollution of waterways by urban upstream dwellers.

5 Wealth and income are correlated to society's material footprint. See IRP (2018)

3. TOWARDS A POLICY FRAMEWORK FOR MANAGING URBAN-RURAL LINKAGES FOR BIODIVERSITY

3.1. A Territorially Differential Approach for Biodiversity Action

Urban-rural linkages built around flows of resources entail unequal ecological exchanges and differentiated outcomes among interlinked territories. One of these outcomes is the different but intertwined trajectories for nature that interlinked (or coupled) territories can follow. While some territories can enter into declining trajectories for nature (driven by the direct exploitation of natural resources and associated processes, such as land-use changes and pollution), other territories can enter into stabilizing and restoring trajectories for nature at the expense of degrading biodiversity and ecosystems of the first ones[6]. This geographical pattern can be seen across several scales: on a global scale with high-income countries and low-income countries entering into different but interlinked trajectories for nature, but also on a country or regional scale with subnational territories experiencing the same interlinked but disparate trajectories for nature.

These differentiated territorial outcomes of urban-rural linkages have enormous implications for the governance of nature, and therefore for biodiversity policies at a territorial level. Therefore, a framework for the sustainable management of biodiversity should consider the differentiated territorial characteristics that emerge from their linkages with other territories.

The following two scenarios are proposed as entry points for the design of environmental and biodiversity policies with a territorial dimension[7].

- Autonomously or "self-governed territories for nature"[8]**:** These territories are net-importers of materials and biomass. Ecosystems elsewhere - outside territorial boundaries - sustain the material use and natural resources consumption in these territories. Therefore, these territories can offshore the adverse impacts of consumption on ecosystems and biodiversity outside their territorial boundaries and enter into stabilizing and restoring trajectories for nature.
- Also, it is more likely that the territorial/ landscape/ecosystem assets are less affected by (consumption) processes driven outside their territorial jurisdictions and by decisions taken remotely. Therefore, actors in these territories have greater autonomy to manage local ecosystems and enjoy greater sovereignty over natural resources. The sustainable management of local nature in these territories can be mainly done under territorial institutions and place-based policies – envisioned for delimited territories (bounded by administrative or functional boundaries).

6 See Balvanera, P., and A. Pfaff (2019) for a complete discussion on interlinked territorial trajectories for nature.

7 The two types of territorial governance for nature described here are often found in the same territory or landscape or city region, but for the sake of articulating their differences, they are treated here separately.

8 See IPBES (2019) for a more detailed discussion of territories where governance for nature is expressed in terms of self-governance

- Nevertheless, the remote environmental impacts of these territories – due to their urban-rural linkages with territories elsewhere - entail a "remote environmental responsibility" (Marques, et al., 2019). Thus, the decision-making processes of actors in these territories should include the linkages and the long-distance interactions impacting biodiversity in other territories. Managing these remote interactions demand a complementary approach, based on flows, so decision-making processes can start accounting for the impact on ecosystems elsewhere.

- **Globally governed or territories governed by others for nature:** These territories are net exporters of biomass and materials. Ecosystem goods and services of these territories sustain consumption processes elsewhere. And thus, ecosystems and biodiversity in these territories are impacted by processes and decisions outside territorial boundaries. Therefore, nature in these territories enters declining trajectories in part due to (long-distance) linkages with other territories. Thus, nature in these territories is partially governed by others.

- In this scenario, all-encompassing territorial measures or institutions are insufficient to preserve ecosystem integrity, for the scale of the spatial framework drawn by the long-distance interactions impacting ecosystems in these territories is too big.

  These remote interactions and linkages demand a complementary approach based on flows rather than bounded spatial frameworks.

These two scenarios point to one primary consideration for managing urban-rural linkages for the conservation and sustainable use of biodiversity (as well as for any other territorial interventions).

> **Territorial responses for biodiversity and ecosystem restoration must consider the degree of autonomy or "telecontrol" of a territory**.

This differentiation across territories should guide biodiversity strategies and action plans, policy, and investment, as well as negotiation among actors that will differ significantly if a territory's biodiversity is more remotely governed or more self-governed.

The importance of considering the varying degrees of autonomy (or telecontrol) in biodiversity governance across territories points to the importance of integrating of urban-rural linkages into decision-making processes, as well as of the importance of building institutional capacities to effectively manage urban-rural linkages for the conservation and sustainable use of biodiversity. Therefore, their management should be at the core of biodiversity strategies and action plans as it has the potential to change the governance conditions of a territory.

3.2. Managing Urban-Rural Linkages for Biodiversity Action

While some urban-rural linkages can be the result of interaction among contiguous territories - across the urban-rural continuum - and do not jump or skip geographical scales, other urban-rural linkages are the result of long-distance interactions that jump or skip geographical scales. While the former can be managed by territorial approaches and institutions, the latter escape territorial jurisdiction, stretching over long distances that cannot be encompass by spatial frameworks.

Furthermore, the heightened role of long-distance interactions driving biodiversity loss – across world regions as well as within and between countries - points to the importance of considering governance arrangements to manage these interactions. The following section propose two approaches for managing urban-rural linkages for the sustainable management of biodiversity.

3.2.1. Managing urban-rural linkages with territorial approaches

In the autonomous scenario, urban-rural linkages are the result of human activities or material flows, for instance water flows or commuting patterns, that unfold or circulate across contiguous jurisdictions, between municipalities or local governments across urban and rural areas. These interactions and flows can be mapped in a two-dimensional plane. Hence, these interactions, constituting "territorial urban-rural linkages" unfold in a space of governance that is continuous and has a material coherence and functionality - a unifying feature defined by a flow or interaction across the urban-rural continuum (Woods and Heley, 2017).

Observed interactions or flows, such as people and commodities as well as environmental interactions, such as food, water, waste, natural resources, across contiguous urban and rural areas define their own spatial frames. These frames or spaces of governances might be aligned with existing administrative jurisdictions or give rise to new territorial configurations, for which specifically constructed administrative jurisdictions can be institutionalized. Partnerships or amalgams of local government bodies might be conformed to manage new functional territories, but also new "supra-local forms of governance" with their own powers, such as metropolitan areas.

In short, territorial urban-rural linkages can be managed within a bounded territorial frame, with place-based policies, multi-level governance structures, and territorially embedded institutions (Woods and Heley, 2017).

In recent years, there are increasing numbers of subnational and local governments that demonstrate diverse and scalable approaches to manage urban-rural linkages for biodiversity, including approaches under the banners of the bio-circular economy, teleconnectivity, sustainable supply chain management and procurement, integrated urban and territorial planning, integrated landscape management, blue-green corridors, cities and regions with nature, city-region food systems, ecosystem restoration, among others.

Antananarivo, Madagascar

In African countries, rapid urban expansion has threatened the livelihoods and agricultural land uses through conversion to urban land uses. Antananarivo, Madagascar has taken a holistic city region approach to fight poverty and food insecurity while preserving the natural environment. This includes protection of coastal mangrove swamps that buffer storm surges from frequent cyclones. The municipal government, together with local and international NGOs, research organizations and national ministries have integrated urban and rural programmes in market gardening, fruit tree farming, livestock, fisheries, reforestation, agroecology and support for secure tenure (FAO, 2021).

Songyang county, China

The Songyang County, including Lishui City in Zhejiang Province, China has adopted a multi-level governance model for the improvement of urban-rural relations through diverse actions. Traditional rural mountain villages have been rebuilt and smallholder craft industries have been revived. Agricultural production has seen conversion to organic tea cultivation, urban sprawl has been contained and the region is both a domestic tourist destination and an international example of mutually beneficial urban-rural integration for health and sustainable territorial development (UN-Habitat, 2020).

