

SUSTAINABLE USE OF BIODIVERSITY

Science Brief for Sustainable Use Targets of the
Post-2020 Global Biodiversity Framework



SUSTAINABLE USE

SCIENCE BRIEFS ON TARGETS, GOALS AND MONITORING IN SUPPORT OF THE POST-2020 GLOBAL BIODIVERSITY FRAMEWORK NEGOTIATIONS

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SUSTAINABLE USE IN THE POST-2020 GLOBAL BIODIVERSITY FRAMEWORK

Background and objectives

This brief was prepared as a follow-up to the "Science briefs on targets, goals and monitoring in support of the post-2020 global biodiversity framework negotiations" that were coordinated by Future Earth and GEO BON in support of the WG2020-4 meeting in Nairobi, Kenya in June 2022 (CBD/WG2020/4/INF/2/Rev.2). This brief builds on the IPBES thematic assessment of the sustainable use of wild species but extends its focus to incorporate species within modified ecosystems such as farmland and urban areas. The objective of this brief is to address the sustainable use of all species and provide a set of key messages with supporting information. This is in response to informal discussions held with Parties to the UN Convention on Biological Diversity (CBD), the CBD Secretariat, the OEWG Co-Chairs and stakeholders.

Structure of this brief

- 1) Introduction
- 2) Key messages
- 3) Supporting information

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Introduction

Sustainable use (SU) of biodiversity is incorporated into multiple aspects of the Global Biodiversity Framework (GBF) of the Convention on Biological Diversity (CBD). This reflects the importance of SU as one of the three objectives of the CBD text (CBD 2021a). This brief, based on a global synthesis of sustainable use of wild species by IPBES adopted by State members in July 2022 (IPBES 2022a) identifies core aspects of SU and how they might be addressed by different elements of the GBF.

GBF targets, like the SDGs, are inseparable ((CBD 2021b) para 12). Thus, the implementation of one target must simultaneously support other targets. Additionally, the GBF is envisaged as a ‘strategy for all’ (CBD 2021b), and is applicable to other Multilateral Environmental Agreements (e.g., CMS, CITES, Ramsar, etc.) and to biodiversity dimensions of other frameworks such as the UNFCCC/Paris Agreement and the SDGs.

Box 1. Definition of ‘sustainable use’

SU is defined by the CBD and IPBES as: “*the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations*” (CBD 1992; IPBES 2019).

Further, “*sustainable use is also an outcome of social-ecological systems that aim to maintain biodiversity and ecosystem functions in the long term, while contributing to human well-being. It is a dynamic process as wild species, the ecosystems that support them and the social systems within which uses occur, change over time and space*” (IPBES 2022a).

Sustainable use of species, ecological functions and Natures Contributions to People (NCP). The IPBES Sustainable Use Assessment focused on SU of wild species. This brief also addresses sustainable access to and use of multiple dimensions of nature, including of nature’s contributions within modified ecosystems such as farmland and urban areas. Managed production systems may also incorporate elements of dependence on (i.e., use of) ecological functions or nature’s contributions (e.g., pollination), so aspects of this brief are relevant to production systems beyond just a focus on their impact on nature e.g. through land/sea use change, pollution, etc.

