

## Water and Biodiversity

All aspects of human wellbeing depend on water. In turn the planet's water cycle is dependent on and mediated by biodiversity and water-related ecosystems. Water-related ecosystems provide essential functions and services for people, fauna and flora. These systems allow us to grow food and fiber<sup>1</sup>, they provide important habitat for species of fish that feed hundreds of millions of people<sup>2</sup>, they help to absorb and recycle pollution and nutrients, underpin the delivery of water and water quality, and guard against water-related hazards and disasters. Freshwater systems integrate terrestrial ecosystems, and their river basins or catchments, with coastal, and ultimately marine ecosystems. Further, despite covering less than 1% of Earth's surface they are home to approximately one third of vertebrate species and 10% of all species. The importance of biodiversity and water-related ecosystems is reflected in the Sustainable Development Goal 6 and in particular Target 6.6.

Despite the importance of water-related ecosystems, and the biodiversity they harbor, they are among the most threatened globally. At no other time in human history have they been declining as fast. This decline is one element of the biodiversity crisis that the Parties to the Convention on Biological Diversity seek to address through the [Kunming-Montreal Global Biodiversity Framework](#). This global framework sets out an ambitious plan, including 4 goals for 2050 and 23 targets for 2030, to implement broad based action to bring about a transformation in our societies' relationship with biodiversity. As illustrated in the table below the goals and targets of the global biodiversity framework are linked to water and water-related ecosystems in multiple ways.

The main driver of the decline of water-related ecosystems is land-use change. Coastal areas, wetlands, and other areas near river courses, have been particularly subject to conversion or development. As a result, the current rate of wetland loss is three times that of forest loss,<sup>3</sup> with an estimated 30% of natural freshwater ecosystems disappearing since 1970, and 87% of inland wetlands since 1700<sup>4</sup>. The issue of land use change is directly addressed through Targets 1, 2 and 3 of the Global Biodiversity Framework. Additional impacts on water-related ecosystems come from excessive water extraction and over-exploitation (Targets 10 and 16). For example, the exploitation of freshwater resources for agricultural, industrial and domestic consumption too often takes place with little regard to freshwater ecosystems and the services they provide.<sup>5</sup> Additional impacts come from pollution. For example, many water-related ecosystems are threatened by eutrophication due to excess run-off of soil and nutrients from terrestrial areas, especially from agricultural areas and degraded ecosystems (Target 7). Climate change (Target 8) and invasive alien species (Target 6) are also significant drivers of decline. The effects of these pressures on water-related ecosystems and the functions and services they provide could be catastrophic if they are not reversed (Target 11). Even without these additional threats, 1.8 billion people are already estimated to likely live under conditions of regional water stress by 2050<sup>6</sup> and populations of freshwater vertebrate species have declined at more than twice the rate of land or ocean vertebrates<sup>7</sup> (GBF Goal A and Target 4).

The Kunming-Montreal Global Biodiversity Framework calls for urgent action by all of society to halt and reverse biodiversity loss for the benefit of people and planet. If implemented in a coordinated and synergistic manner the action called for will benefit not only biodiversity, but also help to reach other societal objectives, such as those enshrined in the Sustainable Development Goals, and ensure human wellbeing into the future.

**Table 1.** Relevance of water and water-related ecosystems to the Goals and Targets of the Kunming-Montreal Global Biodiversity Framework

