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BIODIVERSITY AND THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT

Note by the Executive Secretary

Addendum

I. INTRODUCTION

1. At its thirteenth meeting, the Conference of the Parties welcomed the adoption of the 2030 Agenda for Sustainable Development¹ (see [decision XIII/3](#), para. 3), recognized the strong interdependence between the Strategic Plan for Biodiversity 2011-2020 and the Sustainable Development Goals in which biodiversity is included in numerous goals and targets (para. 9). In addition, it recognized that the implementation of the 2030 Agenda for Sustainable Development provides a major opportunity for the mainstreaming of biodiversity and for the achievement of the [Aichi Biodiversity Targets](#) (para.10). Further, the Conference of the Parties called for an integrated approach to the implementation of the strategies and plans for the 2030 Agenda and of national biodiversity strategies and actions plans (paras. 14 and 15).

2. The Conference of the Parties requested the Executive Secretary, building on information that is already available, to prepare a further assessment, including a gap analysis, on the relationship between the Aichi Biodiversity Targets and the Sustainable Development Goals for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice at a meeting held prior to the fourteenth meeting of the Conference of the Parties (decision XIII/1, para. 35).

3. The previous analyses prepared by the Secretariat and others have shown how the Aichi Biodiversity Targets are reflected in the Sustainable Development Goals and related targets,² and how biodiversity and the Aichi Targets contribute to each of the Sustainable Development Goals.³ Additional analyses have also been prepared, extending these analyses.⁴ The present note, which builds upon and complements these analyses, provides a summary of the links between the Sustainable Development Goals and related targets and the Aichi Biodiversity Targets (section II), identifies any gaps and inconsistencies (section II), explores how the 2030 Agenda provides an enabling environment for the achievement of the Aichi Biodiversity Targets as well as the longer-term goals of the Strategic Plan for Biodiversity 2011-2020 and its 2050 Vision (section III), and discusses implications for the mutually

* CBD/SBSTTA/21/1.

¹ See General Assembly resolution 70/1 of 25 September 2015 entitled “Transforming our world: the 2030 Agenda for Sustainable Development”.

² “Links between the Aichi Biodiversity Targets and the 2030 agenda for Sustainable Development” (UNEP/CBD/SBSTTA/19/INF/9), 22 October 2015.

³ See “Biodiversity and sustainable development: Technical note” (UNEP/CBD/COP/13/10/Add.1), 21 October 2016 (prepared in collaboration with FAO, UNDP, UNEP and the World Bank).

⁴ Shultz, et al (2017). “The 2030 Agenda and ecosystems – a discussion paper on the links between the Aichi Biodiversity Targets and the Sustainable Development Goals”. SwedBio at Stockholm Resilience Centre.

reinforcing implementation of the two frameworks (section IV). Relevant recommendations are included in the note by the Executive Secretary on scenarios for the 2050 Vision for biodiversity (CBD/SBSTTA/21/2).

II. LINKS BETWEEN THE SUSTAINABLE DEVELOPMENT GOALS AND RELATED TARGETS AND THE AICHI BIODIVERSITY TARGETS

A. How the Aichi Biodiversity Targets are reflected in the Sustainable Development Goals and related targets

4. Most of the Aichi Biodiversity Targets are well reflected in the Sustainable Development Goals and related targets. In many cases, the Aichi Biodiversity Targets provided the inspiration for the corresponding targets under the Sustainable Development Goals, reflecting the role of the Convention in setting the global biodiversity agenda and the comprehensive nature of the Strategic Plan for Biodiversity 2011-2020.

5. There are two notable exceptions. Aichi Biodiversity Targets 17 (NBSAPs adopted as policy instruments) and 18 (traditional knowledge respected). The absence of a specific mention of national biodiversity strategies and actions plans in the 2030 Agenda is not surprising given its broad scope. However, the general issue of the integration of biodiversity into national plans is well covered in Sustainable Development Goal target 15.9, which closely reflects the wording of Aichi Biodiversity Target 2. The absence of a specific reference to the role of traditional knowledge (except with reference to genetic resources in SDG target 2.5) appears to be a genuine gap given the importance of traditional knowledge and the customary practices of indigenous people and local communities to many of the Sustainable Development Goals.⁵