Abuurrá valley, Colombia

The Aburrá Valley Metropolitan Green Belt (MGB) in northwest Colombia is an example of a deliberate effort to coordinate across 10 municipal governments including Medellin, Colombia's second largest city. Three planning pillars were created for ecosystem restoration, infrastructure to connect rural and urban areas, and civic education. Three zones were created from a participatory planning process, an external belt, ecological corridors and an urban-rural transition zone. The MGB is managed under the Aburrá Valley Metropolitan Authority. The city of Medellin also has an advanced city region food system planning process that is integrated with the pillars of the MGB (GIZ, 2021).

Over the last few years, through the Edinburgh and WorldBio processes, subnational governments inclusive of both urban and rural jurisdictions and landscapes are showcasing multilevel governance of biodiversity parallel to and contributing to the Global Biodiversity Framework. Among the many examples of multi-level, whole of government approaches to manage blue and green corridors providing multifaceted benefits to the environment, to social solidarity and economic opportunity are the **Province of Quebec** in Canada with the City of Montreal, host to the secretariat of the CBD, the Arco Verde of **Madrid**, Spain, and a plan to restore 1.5 million hectares of native vegetation in the State of **Sao Paolo**, Brazil (WorldBio, 2022).

3.2.2. Managing urban-rural linkages with flow-based approaches

Unlike territorial flows and interactions across contiguous jurisdictions, there are flows and interactions that jump or skip geographical scales. These interactions are part of relational networks that stretch beyond localities or bounded territories and bring close territories in terms of relations although they might not have geographical proximity, linking, for instance, urban and rural places that are not physically adjacent.

From this relational perspective, territorial actors (either rural or urban) can be engaged in social and economic flows and relations that transcend territorial boundaries, connecting distant places. Likewise, changes in land uses and direct exploitation of natural resources at local and territorial levels, may be driven by international production networks with large spatial extension. Therefore, these interactions are no longer under single territorial institutions, but are the subject of "multiple, flow-anchored governance arrangements" (Gentry, 2014, cited in Friis & Nielsen 2014).

This demands a reconfiguration of institutions, governance, and policy frameworks to display not only territorial, but also "relational features" (Woods and Heley, 2017), as well as mainstreaming "process-based approaches" to capture the impacts of urban activities in far-off or remote rural places, and vice versa, by linking places through their processes (Seto et al. 2012, as cited in Friis & Nielsen, 2014).

The governance arrangements for managing these urban-rural linkages are commonly controlled by partnerships among actors in specific networks. These partnerships usually involve local government bodies, but also private and civil society organizations. In other cases, partnerships can be privatized regulatory structures, involving private corporations and third-party certification bodies, rather than state-sanctioned government.

Moreover, in these governance models, local government actors have the legitimacy and capacity to act because they are grounded bounded territories and use cooperation and collaboration with other actors and agencies to manage relations that transcend territorial government (and rural-urban) boundaries (Woods and Heley, 2017). For interactions that transcend national boundaries, national governments appear as crucial actors and mulit-level governance arrangements might be also necessary to coordinate policy areas under different competencies (e.g. trade and land use policy, the former usually an attribution of national governments, and the latter is most commonly a competence of local governments). These governance arrangements can be identified with regard to elements of natural resources management, ecosystem services, or food provision including commodity and supply chains.

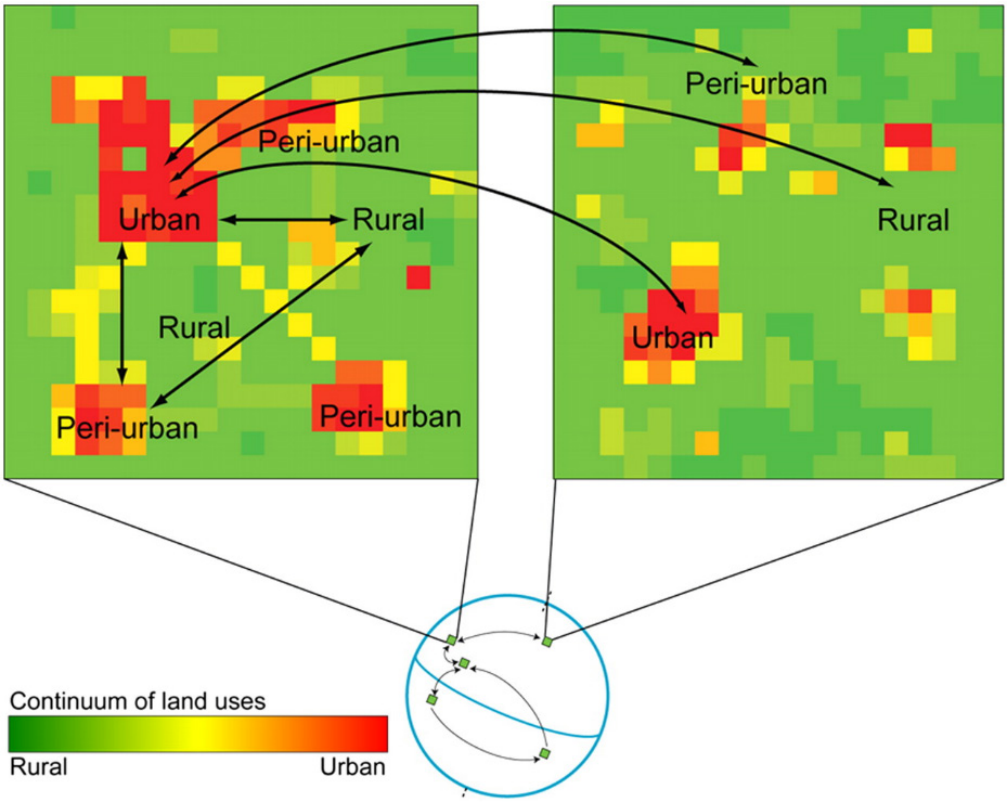


Figure 1. Linkages between urban and proximate and distant ecosystems demand different approaches (adapted from Seto et al. 2012)

Biodiversity governance arrangements seeking to manage interactions between urban and rural areas that are spatially distant, but relationally connected (by long-distance interactions), are still predominantly marked by sectoral approaches. On the other hand, cases adopting a territorial approach (at the city or regional level) to manage urban-rural linkages among distant territories, positively impacting biodiversity, are rather few.

Recently, the European Commission has recognized that the production of commodities imported to the EU, such as soy, beef, palm, oil, wood, cocoa and coffee, is linked with the expansion of agricultural land, and thus with the loss of habitat by deforestation and forest degradation in territories far-off from the territorial borders of the EU. As major consumer of these commodities linked to deforestation, the EU has recognized its (partial) responsibility. Therefore, the Commission has proposed a Regulation to minimize EU-driven deforestation and forest degradation, aiming to bring down biodiversity loss (EU Commission, 2021).

In the context of food systems and the convergence of food, climate and health crises, there are efforts to link **public food procurement** to sustainable food production that provides healthy fresh and minimally processed foods. A network of agroecological producers are engaged with cities in Spain that have signed the Milan Urban Food Policy Pact supporting agroecological farming that embrace crop diversity and agroforestry that can be more biodiversity friendly.

3.2.3. Transformative governance: urban-rural linkages for biodiversity

Although the power of institutions and organizations for taking biodiversity action resides in territories, and traditionally has been bounded by governmental or politico-administrative borders, this power is increasingly challenged by interactions and networks that escape territorial control and jurisdictions.

As a result, biodiversity governance is now also subject to a global context, and interactions across and beyond territorial jurisdictions -including national- might have spillover effects that impact biodiversity at a territorial level (in particular territorial jurisdictions) and challenge territorially bounded policies and interventions for biodiversity. Yet, interactions and networks that stretch over territorial boundaries can be also managed to support the effectiveness of territorial biodiversity strategies and action plans. Therefore, biodiversity strategies and action plans should incorporate management of urban-rural linkages for the effective conservation and sustainable use of biodiversity.

Mainstreaming urban-rural linkages into decision-making processes helps to account for the unsustainable impacts of policies and strategies elsewhere (across scales, places, and sectors). In many instances a hybrid approach (considering urban-rural interactions across contiguous jurisdictions and with far-off territories) may be most effective for the successful conservation and sustainable use of biodiversity.