<p style="text-align: center;"><b>Kunming-Montreal Global Biodiversity Framework</b></p>	<p style="text-align: center;"><b>Relevance to water and water-related ecosystems</b></p>
<p><b>Goal A</b></p> <p>The integrity, connectivity and resilience of all ecosystems are maintained, enhanced, or restored, substantially increasing the area of natural ecosystems by 2050;</p> <p>Human induced extinction of known threatened species is halted, and, by 2050, the extinction rate and risk of all species are reduced tenfold and the abundance of native wild species is increased to healthy and resilient levels;</p> <p>The genetic diversity within populations of wild and domesticated species, is maintained, safeguarding their adaptive potential.</p>	<p>Land-use change has had the largest negative impact on water-related ecosystems, with additional impacts from water extraction, exploitation, pollution, climate change and invasive species. Moreover, many water-related ecosystems are threatened by eutrophication due to excess run-off of soil and nutrients from terrestrial areas, especially from agricultural areas and degraded ecosystems.<sup>8</sup> Addressing the direct and indirect causes of biodiversity decline in water-related ecosystems is essential to ensure the continue availability and quality of water.</p>
<p><b>Goal B</b></p> <p>Biodiversity is sustainably used and managed and nature’s contributions to people, including ecosystem functions and services, are valued, maintained and enhanced, with those currently in decline being restored, supporting the achievement of sustainable development for the benefit of present and future generations by 2050.</p>	<p>Water-related ecosystems underpin the delivery of water supply, water quality, and guard against water-related hazards and disasters. These ecosystems need to be sustainably used and managed in order to ensure that these essential ecosystem services continue to be available. The unsustainable management of water-related ecosystems is one of the main drivers of their global decline.</p>
<p><b>Goal C</b></p> <p>The monetary and non-monetary benefits from the utilization of genetic resources and digital sequence information on genetic resources, and of traditional knowledge associated with genetic resources, as applicable, are shared fairly and equitably, including, as appropriate with indigenous peoples and local communities, and substantially increased by 2050, while ensuring traditional knowledge associated with genetic resources is appropriately protected, thereby contributing to the conservation and sustainable use of</p>	<p>Access and benefit-sharing creates incentives to preserve genetic diversity and biodiversity and encourages the channeling of benefits towards the conservation and sustainable use of biodiversity. Increasing the amount of benefits shared can help mobilize new resources for the conservation and restoration of water-related ecosystems.</p>

<p>biodiversity, in accordance with internationally agreed access and benefit-sharing instruments.</p>	
<p><b>Goal D</b></p> <p>Adequate means of implementation, including financial resources, capacity-building, technical and scientific cooperation, and access to and transfer of technology to fully implement the Kunming-Montreal Global Biodiversity Framework are secured and equitably accessible to all Parties, especially developing country Parties, in particular the least developed countries and small island developing States, as well as countries with economies in transition, progressively closing the biodiversity finance gap of \$700 billion per year, and aligning financial flows with the Kunming-Montreal Global Biodiversity Framework and the 2050 Vision for biodiversity.</p>	<p>The current biodiversity financing gap is on the order of \$700 billion per year. This gap hinders action for the conservation, restoration and sustainable use of biodiversity, including water-related ecosystems. Closing this gap offers significant opportunities to meet multiple societal challenges in a synergistic manner.</p>
<p><b>Target 1 – Spatial planning</b></p> <p>Ensure that all areas are under participatory, integrated and biodiversity inclusive spatial planning and/or effective management processes addressing land- and sea-use change, to bring the loss of areas of high biodiversity importance, including ecosystems of high ecological integrity, close to zero by 2030, while respecting the rights of indigenous peoples and local communities.</p>	<p>Major drivers of loss and degradation of water-related water ecosystems include direct conversion for agriculture and urban development, pollution due to run-off, invasive species and alteration of flows and hydrological connectivity due to water abstraction and infrastructure such as dams. For river ecosystems, in particular, loss of fluvial or river connectivity is considered one of the main threats<sup>9</sup> and has been linked with the extinction and population declines of freshwater species.<sup>10,11</sup></p> <p>To address this challenge, the use and management of water-related ecosystems need to be better planned and managed. In particular, infrastructure and resource use should include biodiversity-inclusive spatial planning for the conservation of water-related ecosystems and address the multiple, and often distinct, drivers of loss and degradation, including dams and other infrastructure, mining and other extractive activities, increased demand for water, urban expansion, climate change, and invasive species. These threats must be considered both locally and in the context of the connected nature of water-related ecosystems.<sup>12</sup> This target is important for water-related ecosystems, as whole catchments and networks need to be considered to protect freshwater biodiversity. This includes by defining watershed boundaries in management processes.</p>