Sustainable Use – Goal B

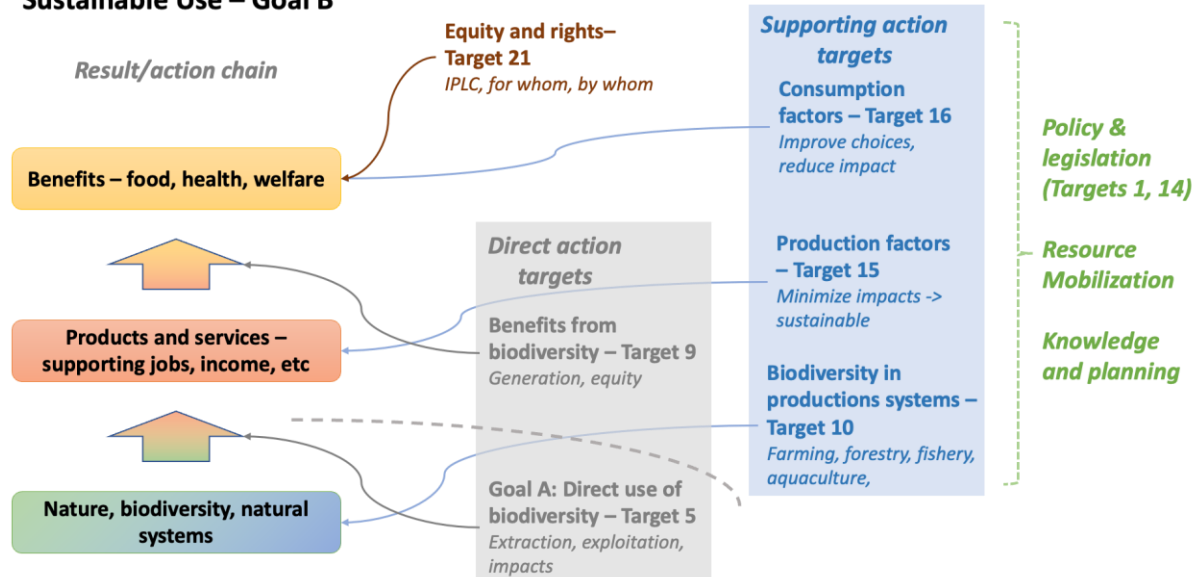


Figure 1. Schematic showing the relationship of targets covered in this brief to Goal B on sustainable use, of the Global Biodiversity Framework.

Goal B of the GBF promotes the sustainable use and management of nature to ensure ongoing contributions to people, and is dependent on success in maintaining the status of biodiversity under Goal A (fig. 1). Targets linked to Goal B specifically address the harvest of wild species (T5) and benefits sharing (T9). More broadly, additional targets address further aspects of SU, including in production systems that manage resources more intensively (T10), production systems that generate manufactured goods and services (T15), and consumption levels and practices by people (T16). Critically, IPLC (Indigenous Peoples and Local Communities) rights, access, participation and empowerment (T21) are foundational to SU. Finally policy/legislation integration and alignment (T14) and spatial planning (T1) are essential for managing SU.

Key Messages

The use of biodiversity is critical for the whole human population and is a substantial part of economies and markets from local to global levels.

KM 1 (Target 9) – People, particularly those in poor and vulnerable situations, benefit from the use of biodiversity for food, medicine, energy, income and many other purposes, contributing significantly to the achievement of the Sustainable Development Goals. Achieving sustainable use is essential for human well-being; it is also a foundational equity and conservation priority.

KM 2 (Target 5) – Regulation of the use of biodiversity should minimize damaging, unsafe, and illegal practices; it must also promote sustainable use that equitably delivers benefits to people.

KM 3 (Targets 21, 22) – The roles, rights, and agency of indigenous peoples, local communities, and of women, are foundational in particular for customary SU, and are foundational to sustainable use.

KM 4 (Targets 1, 14) – To support sustainable use of biodiversity, policy tools and processes must be context-specific, inclusive and participatory, supported by resilient and adaptive institutions that are aligned across multiple scales, levels of government, sectors and cultures, and recognize diverse conceptualizations and knowledge systems. Promoting tenure and resource rights contributes to sustainable use.

KM 5 (Targets 10, 15, 16) – Production systems must transform to ensure their demands and reliance on natural functions and services and impacts on biodiversity are sustainable. Reduction in demand to sustainable levels is essential for the resilience of production and natural ecosystems.

KM 6 (Monitoring and indicators) - Development of headline, component and complementary indicators for sustainable use, building on existing sectoral and resource use reporting mechanisms, are a top priority to assure accountability of contributions to Goal B of the GBF.