6. Other than this, there are differences in the details between the corresponding targets of the 2030 Agenda and the Strategic Plan for Biodiversity 2011-2020. As might be expected, the Aichi Biodiversity Targets are more specific to biodiversity and include more detailed elements than the corresponding targets under the Sustainable Development Goals.⁶ These differences are described in the summary table contained in UNEP/CBD/SBSTTA/19/INF/9⁷ with further analysis provided in Shultz et al (2017).^{8,9}

7. While, overall, the anticipated completion date for the targets under the Sustainable Development Goals is 2030, many of the biodiversity-related targets in the 2030 Agenda have target dates of 2020, reflecting their origin in the Aichi Biodiversity Targets. The development of the post-2020 global biodiversity framework under the Convention may provide an opportunity to address this matter by developing biodiversity targets for 2030. However, there are a few cases of a mismatch between the completion dates under the two frameworks. Table 1 lists these cases as well as other inconsistencies. There are also a number of biodiversity-related targets under the Sustainable Development Goals that do not specify a completion date.

⁵ See the analysis in “In-depth dialogue: ‘Contribution of the traditional knowledge, innovations and practices of indigenous peoples and local communities to the implementation of the 2030 Agenda for Sustainable Development with particular emphasis on conservation and sustainable use of biodiversity’” (document for the tenth meeting of the Ad Hoc Open-ended Working Group on Article 8(j) and Related Provisions (CBD/WG8J/10/10)).

⁶ Aichi Biodiversity Target 2 is closely matched by Sustainable Development Goal target 15.9. Aichi Biodiversity Targets 1, 19, and 20 are well covered by targets under the Sustainable Development Goals, though, as would be expected, the Sustainable Development Goal targets are more general while the Aichi Targets specifically refer to biodiversity. Aichi Biodiversity Targets 4-16 are fairly well covered by the Sustainable Development Goal targets though the Aichi Targets include more specific elements. Aichi Biodiversity Target 3 is covered only in part by the Sustainable Development Goals (the Sustainable Development Goal target 14.6 refers only to fishery subsidies, though the language on subsidies is stronger than what is in the Aichi Biodiversity Target).

⁷ In this document there is an omission in the analysis of gaps for Aichi Biodiversity Target 5. Aichi Biodiversity Target 5 specifies that the rate of loss of all natural habitats should at least be halved by 2020, while Sustainable Development Goal 15.2 refers to forests only, calling for a halt to deforestation by 2020. This difference should have been highlighted in the document.

⁸ Shultz et al (2017). The 2030 Agenda and Ecosystems – a discussion paper on the links between the Aichi Biodiversity Targets and the Sustainable Development Goals. SwedBio at Stockholm Resilience Centre.

⁹ The two analyses are broadly consistent. However, for each Aichi Biodiversity Target UNEP/CBD/SBSTTA/19/INF/9 only focuses on the most relevant Sustainable Development Goal targets, while Shultz et al (2017) provides a longer list.

Table 1. Inconsistencies between some elements of the targets under the Sustainable Development Goals and the corresponding Aichi Biodiversity Targets

<i>Element</i>	<i>Inconsistencies</i>
Awareness	Aichi Biodiversity Target 1 calls for people to be aware of the values of biodiversity by 2020, while SDG target 12.8 calls for awareness for sustainable development by 2030.
Sustainable production and consumption	The Aichi Biodiversity Target 4 aims for 2020, while the SDG targets (8.4, 9.4, 12.2) aim for 2030. However, the scope of the targets is different and therefore they are potentially compatible.
Reducing rates of deforestation	Aichi Biodiversity Target 5 calls for deforestation (and loss of other natural habitats) to be at least halved by 2020, while SDG target 15.2 calls for deforestation to be halted by 2020.
Sustainable agriculture	Aichi Biodiversity Target 7 calls for sustainability by 2020, while the SDG targets (2.4; 12.2) indicate 2030.
Pollution	Aichi Biodiversity Target 8 has a target date of 2020 and applies to terrestrial, freshwater and marine ecosystems, while the SDG target 14.1 indicates 2025 and applies to pollution in the marine environment only. Both targets emphasize nutrient pollution, the SDG target also highlights marine debris.
Protected areas	The 10% quantitative target and 2020 completion date of Aichi Biodiversity Target 11 is reflected in the corresponding marine SDG target 14.5 but there is no corresponding quantitative terrestrial target under Goal 15. However, SDG target 15.1 provides for the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems in line with obligations under international agreements.
Restoration	Aichi Biodiversity Target 15 refers to 2020, while the SDG target 15.3 aims for 2030. However, the scope of the targets is different and therefore they are potentially compatible.
Benefit-sharing	Aichi Biodiversity Target 16 refers to 2015, while the SDG target 15.6 does not specify a date.
Resource mobilization	Aichi Biodiversity Target 20 refers to 2020, while the SDG targets (1a, 10b, 17.3) do not specify a date.