<p><b>Target 2 – Restoration</b></p> <p>Ensure that by 2030 at least 30 per cent of areas of degraded terrestrial, inland water, and marine and coastal ecosystems are under effective restoration, in order to enhance biodiversity and ecosystem functions and services, ecological integrity and connectivity.</p>	<p>The historic and current rates of loss and degradation of inland water ecosystems are greater than in other realms. Restoration of water-related ecosystems is crucial to reverse biodiversity loss, and can often enhance strategically important ecosystem services, reduce risks and support recovery from natural disasters, aid resilience to climate change impacts and contribute to food security.<sup>13</sup> Restoration activities need to be complimented by measures to reduce the drivers of biodiversity loss.</p>
<p><b>Target 3 – Protected areas and other effective area-based conservation measures</b></p> <p>Ensure and enable that by 2030 at least 30 per cent of terrestrial and inland water areas, and of marine and coastal areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved and managed through ecologically representative, well-connected and equitably governed systems of protected areas and other effective area-based conservation measures, recognizing indigenous and traditional territories, where applicable, and integrated into wider landscapes, seascapes and the ocean, while ensuring that any sustainable use, where appropriate in such areas, is fully consistent with conservation outcomes, recognizing and respecting the rights of indigenous peoples and local communities, including over their traditional territories.</p>	<p>Water-related ecosystems are among the most threatened ecosystems globally. Protected areas and other effective area-based conservation measures are one of the key methods of conserving these areas. The target calls for an expansion of protected areas and other effective area-based conservation measures (OECMs) with specific attention to effective and equitable management, areas of particular importance to biodiversity, ecological representativeness and connectivity. Protection activities need to be complimented by measures to reduce the drivers of biodiversity loss.</p>
<p><b>Target 4 – Conservation and recovery of species</b></p> <p>Ensure urgent management actions to halt human induced extinction of known threatened species and for the recovery and conservation of species, in particular threatened species, to significantly reduce extinction risk, as well as to maintain and restore the genetic diversity within and between populations of native, wild and domesticated species to maintain their adaptive potential, including through in situ and ex situ conservation and sustainable management practices, and effectively manage human-wildlife interactions to minimize human-wildlife conflict for coexistence.</p>	<p>Levels of endemism are high in water-related ecosystems. For example, over half of freshwater fish species are found in just one single ecoregion. As a result of human activities such as pollution, habitat loss, and overexploitation, it is estimated that one third of freshwater species are at a threat of extinction. However, freshwater ecosystems are underrepresented in conservation plans.<sup>14</sup></p>

<p><b>Target 5 – Harvest and trade of wild species</b></p> <p>Ensure that the use, harvesting and trade of wild species is sustainable, safe and legal, preventing overexploitation, minimizing impacts on non-target species and ecosystems, and reducing the risk of pathogen spillover, applying the ecosystem approach, while respecting and protecting customary sustainable use by indigenous peoples and local communities.</p>	<p>Inland water ecosystems harbor significant biodiversity. Preventing the overexploitation of freshwater species is key to protecting biodiversity, including through improved biological assessments, science-based management and development of freshwater fisheries action plans.</p>
<p><b>Target 6 – Invasive alien species</b></p> <p>Eliminate, minimize, reduce and or mitigate the impacts of invasive alien species on biodiversity and ecosystem services by identifying and managing pathways of the introduction of alien species, preventing the introduction and establishment of priority invasive alien species, reducing the rates of introduction and establishment of other known or potential invasive alien species by at least 50 per cent by 2030, and eradicating or controlling invasive alien species, especially in priority sites, such as islands.</p>	<p>Invasive alien species are one of the main direct drivers of biodiversity loss. In many water-related ecosystems, invasive alien species also affect the physical characteristics of ecosystems by altering the movement of water, sediment and nutrients, and by impacting oxygen and light availability. Preventing the establishment of invasive alien species and controlling or eliminating already established species is key to protecting water-related ecosystems. This can be done by identifying and regulating major introduction pathways such as trade and ballast water transfers, as well as through the removal of existing invasive alien species.</p>
<p><b>Target 7 – Pollution</b></p> <p>Reduce pollution risks and the negative impact of pollution from all sources by 2030, to levels that are not harmful to biodiversity and ecosystem functions and services, considering cumulative effects, including: reducing excess nutrients lost to the environment by at least half including through more efficient nutrient cycling and use; reducing the overall risk from pesticides and highly hazardous chemicals by at least half including through integrated pest management, based on science, taking into account food security and livelihoods; and also preventing, reducing, and working towards eliminating plastic pollution.</p>	<p>Pollution is one of the main drivers of biodiversity loss and has particularly harmful impacts in water-related ecosystems. Combatting pollution at its source will help improve water quality, increase water availability,<sup>15</sup> and protect public health. This can be achieved through wastewater treatment and re-use, regulation of polluting industries, market-based solutions, improved agricultural practices especially with regard to fertilizer use, manure management and erosion control, integrated river-basin management and nature-based solutions such as floodplain and coastal wetland restoration and riparian buffer zones.<sup>16</sup></p>