Supporting Information

In the following Key Messages, primary evidence is derived from the IPBES Sustainable Use of Wild Species Assessment, adopted in July 2022 (IPBES 2022a). This provides the most up to date policy-relevant and validated evidence on SU. Citations in parentheses () refer to Key Messages from its Summary for Policy Makers.

KM 1 (Target 9) – People, particularly those in poor and vulnerable situations, benefit from the use of biodiversity for food, medicine, energy, income and many other purposes, contributing significantly to the achievement of the Sustainable Development Goals. Achieving sustainable use is essential for human well-being; it is also a foundational equity and conservation priority.

The use of wild species contributes directly to the well-being of billions of people globally (A.1.1), in developing and developed countries alike (A.1.4, B.2.11). It supports economically and culturally important activities (A.1.3), on a day-to-day basis in informal and formal markets, and is particularly important to people in vulnerable situations (A.2.2). For example, wild pollinators support the farming of nutritious crops and an estimated 28,000 medicinal plants; the provisioning of products such as honey; the maintenance of green spaces and biocultural landscapes that improve mental health; and cleaner air, water and food resulting from pollinator-centred initiatives to reduce agrochemical use (Garibaldi et al. 2022). The Sustainable use assessment estimated that more than 10,000 species are used for human food, making the sustainable use of wild species critical for achieving food security and improving nutrition, in rural and urban areas.

Reliance on wild species extends around the world, but is highest in low-income countries (B.1.6). Environmental degradation and resource depletion undermine peoples' well-being everywhere, but particularly threaten livelihoods and well-being of the poor (B.2.5). Promoting SU is critical to ensure income and livelihood security at all levels. The contribution of SU to SDGs is substantial but overlooked (established but incomplete, A.1.7).

Trade in wild plants, algae and fungi for food, medicine, hygiene, energy, and ornamental use is increasing (B.1.3). As demand grows and supplies diminish prices increase, favouring higher-income consumers. Traditional foods, diets and medicines of Indigenous Peoples and Local Communities are part of cultural diversity and heritage, with implications for rights of access, use, management, and ownership.

The inequitable distribution of costs and benefits from exploitation of natural resources is a primary driver of unsustainable uses by encouraging over-harvesting, short-term gains over long-term sustainable management, poaching, and unsustainable mining of natural resources by companies (B.2.8 and C.1.3), making the pursuit of equity a necessary condition to achieve sustainable use.

KM 2 (Target 5) – Regulation of the use of biodiversity should minimize damaging, unsafe, and illegal practices; it must also promote sustainable use that equitably delivers benefits to people.

- *Sustainable use of biodiversity contributes to maintaining ecosystem services and abundant, healthy populations of wild species.*

Multiple direct and indirect drivers affect the sustainability of the use of wild species and interact with one another (B.2.1, B.2.2). Ending overexploitation is critical to reverse biodiversity decline (A.3.1, A.3.2). Sustainable use offers reciprocal benefits for people and the environment, as it sustains community and culture while also constituting a pathway for biodiversity conservation.

Natural ecosystems with sufficient integrity and health to support sustainable use must be accessible to people locally. Native habitats covering at least 20% of working landscapes and approximately 40% of terrestrial conserved areas is a minimum to supply nature's contributions to people that support, for example, food security, and connectivity and integrity of ecosystems at larger scales (Garibaldi et al. 2021).

- *Excessive, damaging and illegal use of biodiversity result from many interacting drivers and pressures. Their mitigation is necessary for SU.*

For many practices, demand is linked to demographic trends and consumption patterns. Growing human populations, urbanization, and consumption are creating greater pressure on wild species (D.1.2). Technological advances will affect future use of wild species both negatively and positively (D.1.3). Intensification of existing uses and/or emergence of new uses for wild species have often led to rapid and substantial reconfiguration of trade-offs and synergies, with negative impacts on SU (D.3.2). They can also create novel interfaces that influence disease risk, but in complex, poorly understood ways (D.3.2)(IPBES 2020). Climate change undermines sustainable use of wild species, and will continue to do so in the future (Pörtner et al. 2021).