B. Relevance of biodiversity to the Sustainable Development Goals

8. Biodiversity is relevant to all of the Sustainable Development Goals, and not just those specific targets in the Sustainable Development Goal framework that reflect the Aichi Biodiversity Targets. Two of the Sustainable Development Goals — Goals 14 (“Life below water”) and 15 (“Life on land”) — deal directly with biodiversity. Other Goals — notably Goals 2 (“Zero Hunger”) and 6 (“clean water and sanitation”) — also depend directly on biodiversity. The role of biodiversity in supporting the achievement of each of the Sustainable Development Goals is explored in a Secretariat technical note on biodiversity and sustainable development¹⁰ and in a discussion paper by Shultz et al (2017).¹¹

¹⁰ UNEP/CBD/COP/13/10/Add.1, 21 October 2016 (prepared in collaboration with FAO, UNDP, UNEP and the World Bank and issued for the thirteenth meeting of the Conference of the Parties).

¹¹ Shultz et al (2017). “The 2030 Agenda and Ecosystems – a discussion paper on the links between the Aichi Biodiversity Targets and the Sustainable Development Goals”. SwedBio at Stockholm Resilience Centre.

9. While biodiversity is important for the achievement of the Sustainable Development Goals, the converse is also true: the 2030 Agenda provides an important enabling environment for the achievement of the Aichi Biodiversity Targets and progress in the implementation of the Strategic Plan for Biodiversity 2011-2020, including, in the longer term, progress towards the 2050 Vision. This relationship has not been comprehensively or systematically explored under the Convention to date and, accordingly, is examined further in section III of the present note.

III. THE 2030 AGENDA AS AN ENABLING ENVIRONMENT FOR IMPLEMENTATION OF THE STRATEGIC PLAN FOR BIODIVERSITY 2011-2020, ACHIEVEMENT OF ITS AICHI BIODIVERSITY TARGETS, AND PROGRESS TOWARDS ITS 2050 VISION

10. The Conference of the Parties has recognized that the implementation of the 2030 Agenda for Sustainable Development provides a major opportunity for the mainstreaming of biodiversity and for the achievement of the Aichi Biodiversity Targets. The 2030 Agenda may support the implementation of the Strategic Plan for Biodiversity 2011-2020, achievement of the Aichi Biodiversity Targets, and progress towards the 2050 Vision in a number of ways:

(a) Many Sustainable Development Goals and related targets address the drivers of biodiversity loss (for example climate change, pollution and overexploitation as well as unsustainable production and consumption). Addressing these will help to reduce pressure on biodiversity;

(b) Many Sustainable Development Goals relate to the building of institutions and human capital (for example through education), and the strengthening of equality and rights (while noting the concern expressed above relating to indigenous and local knowledge). These therefore provide an enabling environment conducive to improved governance of factors affecting biodiversity;

(c) A number of Sustainable Development Goals and their respective targets recognize the role of biodiversity and ecosystem services in achieving the Goals. This recognition aids the mainstreaming of biodiversity into the relevant sectors by providing incentives for its conservation and sustainable use, and is a valuable basis for further building recognition of the role of biodiversity and ecosystem services in addressing the Sustainable Development Goals.

11. There are also potential trade-offs among the Sustainable Development Goals. Some of these trade-offs may be between a particular Goal and biodiversity objectives. Addressing these potential trade-offs requires an integrated and coherent approach to action, a point recognized in the 2030 Agenda itself, as well as the mainstreaming of biodiversity across a range of sectors. For example, increased economic growth, called for in Goal 8, other things being equal, is likely to increase production and consumption and corresponding drivers of change and thereby increase pressures on biodiversity. To avoid such impacts there is a need, as specified in target 8.4 under the goal, to “improve progressively, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation”. Such relationships are examined for each of the Sustainable Development Goals in the annex.