<p><b>Target 8 – Biodiversity and climate change</b></p> <p>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 solution and/or ecosystem-based approaches, while minimizing negative and fostering positive impacts of climate action on biodiversity.</p>	<p>Water-related ecosystems have enormous potential to contribute to climate change mitigation through carbon storage in wetlands, and to adaptation through ecosystem resilience. For example, wetlands are important for the regulation of global climate change through sequestering and releasing a major proportion of fixed carbon in the biosphere. Although covering only 3–4% of the world’s land area, peatlands are estimated to hold 540 gigatons of carbon, representing about 1.5% of the total estimated global carbon storage and about 25–30% of that contained in terrestrial vegetation and soils. Removing pressures on wetlands, such as mangroves and river floodplains, improves their resilience and therefore their ability to reduce disaster risk and mitigate the impacts of extreme weather events (and natural catastrophes such as tsunamis). Conversely inland water ecosystems are also particularly vulnerable to the impacts of climate change. For example, growing evidence suggests that shifts in the frequency of extreme flow events will have major impacts on freshwater biodiversity.</p>
<p><b>Target 9 – Sustainable use of wild species</b></p> <p>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 sustainable biodiversity-based activities, products and services that enhance biodiversity, and protecting and encouraging customary sustainable use by indigenous peoples and local communities.</p>	<p>Freshwater species are among the most threatened. Unsustainable use is one of the main drivers of their decline. Actions to improve the sustainable management of wild species, and thereby ensuring the continued provisions of benefits to people, is essential for freshwater species.</p>
<p><b>Target 10 – Sustainable agriculture, aquaculture, fisheries and forestry</b></p> <p>Ensure that areas under agriculture, aquaculture, fisheries and forestry are managed sustainably, in particular through the sustainable use of biodiversity, including through a substantial increase of the application of biodiversity friendly practices, such as sustainable intensification, agroecological and other innovative approaches, contributing to the resilience and long-term efficiency and productivity of these production systems, and to food security, conserving and restoring biodiversity and maintaining nature’s contributions to people, including ecosystem functions and services.</p>	<p>Many water-related ecosystems are impacted by production activities from various economic sectors. For example, 70% of global freshwater withdrawals are used for agriculture and many inland water and coastal ecosystems are threatened by eutrophication due to excess run-off of soil and nutrients from terrestrial areas, especially from agricultural areas and degraded ecosystems. Therefore, measures towards sustainable management, production and consumption will help reduce stress on freshwater ecosystems by reducing the overall demand for products.</p>