Large-bodied animals are often the most targeted species for subsistence and commercial hunting, as they generate more economic benefits (B.1.5). Reducing unintentional bycatch and discards in fisheries is progressing, but still insufficient for many threatened and/or protected marine sea turtles, seabirds, sharks, rays, chimaeras, marine mammals and some bony fishes (B.1.2). Destructive logging practices and illegal logging threaten sustainable use of natural forests (B.1.7).

The growth of non-destructive and non-extractive uses, focused around service industries (e.g., tourism, B.1.8) and mental health and welfare can contribute significantly to broader appreciation of the values of nature and promotion of sustainable uses.

- *Trade and dependence on use are growing, particularly global trade and illegal trade, threatening sustainability of use.*

Legal global trade in wild species is a major driver of increased use, often becoming a driver of unsustainable use (A.1.1, B.2.11) and particularly when narrowly focused on. However multiple drivers and increasingly distant linkages (modern markets, legislation, etc.) often threaten indigenous peoples' and local communities' ability to maintain sustainable use of wild species (B.2.6). Conversely, sustainable use offers reciprocal benefits for people and the environment, as it sustains community and culture while limiting market pressures, and offering opportunities for biodiversity conservation, an approach that should be prioritized (Jacquet and Pauly 2022).

Illegal harvesting and trade in wild species occur across all types of use (practices). It is regarded as the third largest class of illegal trade, involving numerous species, and leads to unsustainable use (B.2.12, B.1.7). Lack of monitoring and reporting, poor regulations, and ineffective implementation further promote overexploitation and undermine sustainability of use.

Appropriate regulations based on a whole-of-government approach (B.2.4), their implementation, and effective management systems that promote the sustainable use of wild species contribute to broader conservation objectives (A.3.1).

KM 3 (Targets 21, 22) – The roles, rights, and agency of indigenous peoples, local communities, and of women, are foundational in particular for customary SU, and are foundational to sustainable use.

- *Target 21, on IPLC, provides a critical frame for all SU targets in terms of rights and access, and assuring consideration of the local social-ecological context.*

Wild species play essential roles in the cultural diversity, well-being and livelihoods of many indigenous peoples and local communities. Loss of opportunity for SU represents an existential threat to them (A.2.1, A.2.2). Indigenous peoples manage fishing, gathering, terrestrial animal harvesting and other uses of wild species on more than 40% of terrestrial area, 38 million km² of land in 87 countries (A.3.3). As a result of long histories of use and evolution of culture, the knowledge, practices and worldviews of indigenous peoples and local communities guide their SU practices (A.2.3, B.2.14). Sustainable use of biodiversity is an outcome of social-ecological systems that aim to maintain biodiversity and ecosystem functions in the long term, while contributing to human well-being.

Fairness, rights and equitable distribution of benefits are essential to ensure SU (C.1.3). Strengthening customary institutions and rules often contributes to SU (C.2.4, well established). Securing land tenure and resource rights can contribute to SU (B.2.7).

- *Target 22, on gender, provides a further critical frame for SU, assuring access and benefits for all.*

Gender is seldom taken into account in the governance of wild species, leading to inequities in the distribution of costs and benefits from their use, lack of consideration of women's and men's knowledge(s), and lack of attention to which services contribute to their well-being (B.2.9)(Cruz-Garcia et al. 2019).

KM 4 (Targets 1, 14) – To support sustainable use of biodiversity, policy tools and processes must be context-specific, inclusive and participatory, supported by resilient and adaptive institutions that are aligned across multiple scales, levels of government, sectors and cultures, and recognize diverse conceptualizations and knowledge systems. Promoting tenure and resource rights contributes to sustainable use.