12. An analysis of the potential synergies and trade-offs among the Sustainable Development Goals and related targets, being undertaken by a team of researchers under the auspices of the International Council on Science,¹² suggests that an overwhelming majority of the interactions are positive, but a few are negative. Focussing on interactions of four targets, the analysis “found no fundamental incompatibilities between goals (i.e. where one target as defined in the 2030 Agenda would make it impossible to achieve another). However, it did identify a set of potential constraints and conditionalities that require coordinated policy interventions to shelter the most vulnerable groups, promote equitable access to services and development opportunities, and manage competing demands over natural resources

¹² International Council for Science (ICSU), 2017. A Guide to SDG Interactions: from Science to Implementation [D.J. Griggs, M. Nilsson, A. Stevance, D. McCollum (eds)]. International Council for Science, Paris. See also Griggs et al (2016) Policy: Map the interactions between Sustainable Development Goals. *Nature*. 534, 320-321.

to support economic and social development within environmental limits.” The analysis also highlights the issue of time lags, noting that some impacts from certain actions may not be immediately visible but are nonetheless important. For example, increased fertilizer use may boost crop yields in the short term but could have a negative effect through increased pollution in the long term. Given these time lags, decision makers need to be strategic and consider the effects of the actions being taken in terms of both potential benefits and impacts over different time scales. In the same way, consideration needs to be given to the fact that some impacts may be potentially reversible (such as forest loss) while others can be permanent (such as species extinction). These sorts of points need to be considered in efforts to achieve the set of Sustainable Development Goals simultaneously.

Table 2. Illustration of the enabling, contributing and potential constraining relationships between biodiversity and the Sustainable Development Goals

<i>Sustainable Development Goals</i>	<i>Appropriate consideration of biodiversity has a significant positive effect on reaching the Goal</i>	<i>Reaching the Goal has a significant positive effect on biodiversity</i>		<i>Reaching the Goal while protecting biodiversity are potentially constraining</i>
		<i>Contributing¹³</i>	<i>Enabling¹⁴</i>	
Goal 1. No poverty			✓	✓
Goal 2. Zero hunger	✓	✓	✓	✓
Goal 3. Good health and well-being	✓		✓	
Goal 4. Quality education			✓	
Goal 5. Gender equality			✓	
Goal 6. Clean water and sanitation	✓	✓	✓	
Goal 7. Affordable and clean energy		✓		✓
Goal 8. Decent work and economic growth			✓	✓
Goal 9. Industry, innovation and infrastructure			✓	✓
Goal 10. Reduced inequalities			✓	
11. Sustainable communities	✓	✓		
12. Responsible consumption and production		✓		
13. Climate action	✓	✓		✓
14. Life below water	✓	✓		
15. Life on land	✓	✓		
16. Peace, justice, and strong institutions			✓	
17. Partnerships for the goals			✓	

¹³ “Contributing” refers to a relationship in which addressing the Sustainable Development Goal will directly address a major direct pressure on biodiversity.

¹⁴ “Enabling” refers to a relationship in which addressing the Sustainable Development Goal will improve the enabling environment for addressing biodiversity issues.

13. Previous work under the Convention on tipping points is also relevant in this respect.^{15,16} Another issue to note is that while the analyses that have been conducted have tended to focus on global level interactions, the interactions/trade-offs between the Sustainable Development Goals and Aichi Targets may vary with the scale considered (local, national, regional global, etc.). For this reason actions need to be tailored to their context. Other studies have come to similar conclusions.^{17,18,19,20} Table 2 provides a summary of the key interactions between the Sustainable Development Goals and biodiversity objectives.

IV. MUTUALLY REINFORCING IMPLEMENTATION OF THE 2030 AGENDA AND THE STRATEGIC PLAN FOR BIODIVERSITY 2011-2020 AND THE POST-2020 GLOBAL BIODIVERSITY FRAMEWORK

14. In the preamble to the resolution adopting the 2030 Agenda, it is recognized that the Sustainable Development Goals are “integrated and indivisible”. Overall, it may be considered that many targets are enabling of others – providing the conditions necessary for their achievement. Similarly, overall, biodiversity is likely to benefit greatly from actions to reach the Sustainable Development Goals both by directly addressing pressures on biodiversity and by enhancing the enabling environment for implementing the Strategic Plan for Biodiversity 2011-2020, and a potential post-2020 global biodiversity framework, towards the achievement of the 2050 Vision for Biodiversity.

15. With regard to structure and process, the 2030 Agenda also contains various elements that also found in the Strategic Plan for Biodiversity. For example:

- (a) Both plans set out global visions and provide ambitious frameworks for action to bring about transformational change;
- (b) Both plans recognize that different national circumstances and priorities exist and that these will need to be considered when governments plan and take action;
- (c) Both plans recognize the interconnections between their respective goals and targets and their indivisible nature;
- (d) Both plans set out means of implementation, including provisions for the development or adoption of national plans or targets to translate the global goals and targets to national realities;
- (e) Both plans contain provisions on monitoring progress, including by making use of indicators.