<p><b>Target 11 – Ecosystem functions and services</b></p> <p>Restore, maintain and enhance nature’s contributions to people, including ecosystem functions and services, such as the regulation of air, water and climate, soil health, pollination and reduction of disease risk, as well as protection from natural hazards and disasters, through nature-based solutions and/or ecosystem-based approaches for the benefit of all people and nature.</p>	<p>Water-related ecosystems, such as lakes, rivers and wetlands, perform vital functions and services for people, fauna and flora. These systems allow us to grow food and fiber<sup>17</sup>, they provide important habitat for species of fish that feed hundreds of millions of people<sup>18</sup>, they help to absorb and recycle pollution and nutrients, underpin the delivery of water and water quality, and guard against water-related hazards and disasters. The decline of water-related ecosystems threatens the provision of these services and therefore urgent action is needed to conserve and restore them, particularly as it is estimated that 1.8 billion people are likely to live under conditions of regional water stress by 2050.<sup>19</sup> As such coherent and integrated action is necessary to the restoration, maintenance, and enhancement of water-related ecosystems.</p>
<p><b>Target 12 – Green/blues spaces in urban areas</b></p> <p>Significantly increase the area and quality, and connectivity of, access to, and benefits from green and blue spaces in urban and densely populated areas sustainably, by mainstreaming the conservation and sustainable use of biodiversity, and ensure biodiversity-inclusive urban planning, enhancing native biodiversity, ecological connectivity and integrity, and improving human health and well-being and connection to nature, and contributing to inclusive and sustainable urbanization and to the provision of ecosystem functions and services.</p>	<p>Water-related ecosystems exist within and in proximity to urban and densely populated areas. These ecosystems are often essential to the supply of water, help guard against water-related hazards and disasters and contribute to emotional and physical wellbeing. Natural, restored and constructed water-related ecosystems within or in proximity to urban and densely populated areas can help to maintain and enhance these services.</p>
<p><b>Target 13 – Access and benefit-sharing</b></p> <p>Take effective legal, policy, administrative and capacity-building measures at all levels, as appropriate, to ensure the fair and equitable sharing of benefits that arise from the utilization of genetic resources and from digital sequence information on genetic resources, as well as traditional knowledge associated with genetic resources, and facilitating appropriate access to genetic resources, and by 2030, facilitating a significant increase of the benefits shared, in accordance with applicable international access and benefit-sharing instruments.</p>	<p>Access and benefit-sharing creates incentives to preserve the genetic diversity and biodiversity and encourages the channeling of benefits towards conservation and sustainable use of biodiversity. Increasing the amount of benefits shared can help mobilize new resources for the conservation and restoration of water-related ecosystems.</p>
<p><b>Target 14 – Mainstreaming biodiversity across sectors</b></p>	<p>Water-related ecosystems and biodiversity underpins a wide range of services</p>

<p>Ensure the full integration of biodiversity and its multiple values into policies, regulations, planning and development processes, poverty eradication strategies, strategic environmental assessments, environmental impact assessments and, as appropriate, national accounting, within and across all levels of government and across all sectors, in particular those with significant impacts on biodiversity, progressively aligning all relevant public and private activities, and fiscal and financial flows with the goals and targets of this framework.</p>	<p>that support economies, food production systems, secure living conditions and human health. In addition, these ecosystems and biodiversity are central to many cultures, spiritual beliefs and worldviews and have intrinsic value in their own right. However, the values of biodiversity are not widely reflected in decision-making. Integrating and reflecting the contribution of biodiversity, and the ecosystem services it provides, in relevant strategies, policies, programmes, is an important element in ensuring that the diverse values of biodiversity and the opportunities derived from its conservation and sustainable use are recognized and reflected in decision-making.</p>
<p><b>Target 15 – Business and biodiversity</b></p> <p>Take legal, administrative or policy measures to encourage and enable business, and in particular to ensure that large and transnational companies and financial institutions:</p> <ul style="list-style-type: none"> <li>(a) Regularly monitor, assess, and transparently disclose their risks, dependencies and impacts on biodiversity, including with requirements for all large as well as transnational companies and financial institutions along their operations, supply and value chains, and portfolios;</li> <li>(b) Provide information needed to consumers to promote sustainable consumption patterns;</li> <li>(c) Report on compliance with access and benefit-sharing regulations and measures, as applicable;</li> </ul> <p>in order to progressively reduce negative impacts on biodiversity, increase positive impacts, reduce biodiversity-related risks to business and financial institutions, and promote actions to ensure sustainable patterns of production.</p>	<p>All businesses depend on water in some way and have impacts on water and/or water-related ecosystems. Better identifying and understanding these dependencies and impacts is essential to inform business practices. This requires putting in place measures to promote or require the regular monitoring, assessment and disclosure of these dependencies and impacts.</p>
<p><b>Target 16 – Sustainable consumption</b></p> <p>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 and accurate information and alternatives, and by 2030, reduce the global footprint of consumption in an equitable manner, including through halving global food waste, significantly reducing overconsumption and substantially reducing waste generation, in order for all people to live well in harmony with Mother</p>	<p>Consumption and production patterns are an important cause of biodiversity loss. For example, the global food system is associated with many drivers of biodiversity loss, in particular through land-use change, the impacts of excess nutrients lost to the environment, and the generation of greenhouse gases, all pressures causing significant impacts on water-related ecosystems and biodiversity. Changes in dietary patterns and food waste could help to reduce these impacts by reducing the overall demand for resources and would bring substantial benefits and minimize negative trade-offs. Therefore, measures taken towards sustainable consumption will help reduce stress on freshwater ecosystems.</p>