Harvesting takes place in a variety of governance, management, ecological and socio-cultural contexts, particularly at local levels, which affect sustainable use outcomes (B.1.4). Varied conceptualizations of SU influence policy-making by determining the ecological and social elements that are considered, monitored, assessed and used in policy (C.1.1). Policy instruments commonly fail when they are not tailored to local ecological and social contexts (Figure SPM.7)

Policy instruments and tools are more effective when inclusive of diverse knowledge systems (C.3.2) and of standards and frameworks recognizing sustainable use. The IPBES SU Assessment identifies seven policy actions to support sustainable use of wild species (D.2.1, Figure SPM.8). But progress applying them is limited because they are generally not integrated effectively into binding agreements (D.2.1). These include the following:

1. be inclusive and participatory;
2. recognize and support multiple forms of knowledge;
3. equitably distribute of costs and benefits;
4. ensure context-specificity;
5. monitor social and ecological conditions and practices;
6. coordinate and align from local to international levels; and
7. support and develop robust (including customary) institutions.

Land tenure and resource rights can contribute to sustainable use (B.2.7). Policies that support secure tenure rights and equitable access to land, fisheries and forests as well as promote human well-being, create enabling conditions for sustainable use of biodiversity (C.2.3).

Values of biodiversity need to be appropriately measured and integrated in natural capital accounts, aligning financial flows to nature positive outcomes and managing the risks associated with the use of

wild species (such as the divestment from businesses and operations involved in illicit and unsustainable use and trade, and investment in supply chains that demonstrate sustainable and legal practices).

KM 5 (Targets 10, 15, 16) – Production systems must transform to ensure their demands and reliance on natural functions and services and impacts on biodiversity are sustainable. Reduction in demand to sustainable levels is essential for the resilience of production and natural ecosystems.

The commercial and large-scale maximization of food, feed and shelter globally have driven the decline in productivity of other contributions from nature to people (IPBES 2019). Wild species and many components of biodiversity are directly exploited in industrial sectors (e.g., fishing, farming, forestry). All types of biodiversity products should be covered (e.g., wild plant and fungi resources, non-wood products, etc.) for sustainable use. Domesticated species food chains in production systems are a key driver of environmental degradation and biodiversity loss.

Agroecology and ecological intensification aim to increase, stabilize and/or diversify crops by enhancing biodiversity and associated ecosystem services, through multiple mechanisms, all characterized by application of ecosystem-based approaches (Garibaldi et al. 2019; Wezel et al. 2020). Policies to promote these approaches have emerged in different countries, but they are still rare and vary widely across regions. Minimum area requirements for conserving native habitats within working landscapes will promote sustainable production practices (Science brief – Target 10, production systems).

Wasteful practices such as bycatch of species (particularly threatened and/or protected species, B.1.2) as well as pollution by excessive or careless use of nutrients, pesticides and toxic substances (Science brief – Target 7, Pollution, CBD 2022a) must be eliminated.

The importance of targets 10, 15 and 16 is that they address drivers of biodiversity decline from production and consumption processes. Acting on these is necessary to support the achievement of other targets and Goal A on biodiversity conservation, as well as those directly addressing sustainable use. The contribution of these targets may be distinguished as follows:

Target 10 - Actions focused on production scapes (land, freshwater and ocean), i.e. land and sea-use change from a spatial perspective;

Target 15 - Actions focused on production value chains and products, and their impacts related to scope 3 approaches to reducing production footprints;

Target 16 - Actions focused on demand-side drivers, to reduce pressures towards excessive and over-consuming lifestyles.

KM 6 (Monitoring and indicators) - Development of headline, component and complementary indicators for sustainable use, building on existing sectoral and resource use reporting mechanisms, are a top priority to assure accountability of contributions to Goal B of the GBF.

Exhaustive data on extractive uses is collected within individual sectors (e.g., fisheries, farming, forestry), providing opportunities for incorporating these data streams into the monitoring framework of the GBF. Obtaining available data through whole-of-government approaches to the GBF and its contribution to the SDGs will address major gaps in the development of headline indicators and the reporting of component and complementary indicators relevant to Goal B (CBD 2022b).

Implementing and supporting monitoring programmes, generating basic and standardized data using accepted formats, and applying open, FAIR and CARE principles (Carroll et al. 2021) are essential for providing data for indicators development. Significant data gaps occur with regards to gathering, terrestrial animal harvesting, non-extractive practices and socio-economic components of extractive and sustainable use (CBD 2021b)(B chapeau).