Managing urban-rural linkages for biodiversity is an integrated framework seeking to promote action by:

- Recognizing the effects (actual or potential) of governance and management decisions across multiple sectors, actors and levels on biodiversity in adjacent and far-off territories.
- Adopting a territorial approach for biodiversity action, based on the different capacities (starting with territorial autonomy for biodiversity governance) and resources across territories and jurisdictions.

- Using both territorial and flows-based approaches for the management of interactions and networks across the urban-rural continuum, and those interactions and networks that stretch beyond localities or bounded territories and cannot be managed by all-encompassing territorial measures or institutions.

Enabling this framework for biodiversity requires the transformation of governance structures, as well as of territorial institutions and organizations.

There is the need to accommodate a central role for "flow-related governance arrangements, while still working in combination with territorially based institutions" for effective biodiversity action through the management of urban-rural linkages (Gentry et al. (2014). The goal is to turn towards the institutionalization of governance of urban-rural linkages in ways that support and enable the effectiveness of biodiversity strategies and action plans at territorial levels.

3.3. Urban-Rural Linkages: Guiding Principles for Biodiversity Action

The challenges of integrating urban-rural linkages into planning and development processes where both proximate and distant flows between rural and urban areas exist requires a set of common principles and possible actions. This is necessary as a starting point for agreements between actors and sectors –including governments, donors, distant or nearby consumers, producers at different scales, civil society, NGOs, academic and private sector actors - that may be in one territory or geographically distant.

In 2017, UN-Habitat convened a process to generate a set of principles and actions to manage urban-rural linkages to promote integrated territorial development. The Urban-Rural Linkages: Guiding Principles (URL-GP) and Framework for Action to Advance Integrated Territorial Development builds on both SDG 11 and the New Urban Agenda to achieve sustainable urban and territorial development by encouraging synergies and interactions among urban areas of all sizes, and their peri-urban, and rural surroundings. The principles were developed in a consultative process hosted by UN-Habitat with more than 40 organizations participating, including collaboration with the Secretariat of the Convention of Biological Diversity, the UN Environment Programme (UNEP), ICLEI and Alliance Bioversity International - CIAT, among other organizations and experts concentrating on biodiversity issues (UN-Habitat, 2019).

As the language and considerations of the URL-GP were developed generally, the following paragraphs aim to expand the application of the principles to guide territorial actions and interventions seeking to manage urban-rural linkages for the conservation and sustainable use of biodiversity. The purpose of this effort is to promote coherence, exchange and impact through interventions while ensuring that management of urban-rural linkages for the conservation and sustainable use of biodiversity has appropriate checks and balances. Actions for managing urban-rural linkages with territorial and/or flow-based approaches at territorial levels for biodiversity should be designed and held accountable to these ten principles.

Figure 2. Urban-Rural Linkages: Guiding Principles

3.3.1. GP1. Locally grounded interventions

In the face of diverse local realities, spatially blind and one-size-fits-all policies are doomed to fail. Endogenous factors or local, place-related factors, such as land uses, land ownership, infrastructure, productivity levels, employment rates, as well as institutional factors, determine policy outcomes across regions and territories, although policies may be applied uniformly across an entire country and do not change across territories. This underscores the need for an explicit territorial dimension in policies (see Section 2.1) and to ground interventions in the existing local conditions, needs, assets and knowledge.

Therefore, biodiversity strategies and action plans aiming to manage urban-rural linkages should consider territorial differences and regional disparities while identifying existing local strengths and weaknesses to build on.

Differences in governance across territories are vital in highlighting the importance of the local context to guide the translation of national and global environmental policies and frameworks such as the Post-2020 Global Biodiversity Framework. The implementation of the framework will differ significantly according to territorial differences, starting with differences in the governance of nature due to urban-rural linkages across regions. In this way, such translation should mainstream urban-rural linkages, acknowledging differentiated territorial impacts of urban-rural linkages on the governance of nature and their potential for the effectiveness and efficiency of territorial, including national and subnational, biodiversity strategies and action plans.

3.3.2. GP2. Integrated governance

Strategies and action plans to ensure that biodiversity is used sustainably to meet people's needs requires enabling conditions to support implementation. Among these conditions, "integrative governance and whole-of-government approaches" are required to ensure policy coherence and effectiveness, political will, and recognition at the highest levels of government (CBD/WG2020, 2021).

Advancing towards integrative governance and whole-of-government and whole-of-society approaches for biodiversity action requires integrating urban-rural linkages in territorial organizations, institutions, and formal governance structures. An urban-rural linkages strategy for biodiversity is inherently a multi-sectoral, multi-stakeholder, and multi-level approach.

Using an urban-rural linkages framework can facilitate the institutionalization of integrated governance mechanisms for effective and coherent biodiversity conservation.

Integrated governance of urban-rural linkages results from interactions between urban and rural areas that crosscut and link territories, integrating numerous and diverse actors across spatial scales. -- for instance, between adjacent cities and towns, metropolitan areas or even between urban and rural hinterlands across continents. Analysis of urban-rural flows reveals a convergence of multiple sectors, stakeholders, and levels of government. This can be seen, for instance, in the different levels of decision making involved in the governance of trade flows or tourism. In this way, integrated governance and whole-of-society and whole-of-government approaches for biodiversity strategies and action plans can be leveraged by incorporating thinking and action on urban-rural linkages into governance structures.

Integrating urban-rural linkages into governance structures and institutions is also instrumental to engage ministries and sectors with portfolios traditionally unrelated to the biodiversity agenda with the implementation of biodiversity strategies and action plans.

By integrating urban-rural linkages in these portfolios, the interdependencies of different sectors with biodiversity can be recognized, and thus galvanize action for the conservation and sustainable use of biodiversity while fostering cooperation among sectors. Therefore, urban-rural linkages are a crucial vehicle to integrate biodiversity issues horizontally (across geographically linked areas), cross-sectorally (across actors such as civil society, private sector and academia) and vertically (across levels of governance) for alignment and coordinated joint action on biodiversity.


3.3.3. GP3. Functional and spatial systems-based approaches and GP10. Data-driven and evidenced based

Managing urban-rural linkages for biodiversity strategies and action plans should be based on the ecosystem-based approach. This approach recognizes that ecosystem components and processes, as well as functions and interactions among organisms and their environment, are linked across scales of both time and space[9]. It also recognizes that humans, with their cultural diversity, are an integral component of many ecosystems, as well as the interconnection of ecosystems and programmes of work. This entails that action taken in one location may have unforeseen consequences elsewhere, often far away and many years later (CBD, 2004).

From the ecosystem-approach perspective, management interventions need to be planned to transcend both temporal and spatial scales while considering that impacts on ecosystems are not confined solely to the point of impact, are non-linear, and have associated time-lags. Otherwise, management actions may have limited success if the functional and spatial connections among ecosystems, as well as the spatially remote impacts on ecosystems, are not taken into account.

The ecosystem-based approach, as a functional and spatial systems-based approach, is a sound way to guide action and efforts for the sustainable management of biological resources by managing urban-rural linkages. This approach is instrumental to promote integrative and inclusive territorial planning and policies.

To be inclusive, a framework is needed to foster greater involvement of all relevant stakeholders and technical expertise in planning and carrying out coordinated activities, sharing management roles, or simply exchanging information. A systems approach to integrate both territorial and flow-based approaches to manage urban-rural linkages into management decisions should recognize the effects (actual or potential) of activities on adjacent and distant ecosystems. The ecosystem-based approach should integrate the management of land, water and living resources at a territorial level - across the urban-rural continuum - while considering the impact of interventions outside territorial jurisdictions, as well as the role of interactions that transcend territorial boundaries but impact territorial assets.