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<p><b>Target 17 – Biosafety</b></p> <p>Establish, strengthen capacity for, and implement in all countries, biosafety measures as set out in Article 8(g) of the Convention on Biological Diversity and measures for the handling of biotechnology and distribution of its benefits as set out in Article 19 of the Convention.</p>	<p>As biotechnology rapidly advances, many applications bring the potential to address many aspects impacting water-related ecosystems and the services they provide, such as water quality, aquatic biodiversity and sustainable aquaculture, among others. While ensuring that the potential risks can be minimized and properly managed, biosafety measures also promote the safe handling and distribution benefits of the technology.</p>
<p><b>Target 18 – Subsidies and incentives</b></p> <p>Identify by 2025, and eliminate, phase out or reform incentives, including subsidies, harmful for biodiversity, in a proportionate, just, fair, effective and equitable way, while substantially and progressively reducing them by at least \$500 billion per year by 2030, starting with the most harmful incentives, and scale up positive incentives for the conservation and sustainable use of biodiversity.</p>	<p>Incentives, including harmful subsidies, are an important indirect cause of biodiversity loss. They generally emanate from policies or programmes that induce unsustainable behaviour harmful to biodiversity, often as unanticipated and unintended side effects of policies or programmes designed to achieve other objectives. For example, harmful subsidies in agriculture and water tend to result in excessive water consumption and practices which damage water-related ecosystems<sup>20</sup>. Eliminating, phasing out or reforming such incentives and scaling up the use of incentives which are positive for conservation and sustainable use is essential.</p>
<p><b>Target 19 – Increasing resources for biodiversity</b></p> <p>Substantially and progressively increase the level of financial resources from all sources, in an effective, timely and easily accessible manner, including domestic, international, public and private resources, in accordance with Article 20 of the Convention, to implement national biodiversity strategies and action plans, mobilizing at least \$200 billion per year by 2030, including by:</p> <p>(a) Increasing total biodiversity related international financial resources from developed countries, including official development assistance, and from countries that voluntarily assume obligations of developed country Parties, to developing countries, in particular the least developed countries and small island developing States, as well as countries with economies in transition, to at least \$20 billion per year by 2025, and to at least \$30 billion per year by 2030;</p>	<p>The current biodiversity funding gap is estimated at 700 billion dollars per year. This gap makes it difficult to put in place the measures required to effectively conserve biodiversity, including water-related ecosystems. Addressing the gap in biodiversity funding is urgent, particularly as biodiversity funding has the potential to assist in reaching other societal objectives, including those related to water. For example, efforts to conserve, protect and make more sustainable use of water-related ecosystems would contribute to Sustainable Development Goal 6.6.</p>