Gaps mentioned here may be addressed in the work of the proposed Ad Hoc Technical Expert Group meeting in the intersessional period between COPs 15 and 16. Contributions may include processes as

described for an indicator on Sustainable Use of Wild Species (Target 5)¹, recommendations in the Target 10 brief on filling gaps in the GBF monitoring framework², incorporating indicators on ecosystem service provision (Balvanera et al. 2022), integrating workflows on science-based targets for businesses and production processes (SBTN 2021), among others.

Further Background

Targets 11 and 12 address additional aspects of nature's contributions to people, but with quite specific application, not addressed directly in this brief. The principles covered here do, however, apply to implementation of these two targets.

The thematic online consultation on sustainable use implemented by the CBD Secretariat from 27 July - 8 October 2020 (CBD 2021a) compiled a wide range of concerns and priorities from Parties and observers under seven key themes:

- (a) Sustainable use of biological diversity in the post-2020 global biodiversity framework;
- (b) Sustainable harvest, trade and use of biodiversity;
- (c) Ensuring benefits to people through the sustainable use of biodiversity;
- (d) Sustainable use of biodiversity in managed ecosystems;
- (e) Mainstreaming and sustainable use of biodiversity across sectors;
- (f) Sustainable consumption;
- (g) Customary sustainable use.

These themes map to many of the key messages from the IPBES Sustainable Use Assessment synthesized in this document, adding significant detail and amplification of issues raised.

Sustainable use establishes a primary link between the three pillars of sustainable development (nature, economy and society) and among the Sustainable Development Goals (SDGs). Nature provides the foundation for all human life and social development (fig. 2). Direct exploitation and use of products and services from nature support most economic sectors, as do many non-monetary benefits such as clean air to breathe. These direct benefits in turn support social benefits or goals including sufficient income, healthy diets, health, welfare and equality. Sustainable use also benefits nature as it generates incentives for biodiversity conservation and helps avoid negative impacts such as land use change to generate other economic and societal benefits. The various targets within the GBF address different layers in fig. 2 and correspond to several SDGs, emphasizing the importance of a sustainable use perspective in implementing them in an integrated way.

¹ <https://www.post-2020indicators.org/pdfs/174?type=headline>

² this states that metrics will be needed to assess i) change in biodiversity, ii) production of nature's contribution to people (NCP), iii) interlinkages between biodiversity and production, iv) relationships between biodiversity and demand-side factors, and v) diversification strategies within land uses, between land uses and across landscapes or basins.