Applying functional and spatial systems-based approaches to manage urban-rural linkages for biodiversity should be based on the best information at hand to guide decision-making. In other words, management decisions and assumptions behind these decisions should be made explicit and checked against available knowledge and views of stakeholders. In this sense, the implementation of these approaches requires establishment or improvement of knowledge systems, as well as scientific research, aimed at providing understanding of the interconnections among ecosystems, which transcend urban and rural jurisdictions, and the effect of activities and management decisions on adjacent or territories elsewhere. In this regard, considering all forms of relevant information, including scientific and indigenous and local knowledge, innovations, and practices, is critical to arriving at effective urban-rural and territorially integrated biodiversity strategies and action plans,

9 The ecosystem-based approach is the primary framework for action under the CBD. See Secretariat of the Convention on Biological Diversity (2004)

Furthermore, information products are necessary for communicating with stakeholders, planners, managers and decision makers in biodiversity planning and implementation processes. Facilitating knowledge sharing and ensuring that all stakeholders have an equal capacity to be effectively involved, including access to information, is important for successfully implementing urban-rural linkages strategies for the conservation and sustainable use of biodiversity. This also entails having access to accurate and timely information and the capacity to apply this knowledge. The more the transparent the decision-making is, based on information at hand, the better the ownership of the resultant decisions between partners, stakeholders, and sponsors (CBD, 2004).

It is also important to note that significant knowledge gaps still exist in the context of urban-rural linkages, as well as in the effects of these linkages and the role of faraway actors in territories (For example private actors or governments driving changes in land uses and other direct drivers of biodiversity loss). This demands "adaptive management strategies", which involve learning processes and monitoring systems to support management-feedback processes in the face of absences of information and uncertainties. Good information and monitoring systems, and stakeholder participation, are crucial to guide territorial and urban-rural integrated approaches for the conservation and sustainable use of biodiversity.

3.3.4. GP4. Financially inclusive

Although investment plans in the past tended to manage components of biological diversity either as protected or non-protected, biodiversity investment plans need to overcome this divide (CBD, 2004).

Adopting an urban-rural linkages perspective, both a territorial and flow-based approach, will increase the effectiveness of biodiversity investments.

A territorial approach for public investments – across the urban-rural continuum - allows for encompassing the continuum from intact wild landscapes to ecosystems altered by human activities, overcoming compartmentalized investments on biodiversity according to protected or non-protected criteria. This enhances the functional relationships and processes within and among ecosystems, which are likely to transcend urban and rural jurisdictions. Furthermore, integrating an urban-rural linkages perspective into biodiversity investments allows those investments to flow to actors outside territorial boundaries but who by virtue of their movements and activities contribute to the protection of ecosystem service.

Also, it is indispensable to adopt an urban-rural linkages perspective to fully integrate biodiversity values into economic sectors, especially those that exert the biggest pressures on biodiversity, such as commercial development and housing, agriculture, forestry, fisheries, infrastructure, energy, and mining sectors. Nowadays, hardly any economic sector operates under single territorial jurisdictions, even if these territories encompass several government areas and urban and rural spaces.

To fully integrate biodiversity values into these sectors, and thus make investments more sustainable, it is necessary to adopt a flows-based approach and focus on the networks and supply chains that transcend territorial boundaries.

Closing the gap between available financial resources between urban and rural areas should also guide investment and finance to promote the conservation and sustainable use of biodiversity.

Direct financial flows to rural areas, while removing perverse incentives and subsidies that favor the conversion of land to less diverse systems, can support those actors needing financial support, including local communities and indigenous peoples, which play a key role as stewards of the environment.

3.3.5. GP5. Balanced partnerships and GP9. Participatory engagement

Managing urban-rural linkages for the conservation and sustainable use of biodiversity must foster partnerships, alliances and networks that link urban and rural actors – across various distances. This is an enabling condition for the success of biodiversity strategies and action plans, particularly in those territories that are embedded in global networks of governance and enjoy limited degrees of autonomy and sovereignty for nature. These partnerships or governance networks should involve a wide range of stakeholders such as civil society, the private sector and academic institutions through inclusive and participatory processes that ensure the meaningful participation by Indigenous Peoples and local communities, as well as women and youth groups.

For this, mechanisms should be put in place to recognize the structural barriers and power imbalances that hamper inclusiveness of the whole of society in political and social processes. Measures directed at developing capacities and knowledge should be adopted to empower vulnerable groups and all those at risk of being left behind, ensuring thus their effective participation. These groups include Indigenous Peoples and local communities, smallholders, slum dwellers, children, youth, elders, persons with disabilities, and the forcibly displaced.

The principle of free, prior, and informed consent of Indigenous People and local communities is a necessary mechanism to engage in political dialogue and planning processes and should be respected.

Furthermore, acknowledging that women and girls around the world face a disproportionate burden of costs related to biodiversity loss as well as conservation and sustainable use, and a comparatively low receipt of benefits derived from genetic resources, partnerships and alliances linking urban and rural actors for the conservation and sustainable use of biodiversity should prioritize the needs and interests of all those who identify as women and girls, and recognize the multiple and intersecting ways, depending on ethnicity, social status, caste, sexual orientation, age, and environment, among other factors, in which gender inequalities may be amplified for all genders, and hinder participation (see CBD/SBI/3/L.12, 2022). All this is vital to foster balanced partnership and participatory engagement for biodiversity strategies and action plans at every territorial scale.

3.3.6. GP6. Human-rights based and GP7. Do no harm and provide social protection

The success of biodiversity strategies and action plans managing urban-rural linkages depends on creating enabling conditions to support their implementation. Among these conditions for success are employing human rights-based approaches in the conservation and sustainable use of biodiversity. In this way, biodiversity strategies and action plans should support the realization, and avoid any negative impact affecting anyone's human rights adopting an urban-rural perspective.

This helps integrate into decision-making the imperative of support and respect human rights both at a territorial level - across the urban-rural continuum - while ensuring that territorial interventions contribute to the realization of human rights elsewhere (across scales, places and sectors). **Protecting a territory's biological diversity should be complemented by upholding human rights in that territory and in all those territories with which urban-rural linkages exist.**

Biodiversity strategies and frameworks should be held accountable for both the territorial and extraterritorial impacts on human rights. In this regard, the precautionary approach is of great relevance. When sufficient reason exists to expect that some specific course of action for biodiversity conservation will lead to an adverse impact on someone's human rights or will cause harm, the precautionary principle should be applied. To account for actual or potential adverse impacts on human rights by biodiversity strategies and action plans, adopting an urban-rural linkages perspective is fundamental. Urban-rural linkages appear thus as an important tool to account for otherwise invisible harm and displaced adverse impacts on human-rights of decision-making processes related to halting and reversing the loss of biodiversity.

Integrating urban-rural linkages into biodiversity strategies and action plans is a way to ensure that the most vulnerable are protected. Environmental human rights defenders (EHRD) are increasingly threatened, often being the targets of killings, violence, criminalization, and retaliation because of their legitimate activities seeking to safeguard the environment and human rights in many countries, being Latin America the region with the most recorded killings of EHRD (CBD Article 19 2016). Protecting these individuals and communities, and thus their crucial role in taking action to protect biodiversity is indispensable for sustaining a healthy planet. Contributing to their protection is an unavoidable principle for any biodiversity strategy. Accounting for urban-rural linkages in biodiversity strategies is a way to influence countries and territories to carry out their obligations to respect the rights of human rights defenders and to protect them from attacks and threats from all actors.

3.3.7. GP8. Environmentally sensitive

Managing urban-rural linkages for the conservation of biodiversity requires an environmentally sensitive approach. This means that strategies and action plans managing urban-rural linkages for the conservation of biodiversity should consider the interrelated and indivisible nature of the biodiversity and climate change crises, as well as the interrelations with all the dimensions of sustainable development. In short, urban-rural linkages strategies for biodiversity should address the environment as a whole, meeting the objectives of a habitable climate, self-sustaining biodiversity, and a good quality of life for all.