<ul style="list-style-type: none"> <li>(b) Significantly increasing domestic resource mobilization, facilitated by the preparation and implementation of national biodiversity finance plans or similar instruments according to national needs, priorities and circumstances;</li> <li>(c) Leveraging private finance, promoting blended finance, implementing strategies for raising new and additional resources, and encouraging the private sector to invest in biodiversity, including through impact funds and other instruments;</li> <li>(d) Stimulating innovative schemes such as payment for ecosystem services, green bonds, biodiversity offsets and credits, and benefit-sharing mechanisms, with environmental and social safeguards;</li> <li>(e) Optimizing co-benefits and synergies of finance targeting the biodiversity and climate crises;</li> <li>(f) Enhancing the role of collective actions, including by indigenous peoples and local communities, Mother Earth centric actions<sup>21</sup> and non-market-based approaches including community based natural resource management and civil society cooperation and solidarity aimed at the conservation of biodiversity;</li> <li>(g) Enhancing the effectiveness, efficiency and transparency of resource provision and use;</li> </ul>	
<p><b>Target 20 – Capacity-building and development</b></p> <p>Strengthen capacity-building and development, access to and transfer of technology, and promote development of and access to innovation and technical and scientific cooperation, including through South-South, North-South and triangular cooperation, to meet the needs for effective implementation, particularly in developing countries, fostering joint technology development and joint scientific research programmes for the conservation and sustainable use of biodiversity and strengthening scientific research and monitoring capacities, commensurate with the ambition of the goals and targets of the Framework.</p>	<p>The capacity to conserve, sustainably use, monitor and research biodiversity, including in water-related ecosystems, needs to be increased. This can be accomplished in different ways including through scientific and technical cooperation and the improved access and transfer of technology.</p>
<p><b>Target 21 – Information and knowledge</b></p> <p>Ensure that the best available data, information and knowledge are accessible to decision makers, practitioners and the public to guide effective and equitable</p>	<p>There are important gaps in the quantity, quality and accessibility of biodiversity data and knowledge and associated socio-economic issues. This impairs effective decision making. Increased efforts are required to address this challenge, particularly for water-related ecosystems.<sup>23</sup> Improvements in</p>

<p>governance, integrated and participatory management of biodiversity, and to strengthen communication, awareness-raising, education, monitoring, research and knowledge management and, also in this context, traditional knowledge, innovations, practices and technologies of indigenous peoples and local communities should only be accessed with their free, prior and informed consent,<sup>22</sup> in accordance with national legislation.</p>	<p>information and knowledge would not only improve conservation outcomes for biodiversity but also assist in the management of water and water-related services.</p>
<p><b>Target 22 – Participation of indigenous peoples and local communities</b></p> <p>Ensure the full, equitable, inclusive, effective and gender-responsive representation and participation in decision-making, and access to justice and information related to biodiversity by indigenous peoples and local communities, respecting their cultures and their rights over lands, territories, resources, and traditional knowledge, as well as by women and girls, children and youth, and persons with disabilities and ensure the full protection of environmental human rights defenders.</p>	<p>Indigenous peoples and local communities have a long history of managing biological resources, including water and water-related ecosystems. However, the knowledge, experiences and rights of indigenous peoples and local communities are often ignored in decision making processes. A greater recognition of the rights and contributions of indigenous peoples and local communities is an essential element in the conservation and sustainable use of biodiversity.</p>
<p><b>Target 23 – Participation of women and girls</b></p> <p>Ensure gender equality in the implementation of the Framework through a gender-responsive approach, where all women and girls have equal opportunity and capacity to contribute to the three objectives of the Convention, including by recognizing their equal rights and access to land and natural resources and their full, equitable, meaningful and informed participation and leadership at all levels of action, engagement, policy and decision-making related to biodiversity.</p>	<p>Gender roles in many countries have an effect on the use and management of biodiversity by influencing social norms related to the access to and control of land, biological resources and other productive assets. For example, in many places the primary responsibility for the collection of water, lies with women and girls and there are numerous examples of the disproportionate impacts of a decline in water-related ecosystems and services on women and girls.</p> <p>Considering gender dimensions in biodiversity management is therefore important and can lead to positive outcomes for both biodiversity and gender equality.</p>

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