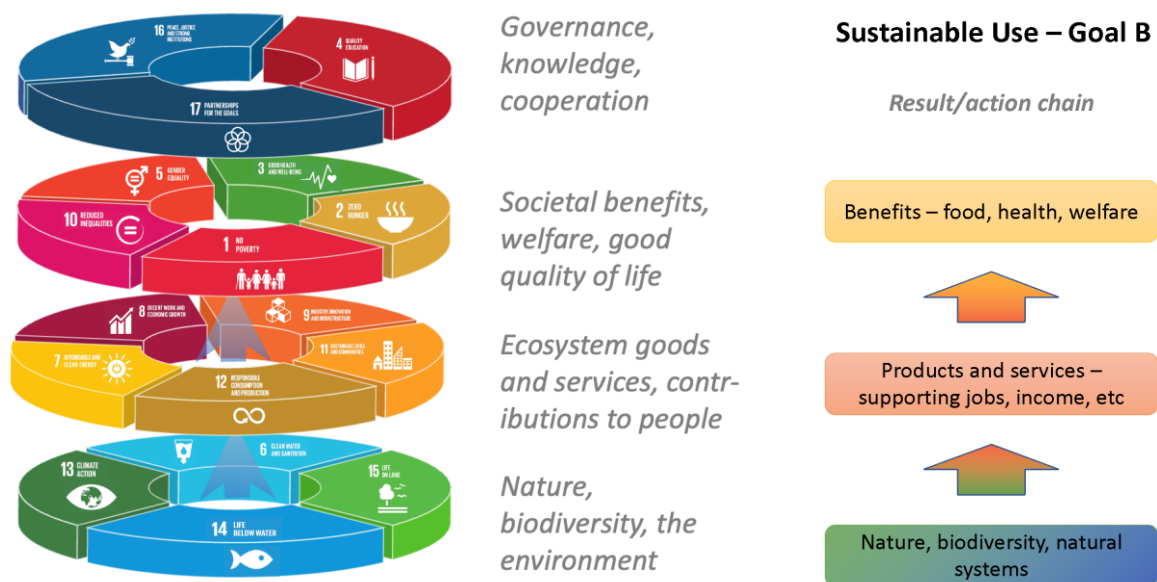


Fig. 2. Left, an interpretation of the SDGs showing the relationship between natural foundations, economic use and extraction of products and services from nature (Nature's contributions to people) and the social benefits and welfare they support, with an upper (fourth) tier representing the governance, knowledge and partnerships needed to sustain the whole (based on (Folke et al. 2016; Obura 2020)). Right, the same model simplified to support the presentation of targets supporting Goal B in this brief and used in Fig. 1.

Recommended scope of terms used in the Sustainable Use targets

This brief advocates that sustainable use should relate to all components of biodiversity. So not just species, but also genes, ecosystems and nature's contributions to people, among others. Thus, text should not attempt to enumerate these, and should cite 'all biodiversity' if/where necessary.

- About 50,000 wild species are used for food, energy, medicine, material and other purposes through fishing, gathering, logging and terrestrial animal harvesting globally. People all over the world directly use about 7,500 species of wild fish and aquatic invertebrates, 31,100 wild plants, of which 7,400 species are trees, 1,500 species of fungi, 1,700 species of wild terrestrial invertebrates and 7,500 species of wild amphibians, reptiles, birds and mammals (well established). Around 20% of these are used for human food. (A.1.2).
- The IPBES SU Assessment classified four main groups of wild species inhabiting different types of biomes, ecoregions or ecosystems, four extractive practices, one non-extractive practice and nine types of uses. To be inclusive, language in the text should emphasize ALL, rather than trying to list classes.

The tone of text should be positive and encouraging of SU, not just negative and discouraging of negative practices (e.g., illegal, unsafe, unreported, etc.)

- As noted in KMs 2 and 3, SU is of critical importance to and a right of many IPLC and poorer communities and individuals. In their interest sustainable use should be promoted and encouraged. This contrasts with many historical perspectives which treated informal uses and uses with negative impacts as punishable offences, leaving a legacy of negative language on target texts.
- Conceptualizations of sustainable use are evolving over time, turning from negative to positive messaging on actions. E.g. statements in international and regional agreements are increasingly addressing 'not causing irreversible harm to biodiversity' and 'supporting the material and non-material contributions of biodiversity to human well-being' (B.3.1).

The IPBES Sustainable Use Assessment and indeed all IPBES major assessments, including the global one emphasize the need for transformative change to achieve sustainability of use and to reverse the

decline of biodiversity. This transformation is further founded in acknowledging multiple value systems (IPBES 2022b).

- Achieving transformative change relating to the use of wild species requires moving towards a common vision while recognizing different value systems and conceptualizations of sustainable use (D.3.3).
- The sustainable use of wild species will benefit from a transformative change in the prevailing conceptualization of nature, shifting from the human-nature dualism deeply rooted in many (but not all) cultures, to a more systemic view that humanity is part of nature (D.3.4).

Education, communication and public awareness are key drivers of SU as they provide knowledge and capacity for improved decision-making about the sustainability of exploitation (B.2.15). With greater education, aligning and coordinating policies across sectors, scales and levels of government can create enabling conditions for SU (C.2.2).

- A key gap in historical conservation strategies has been lesser investment in education and communications around sustainable use compared to biodiversity protection.

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