In fact, policies have largely tackled biodiversity loss and climate change independently of each other (Pörtner, et al., 2021). But the actions to mitigate one environmental crisis could be inadvertently worsening another crisis. Managing environmental issues in isolation, in a compartmentalized manner, can lead to adverse impacts on the environment as a whole, and thus, on the sustainability of a healthy planet. For example, reforestation and afforestation over vast land areas (usually replacing savannas or other ecosystems) or the growth of bioenergy crops can effectively remove carbon from the atmosphere but is detrimental to local livelihoods, biodiversity, and ecosystem services (Dobbs et al., 2011).

In the same way, the conservation and sustainable use of biodiversity can have climate feedbacks and impacts on greenhouse gas emissions. This requires that urban-rural linkages approaches for biodiversity examine holistically the inter-related nature of environmental issues and human interdependence with the environment for taking action. There are differences between those living more in built environments and those living in less built, more natural environments that need to be accommodated.

Furthermore, managing urban-rural linkages for the conservation of biodiversity should consider the social and economic benefits of biodiversity. The goods and services provided by biodiversity are important to all people. Some are especially important to poor and vulnerable groups, as they are often most directly dependent on biodiversity and ecosystems. Biodiversity strategies at every level should ensure benefits, including nutrition, food security, medicines, and livelihoods through sustainable management of biodiversity, as well as protecting customary sustainable use of biodiversity by indigenous peoples and local communities (Pörtner, et al. (2021). Thus, managing urban-rural linkages for the protection of biodiversity should also meet people's needs through the sustainable use and benefit sharing of biodiversity.

To account for the interactions between climate, biodiversity, and social and economic factors in policy interventions, planned interventions can be assessed in terms of trade-offs, co-benefits and synergies in terms of adaptation, mitigation, biodiversity conservation, and meeting people needs through the sustainable use of biodiversity. Applying this principle to strategies and action plans managing urban-rural linkages for biodiversity have the potential of delivering the highest co-benefits and solutions at the climate-biodiversity-society nexus and bring greater synergies across multilateral environmental agreements at a territorial level, including the three Rio Conventions and the Sustainable Development Goals.

Applying this principle (GP8) for biodiversity strategies through managing urban-rural linkages requires the support of functional and spatial systems-based approaches (GP3), balanced partnerships (GP5), participatory engagement (GP9), and data driven, and evidence based (GP10) principles. In this manner, the interlinkages and feedbacks between environmental issues and social systems can be identified.

4. THE POST 2020 GLOBAL BIODIVERSITY AGENDA AND URBAN-RURAL LINKAGES

Urban–rural linkages have come to occupy center stage of global sustainability policy. The 2030 Agenda for Sustainable Development, adopted in September 2015, in its Goal 11 on "Sustainable cities and communities" recognizes the importance of urban–rural linkages for sustainable development in target 11.a, calling for stakeholders to "support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning". Likewise, the New Urban Agenda (NUA), adopted at the United Nations Conference on Housing and Sustainable Urban Development (Habitat III) in 2016, called for an urban paradigm shift, providing a universal framework of actions for sustainable urban development, considering the importance of urban-rural linkages and functions for urban and territorial planning processes, and the sustainable management and use of natural resources.

In this regard, in addition to UN-Habitat and the development of the Urban-Rural Linkages: Guiding Principles (URL-GP) and Framework for Action launched in 2019, other UN Agencies and development partners have started to mainstream urban-rural linkages as a policy arena to achieve other Sustainable Development Goals, such as Goal 2 which calls for an end to hunger, improving nutrition and promoting sustainable agriculture (UN Nutrition, 2020), as well as the importance of urban-rural linkages for territorial approaches (GIZ, 2021). More recently, urban-rural linkages have come into focus for global Multilateral Environmental Agreements, such as the United Nations Convention to Combat Desertification (UNCCD), as policy domain for land and ecosystem restoration (UNCCD, 2021), and the United Nations Convention on Biological Diversity (CBD) through its Secretariat.

4.1. Global Biodiversity Targets and Actions on Urban-Rural Linkages

In 2022, during the fifteenth meeting of the Conference of the Parties (COP-15) to the CBD, countries will adopt a new post-2020 Global Biodiversity Framework. This framework will be adopted as a steppingstone towards the 2050 Vision of "Living in harmony with nature" of the convention. The framework –currently under development- recognizes that urgent action is required to transform economic, social and financial models so that the trends that have exacerbated biodiversity loss will stabilize by 2030 and allow for the recovery of natural ecosystems by 2050.

The post-2020 global biodiversity framework is envisioned as a fundamental contribution to the implementation and support of the 2030 Agenda for Sustainable Development. It also takes into account the long-term strategies and targets of multilateral environment agreements, including biodiversity-related and Rio conventions, to ensure synergistic delivery of benefits from all the agreements for the planet and people.

In addition to the four long-term goals for 2050 related to the 2050 Vision for Biodiversity, the framework has 21 action-oriented targets for transformative action over the decade to 2030. According to the current first draft of the framework, the actions set out in each target need to be initiated immediately and completed by 2030.

In this context, an urban-rural linkages approach for biodiversity (see Section 2) can support transformative action on biodiversity. This approach is based on the understanding that effective biodiversity action should:

- Manage the effects (actual or potential) of management decisions across multiple sectors, actors and levels on adjacent and far-off territories while ensuring that decision-making at a territorial level (including territorial solutions for biodiversity) also have sustainable impacts elsewhere (across scales, places and sectors)
- Adopt a territorially differentiated approach for biodiversity action, recognizing the degree of autonomy of governance for nature of a territory; and
- Integrate territorial and flows-based approaches for the management of interactions across the urban-rural continuum and that stretch beyond localities or bounded territories and cannot be managed by all-encompassing territorial measures or institutions.

The chart on the following pages shows how urban-rural linkages can underpin 15 of the 21 action-oriented targets for urgent action over the decade to 2030 of the post-2020 global biodiversity framework. These actions are for national governments primarily, but with recognition that the implementation of the targets will also be by local and subnational governments and other stakeholders. The text of the targets is the recommended text for agreement by the Parties at COP 15 and thus may change following negotiations. Text in [square brackets] indicate language that is not yet agreed.

Global Biodiversity Framework (GBF) targets
1. Reducing threats to biodiversity
Target 1. Ensure that [all] areas are under integrated biodiversity-inclusive spatial planning or other effective management processes, addressing land and sea use change [[retaining all]/[minimizing loss of] [intact ecosystems]] [threatened ecosystems] [and areas of high biodiversity importance] enhancing connectivity and integrity, while respecting the rights of indigenous peoples and local communities.
Target 2. Ensure that at least [20] [30] [per cent]/ [at least [1] billion ha] of areas of degraded terrestrial, inland waters, coastal and marine ecosystems are under restoration [, taking into account their natural state as a baseline [reference]].

Target 3. Ensure and enable at least [30 per cent] of [all [---] and of [---]] [globally] [at the national level] especially areas of particular importance for biodiversity and ecosystem functions and services are [effectively conserved through well]/[conserved through effectively] managed, ecologically representative, well connected and equitably governed systems of protected areas [including a substantial portion that is strictly protected] and other effective area-based conservation measures, [placeholder for new language on indigenous protected areas/territories]and integrated into the wider landscapes and seascapes, [in accordance with national priorities and capabilities,] [including the right to economic development, will not affect the right or ability of all Parties to access financial and other resources required for the effective implementation of the whole framework,] [while ensuring that [sustainable use] of these areas, if in place, contributes to biodiversity conservation,] and respecting the rights of indigenous peoples and local communities.

Contribution of urban-rural linkages to Targets 1,2 and 3

- Use territorially integrated approaches -across the urban-rural continuum- for land and sea-use planning, so that planning measures can be rolled out across the gradient of change of nature, from intact to completely altered ecosystem.
- Use flow-based approaches for planning processes, so that the processes and interactions across jurisdictions that link land and sea-use changes in rural areas with urban processes, and vice versa, can be considered.
- Use territorial and flow-based approaches for planning processes to enable the unimpeded movement of species, within and across ecosystems, and the flow of natural processes across and beyond territorial jurisdictions.
- Consider both territorial and flows-based approaches for spatial planning processes to foster multi-sectoral, multi-level and multi-stakeholder approaches. This allows effective participation in decision-making, allowing the balanced inclusion of actors at a territorial level and along flows and interactions.
- Manage interactions that stretch beyond spatial planning frames and/or territorial boundaries (or extraterritorial urban-rural linkages) to increase the effectiveness of spatial planning for land and sea-uses, for extraterritorial interactions may drive land and sea-use changes, and therefore undermine the effectiveness of spatial planning processes at local and territorial levels, as well as area-based conservation measures.
- Use territorial approaches to support the integration of areas under conservation into wider landscapes and seascapes.
- Consider urban-rural linkages to support decision-making with regard to trade-offs between different elements of sustainability, while taking into account the effects (actual or potential) of management activities on adjacent ecosystems.

Related actions from UN-Habitat Urban-Rural Linkages: Framework for Action:

- Governance, legislation and capacity development (A)
- Integrated planning across the urban-rural continuum (B)
- Empower people and communities (D)
- Territorial economic development and employment (F)
- Infrastructure, technology and communication systems (H)
- Environmental impact and natural resource and land management (J)

Target 5. Ensure that harvesting trade and use of wild species is sustainable and legal, minimizing impacts on non-target species and ecosystems, [and prevent and eliminate biopiracy and other forms of illegal access to and transfer of genetic resources and associated traditional knowledge], while respecting customary sustainable use.

Contribution of urban-rural linkages to Target 5

- Use urban-rural linkages to manage supply chains (at the point of harvest, landing, during transportation and trade, and at point of marketing and final consumption using)
- Target reduction of demand for products that use wild species for food and non-food purposes, such as clothing, medicinal, cultural, scientific, recreational and work-related uses, as well as for selling or trading
- Manage urban-rural linkages to enable information flows at points of marketing and final consumption, and thus affect the overall demand, contributing to eliminating unsustainable, illegal and unsafe harvesting, trade and use of wild species while promoting the sustainable, legal and safe use of wild species and of products derived from them.
- Identify and support various types of partnerships that connect points of production and consumption to establish and enhance flow-based governance arrangements at a territorial level able for engaging with networks and institutions that operate beyond territorial jurisdictions (e.g., at the global level) and which are crucial for eliminating unsustainable, illegal and unsafe harvesting, trade and use of wild species.
- Establish territorial governance arrangements (across the urban-rural continuum) to address problematic activities, such as illegal trade, through cross-jurisdictional, multi sectoral and multi stakeholder actions and regulations.

Related actions from UN-Habitat Urban-Rural Linkages Framework for Action:

- Governance, legislation and capacity development (A)
- Integrated planning across the urban-rural continuum (B)
- Empower people and communities (D)
- Knowledge and data management for dynamic spatial flows of people, products,
- services, resources and information (E)
- Infrastructure, technology and communication systems (F)

Target 6. Identify and manage pathways for the introduction of alien species, prevent the introduction and establishment of [all] priority invasive species, and reduce the rate of introduction [and the rate of establishment] of other known or potential invasive species [by at least 50 per cent] to eradicate, reduce or control invasive alien species, [in order to][and] eliminate or reduce their impacts on [native] biodiversity.

Selected contributions of urban-rural linkages to Target 6

- Use urban-rural linkages to identify transport and trade interactions with contiguous and distant territories in priority sites. The evidence suggests that the highest number of introductions occur through transport-related contaminants, among others[10]. Managing urban-rural linkages built around trade and travel interactions, using both territorial and flows-based approaches, can help to slow the rate of invasion, at least for unintentional introductions linked to travel and trade.
- Use urban-rural linkages to establish formal governance arrangements to regulate flows and supply chains that might transport contaminants and invasive alien species through links with other territories.
- Institutionalize flows based-governance arrangement establishing partnerships and enhancing international cooperation.

Related actions from UN-Habitat Urban-Rural Linkages Framework for Action:

- Governance, legislation and capacity development (A)
- Integrated planning across the urban-rural continuum (B)
- Knowledge and data management for dynamic spatial flows of people, products,
- services, resources and information (E)
- Infrastructure, technology and communication systems (F)

Target 7. Reduce [pollution from all sources [and pollution risks]/[[emissions and deposits of pollutants [including light and noise]] and plastic pollution], to levels that are not harmful to biodiversity and ecosystem functions [and human health], [considering cumulative effects,] including by [[significantly] reducing excess nutrients lost to the environment [by at least half] and through more efficient nutrient cycling and use, and reducing the overall [risks associated with the use of]/[use of and risks from][[pesticides and highly hazardous chemicals]/[highly hazardous chemicals]/[pesticides,] [by at least half]/[[by at least two thirds], [taking into account food security and livelihoods] and [preventing[, reducing and eliminating] plastic pollution] [eliminating the discharge of plastic [and electronic] waste.]

Selected contributions of urban-rural linkages to Target 7

- Conduct participatory, multi-stakeholder assessments and monitoring systems to identify the environmental and health impacts of urbanization in contiguous and distant rural areas.
- Ensure territorially integrated levels of environmental policy stringency –across the urban-rural continuum- so pollution is not displaced to contiguous jurisdictions (from urban to rural areas, from rural areas to wild ecosystems).
- Strengthen measures to reduce point source pollution at territorial levels (in urban and rural areas), such as discharges from the treatment of urban wastewater, industry or fish farms. This will reduce harms to biodiversity and ecosystems' functions, avoiding the displacement of pollution through the flow of natural processes across jurisdictions.

10 CBD/WG2020/3/INF/3 (2021)

- Establish services and product procurement systems to incentivize food production without pesticides, such as with organic, regenerative or agro-ecological practices, while fulfilling the demands of urban areas with peri-urban and rural producers, reducing greenhouse emission and pollution from long-haul transportation too.
- Use policy interventions at territorial levels that encourage varied diets and emphasize plant-based sources of protein (e.g. legumes) for reducing the environmental costs of production (e.g. GHG emissions, groundwater pollution and land use) while enhancing nutrition.
- Strengthen territorial urban-rural linkages (interactions at territorial levels and among contiguous jurisdictions) to promote circular economies so that recycling and reuse is promoted to avoid additional discharges of plastic waste.

Related actions from UN-Habitat Urban-Rural Linkages Framework for Action:

- Governance, legislation and capacity development (A)
- Integrated planning across the urban-rural continuum (B)
- Empower people and communities (D)
- Knowledge and data management for dynamic spatial flows of people, products, services, resources and information (E)
- Environmental impact and natural resource and land management (J)

Target 8. Minimize the impact of climate change [and ocean acidification] on biodiversity and increase its resilience through mitigation, adaptation, and disaster risk reduction actions, including through [nature-based solutions] [and other ecosystem-based approaches], [based on common but differentiated responsibilities and respective capabilities], [contributing [by 2030] to at least 10 Gt CO2 equivalent per year to global mitigation efforts].

Contribution of urban-rural linkages to Target 8

- Implement national policy frameworks (including National Urban Policies) that are conducive to strengthen subnational actions –at a territorial level- in climate change and biodiversity.
- Strengthen the key role of subnational governments in coordinating and implementing Nationally Determined Contributions (NDCs), long-term low GHG emission development strategies, and National Biodiversity Strategy and Action Plan (NBSAP) at a territorial level.
- Put in place multi-level, multi-sectoral and spatially integrated (urban-rural) mechanisms for the translation, coordination and implementation of national climate change and biodiversity strategies.
- Strengthen ecosystem-based approaches and circular economy frameworks at territorial levels for the implementation of both subnational and national climate change and biodiversity strategies.
- Ensure that the implementation of sectoral plans and policies at a territorial level are made compatible with both biodiversity and climate strategies, increasing the resilience of productive ecosystems and areas.

- Put in place measures to foster territorial practices contributing to both climate change mitigation and biodiversity goals, such as agroecology.
- Establish flow-based governance arrangements and monitoring systems for accounting for hidden flows (e.g., CO_2 emissions embedded in trade and imports) that undermine the net effects of territorial climate change mitigation strategies and impact ecosystems in other locations.

Related actions from UN-Habitat Urban-Rural Linkages Framework for Action:

- Governance, legislation and capacity development (A)
- Integrated planning across the urban-rural continuum (B)
- Empower people and communities (D)
- Knowledge and data management for dynamic spatial flows of people, products, services, resources and information (E)
- Environmental impact and natural resource and land management (J)
- The urban-rural continuum in the face of conflict and disaster (K)

2. Meeting people's needs through sustainable use and benefit-sharing

Target 9. Ensure that the management and use of wild species are sustainable, thereby providing social, economic and environmental benefits for people, especially those in vulnerable situations and those most dependent on biodiversity, including through the promotion of sustainable [biodiversity-based products and services] [including sustainable trophy hunting], and protecting and [promoting]/[respecting] customary sustainable use by indigenous peoples and local communities.

Target 10. Ensure that [all] areas under agriculture, aquaculture, [fisheries], forestry, [and other productive uses] are managed sustainably, in particular through the sustainable use of biodiversity, contributing to [the long-term] efficiency, productivity and resilience of these production systems, conserving and restoring biodiversity and maintaining [its ecosystem services]/[nature's contribution to people].

Target 11. Restore, maintain and enhance nature's contributions to people, including ecosystem functions and services, such as regulation of air, water, [and climate], [soil health], and pollination, as well as protection from natural hazards and disasters, through [nature-based solutions and ecosystem-based approaches], [through payment for environmental services] for the benefit of all peoples and nature

Contribution of urban-rural linkages to Target 9, 10 and 11

- Use territorially integrated management systems (at watershed or landscape/seascape levels) to manage services provided by key ecosystems, such as forests and wetland, especially in upstream areas, while considering the contribution of these ecosystems in downstream areas.

- Use flows-based approaches, establishing partnership and cooperation, to manage in an integrated manner (upstream and downstream) the services provided by key ecosystems when territorial governance scales are not suited to encompass the flows of these services.
- Create and recreate green and blue spaces in urban areas to reduce pressures on ecosystems in adjacent rural areas that provide services related to air quality, and quality and quantity of water.
- Establish services that enable the ecological/sustainable intensification of agriculture, aquaculture and forestry systems at a territorial level to meet increasing urban and territorial demands for food and materials while reducing both land use changes within territories and pressures over land use in territories and rural areas elsewhere.
- Encourage agroecology to enhance the resilience of production systems at a territorial level, while enhancing and reducing pressure on ecosystem services.
- Use system approaches and circular economy framework to increase resource use efficiency and the productivity of agriculture, aquaculture and forestry processes at a territorial level, diminishing pressures on ecosystems and land and sea use changes within territories and beyond territorial jurisdictions.
- Manage extraterritorial urban-rural linkages for transmission signals across and beyond territories to alter the overall demand of goods and services impacting key ecosystem services at local and territorial levels.

Related actions from UN-Habitat Urban-Rural Linkages Framework for Action:

- Integrated planning across the urban-rural continuum (B)
- Invest and finance for inclusive urban-rural development (C)
- Empower people and communities (D)
- Knowledge and data management for dynamic spatial flows of people, products, services, resources and information (E)
- Environmental impact and natural resource and land management (J)

Target 12. Increase the area of, access to, and benefits from green and blue spaces, for human health and well-being in urban areas and other densely populated areas.

Contribution of urban-rural linkages to Target 12

- Make and implement planning goals for increasing green and blue spaces in urban areas while improving habitat connectivity at a territorial level –across the urban-rural continuum.
- Create networks of green and blue spaces at a territorial level, improving connectivity between urban, peri-urban and rural areas, increasing access to green and blue spaces for urban and non-urban dwellers, and securing networks of ecological infrastructure.
- Strengthen connectivity and accessibility between urban, peri-urban and rural areas for ex-situ transportation, increasing access for urban dwellers to green and blue spaces near to urban areas, while increasing access of non-urban dwellers to urban areas.

- Invest in green and blue spaces in peri-urban and rural areas, as well as in preserving landscapes, cultures and social characters associated with the "rural", so that mobility and interactions of urban dwellers with communities that rely on agro-tourism or biodiversity conservation for their subsistence can be encouraged.
- Tailor interventions for marginalized groups, which often have more limited access to green and blue spaces (CBD/WG2020/3/INF/3, 2021), both in urban and rural areas, to benefit from existing transportation networks to increase access to green and blue spaces.

Related actions from UN-Habitat Urban-Rural Linkages Framework for Action:

- Governance, legislation and capacity development (A)
- Integrated planning across the urban-rural continuum (B)
- Invest and finance for inclusive urban-rural development (C)
- Knowledge and data management for dynamic spatial flows of people, products,
- services, resources and information (E)
- Territorial economic development and employment (F)
- Infrastructure, technology and communication systems (H)

3. Tools and solutions for implementation and mainstreaming

Target 14. Ensure the [full] integration of biodiversity and its multiple values into policies, regulations, planning and development processes, poverty eradication strategies, [national accounts,] and strategic environmental and environmental impact assessments within and across all levels of government and across all sectors, [in particular agriculture, forestry, fisheries, aquaculture, finance, tourism, health, manufacturing, infrastructure, energy and mining, and deep-sea mining with safeguards,] progressively aligning all relevant public and private activities, [fiscal] and financial flows with the goals and targets of this framework.

Contribution of urban-rural linkages to Target 14

- Put in place mechanisms and incentives for territorial entities, including subnational governments, cities and other local authorities, to move biodiversity from the periphery of decision making to become a core consideration of decision and planning processes.
- Develop strategies for incorporating biodiversity and ecosystem services into accounting systems of territorial entities, so that the national System of Environmental-Economic Accounting can be implemented from territorial levels.
- Legislate at national and subnational levels for the establishment of environmental impacts assessment that consider biodiversity and its multiple values to ensure the environmental sustainability of territorial development plans and projects.
- Support territorial governing entities to establish policies and mechanisms for incorporating ecosystem services into accounting systems across all sectors and businesses organized under territorial regulations.

- Encourage (and, where needed, legislate) public, private and cooperative financial institutions to promote responsible, ethical and sustainable investment practices by subnational and local financial institutions to ensure positive biodiversity outcomes on the ground.
- Build capacities about biodiversity importance and impacts on investments in territorial and sectoral financial institutions (e.g. rural and agricultural banks).
- Encourage the development and adoption of tools to assess impacts and dependencies by financial institutions on ecosystems and biodiversity at a territorial level.
- Set disclosure targets and encourage public reports for financial institutions at territorial levels to align investments flowing to territories elsewhere with positive biodiversity outcomes for local communities.
- Enable territorial governing entities to put in place policies for reducing the negative impacts on biodiversity from local consumption, production practices and supply chains in territories elsewhere.

Related actions from UN-Habitat Urban-Rural Linkages Framework for Action:

- Governance, legislation and capacity development (A)
- Invest and finance for inclusive urban-rural development (C)
- Knowledge and data management for dynamic spatial flows of people, products,
- services, resources and information (E)

Target 15. Take legal, administrative or policy measures to [ensure that all] [significantly increase the number or percentage of] business and financial institutions [, particularly large and transnational companies and companies with significant impacts on biodiversity,] [that]:

a. [Through mandatory requirements] Regularly monitor, assess, and fully and transparently disclose their [dependencies and] impacts on biodiversity [along their operations, supply and value chains and portfolios];

b. [Provide information needed to consumers to enable the public to make responsible consumption choices];

c. [Comply and report on access and benefit-sharing, as applicable;]

d. [Take legal responsibility for infractions] [, including through penalties, and liability and redress for damage and addressing conflicts of interest;]

in order to [significantly] reduce [by half] negative impacts on biodiversity, increase positive impacts, reduce biodiversity-related risks to business and financial institutions, and [moving towards sustainable patterns of production] [foster a circular economy] [, consistent and in harmony with the Convention and other international obligations, together with Government regulations.]

Contribution of urban-rural linkages to Target 15

- Support subnational governments and territorial entities to enable business to asses and report on their dependencies and impacts on biodiversity, from local to global, to inform better decision making.
- Prioritize investments that reduce adverse impacts on biodiversity at a territorial level, allowing business and industries, in turn, to reduce biodiversity-related risks.
- Support and encourage business organized under territorial laws to source sustainable materials and natural resources by requiring labeling and certification schemes at a territorial level, reducing the displacement of environmental impacts associated with business activities to territories elsewhere.
- Provide incentives to businesses organized under territorial regulations to manage their territorial and extraterritorial dependencies and avoid or minimize negative impacts, overexploitation and pollution while maximizing net positive impacts on biodiversity and human health within territorial boundaries and in territories elsewhere.
- Support business at a territorial level to include environmental considerations in trade contracts, policies and agreements.
- Facilitate business organized under territorial jurisdiction to provide verifiable evidence of change, such as traceability of biodiversity impacts and transparency in supply chains and ingredients.

Target 16. Ensure that people are encouraged and enabled to make sustainable consumption choices including by establishing supportive policy, legislative or regulatory frameworks, improving education, and access to relevant accurate information and alternatives, and [halve the global footprint [of diets]/[of consumption] per capita] halve per capita global food waste, and substantially reduce waste generation[, and, where relevant, eliminate overconsumption of natural resources and other materials in an equitable manner][, in order for all peoples to live well in harmony with mother earth].

Contribution of urban-rural linkages to Target 16

- Develop strategies for people to improve the efficiency and reduce waste from personal consumption by engaging in territorial circular economy practices and strengthening links between urban and rural communities and areas.
- Promote the use of goods from sustainable sources, highlighting the benefits of territorially and sustainable sourced goods.
- Put in place measures and tools for people to reduce the overall demand for resources.
- Generate information for people highlighting the benefits of sustainable consumption while underscoring the role of unsustainable consumption and their impacts on biodiversity within and beyond territorial boundaries
- Provide public access to relevant information and alternatives to reduce overconsumption by acknowledging the links and impacts of responsible choices on near and distant communities and territories.

- Establish frameworks for enhancing cooperation among communities and other actors in urban and rural areas that facilitate the flow of investment, knowledge and skills necessary to make responsible choices.

Related actions from UN-Habitat Urban-Rural Linkages Framework for Action:

- Governance, legislation and capacity development (A)
- Knowledge and data management for dynamic spatial flows of people, products, services, resources and information (E)
- Empower people and communities (D)

Target 18. Identify [by 2025] and [eliminate,] phase out [or reform] incentives including subsidies harmful for biodiversity, [taking into account national socioeconomic conditions,] in a [proportionate,] just, effective and equitable way, while substantially and progressively reducing them [by at least 500 billion United States dollars per year,] [starting with the most harmful subsidies,] [in particular fisheries and agricultural subsidies] [and, as appropriate, redirect and repurpose to domestic and international nature-positive activities] and [ensure that positive incentives are scaled up], consistent and in harmony with relevant international obligations.

Contribution of urban-rural linkages to Target 18

- Strengthen multi-level, multi stakeholder and horizontal cooperation across local authorities within territories to identify incentives harmful for biodiversity.
- Support territorial governing entities to promote economic, legal or institutional measures designed to encourage beneficial activities within their jurisdictions, such as incentive payments for agroecology and organic farming, as well as agricultural land set-aside schemes and payments for ecosystems services.

Related actions from UN-Habitat Urban-Rural Linkages Framework for Action:

- Governance, legislation and capacity development (A)
- Territorial economic development and employment (F)
- Environmental impacts and natural resource and land management (J)

Concluding Messages

The effectiveness of strategies and action plans for the conservation and sustainable use of biodiversity at territorial and global levels rest on mainstreaming urban-rural linkages into territorial governance and enabling subnational governments, cities, and local authorities to take action managing these linkages.

This report demonstrated that managing urban-rural linkages at a territorial level can enable effective biodiversity action by:

- **Adopting a territorial approach for biodiversity action, grounding biodiversity strategies on the different capacities -starting with the territorial autonomy for biodiversity governance- across territories and jurisdictions**. This consideration is fundamental for the effectiveness of biodiversity strategies, for investments, policies as well as bargain processes among actors and mechanisms will differ significantly if a territory is globally governed or enjoys self-governance for nature.
- **Integrating into decision-making processes (across sectors) the effects (actual or potential) of management decisions on adjacent and far-off territories**, taking into account the biodiversity impacts of decision-making across different scales and territories. Up to one half of the environmental impacts from consumption are felt in regions other than where the consumption occurs. Interactions that stretch territorial boundaries undermine the net effects of biodiversity (and environmental) policies at a global level because through these interactions environmental impacts are displaced from one territory to another. Considering the impacts of interactions that transcend territorial boundaries is crucial for the success of biodiversity action in territories impacted by remote interactions (and where biodiversity loss is more acute), as well as for global biodiversity frameworks.
- **Generating synergies at different levels of governance between in-situ territorial approaches and flow-based ex situ approaches**. The governance of biodiversity is not subject exclusively to territorial institutions (and powers acting on neatly bounded territories), but it is also subject to networked forms of governance that operate across and beyond territorial jurisdictions. Therefore, effective biodiversity action rests on a combination of measures based both territorial-based and flow-based governance arrangements. International and trans-national and municipal cooperation is crucial to create these synergies.

This paper further highlighted that subnational governments, cities and local authorities are key for catalyzing action on urban-rural linkages for biodiversity. These governments and authorities play a key role in protecting and enhancing biodiversity and in delivering on national and international biodiversity commitments.

Likewise, ecological changes and the loss of biodiversity impact territorial assets that can undermine the successful implementation of local plans and livelihoods. To support sub-national biodiversity actions mainstreaming and building capacities for the management of urban-rural linkages, it is key for well-designed policy instruments to consider urban-rural interactions driven from outside territories, in order to deliver positive and lasting biodiversity outcomes at the territorial level across the urban-rural interface.

In follow up to the WorldBio 2022 and Edinburgh processes it would be encouraging to foster multi-level and multistakeholder networks for territorial, integrated urban-rural governance of biodiversity. Management of urban-rural linkages for mainstreaming biodiversity will shall be informed by technical guidance called for in the WorldBIO outcome document including:

- cataloging, leveraging, and disseminating transformative actions,
- democratizing knowledge to consolidate the framework, focusing on pilot projects, and
- facilitating access to investments and finance, resources and partnerships, technology transfer, and capacity-building.

Enabling urban-rural linkages action for biodiversity at subnational levels requires effective institutional arrangements. Incorporating and formalizing flow-based and networked forms of governance arrangements among subnational governments is a key step in this direction. For this, subnational governments, cities and local authorities can start rescaling environmental governance, for instance by establishing international environmental agendas to break the fixed scales in which subnational governments traditionally operate, as well as coordinating environmental interventions by establishing national and Transnational Municipal Networks or TMNs (Nielsen, A. B., & Papin, M., 2021).

The role of international and transnational cooperation for enabling action for biodiversity by managing urban-rural linkages is crucial. Fostering cooperation among subnational governments at national and international scales is a condition for managing urban-rural linkages to support transformative action on biodiversity, and therefore to achieve the targets of National Biodiversity Strategies and Action Plans and the Post-2020 Global Biodiversity Framework.

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