16. On the whole, the 2030 Agenda and the Strategic Plan for Biodiversity 2011-2020 are mutually supportive. However, depending on the specific actions taken to implement the 2030 Agenda, it is

¹⁵ Secretariat of the Convention on Biological Diversity (2010). *Global Biodiversity Outlook*, third edition. Montreal, Canada. <https://www.cbd.int/doc/publications/gbo/gbo3-final-en.pdf>.

¹⁶ Leadley, P., Pereira, H.M., Alkemade, R., Fernandez-Manjarrés, J.F., Proença, V., Scharlemann, J.P.W., Walpole, M.J. (2010). *Biodiversity Scenarios: Projections of 21st century change in biodiversity and associated ecosystem services*. Secretariat of the Convention on Biological Diversity, Montreal. Technical Series no. 50, 132 pages. <https://www.cbd.int/doc/publications/cbd-ts-50-en.pdf>.

¹⁷ Coopman, A., et al. (n.d.) *Seeing the Whole - Implementing the SDGs in an Integrated and Coherent Way - A research pilot by Stakeholder Forum, Bioregional and Newcastle University*. <http://www.stakeholderforum.org/fileadmin/files/SeeingTheWhole.ResearchPilotReportOnSDGsImplementation.pdf>

¹⁸ UNEP (2015). *Policy Coherence of the Sustainable Development Goals – A Natural Resource Perspective*. An International Resource Panel Report. http://www.un-ilibrary.org/environment-and-climate-change/policy-coherence-of-the-sustainable-development-goals_81b897e4-en.

¹⁹ LeBlanc, D. (2015). *Towards integration at last? The sustainable development goals as a network of targets*. Department of Economic and Social Affairs Working Paper No. 141 ST/ESA/2015/DWP/141. http://www.un.org/esa/desa/papers/2015/wp141_2015.pdf.

²⁰ Scharlemann JPW, et al (2016) *Global Goals Mapping: The Environment-human Landscape. A contribution towards the NERC, The Rockefeller Foundation and ESRC initiative, Towards a Sustainable Earth: Environment-human Systems and the UN Global Goals*. Sussex Sustainability Research Programme, University of Sussex, Brighton, United Kingdom, and UN Environment World Conservation Monitoring Centre, Cambridge, United Kingdom.

possible that there could be some trade-offs – with negative impacts on biodiversity. Implementing the 2030 Agenda for Sustainable Development will require the involvement of range of actors from various sectors, some of whom will have limited direct focus or interest in biodiversity. Their actions have the potential to both benefit and hinder biodiversity objectives. Therefore, the mainstreaming of biodiversity will greatly increase the prospects for finding optimal means of reaching the Sustainable Development Goals while also addressing biodiversity concerns.

17. Where action towards the achievement of a given Sustainable Development Goal has a potential for a negative impact on biodiversity (including on Goals 14 and 15), this implies that care will be needed to select pathways that are compatible with both objectives. Thus, the Goals may be viewed as constraining the choice of particular pathways of achieving a given Sustainable Development Goal, rather than representing a fundamental contradiction. Further, many of the approaches required to avoid these potential negative impacts are already specified in the targets associated with the Sustainable Development Goals.

18. Given the universal support among countries for the 2030 Agenda for Sustainable Development, and the complementarities, in both content and process, between the 2030 Agenda and the Strategic Plan for Biodiversity, the 2030 Agenda should be considered in any follow up to the Strategic Plan for Biodiversity. Further, the attainment of the Sustainable Development Goals and the Aichi Biodiversity Targets calls for policy coherence and integrated approaches to addressing global challenges. This echoes the conclusions of numerous assessments, including the third and fourth editions of the *Global Biodiversity Outlook*.

*Annex***HOW THE SUSTAINABLE DEVELOPMENT GOALS CONTRIBUTE TO THE IMPLEMENTATION OF THE STRATEGIC PLAN FOR BIODIVERSITY 2011-2020****Goal 1. End poverty in all its forms everywhere**

1. Ending poverty is an overarching societal goal. In many places, poverty is an underlying pressure on biodiversity as individuals who are directly reliant on biodiversity and ecosystem services for their daily subsistence needs are often forced to use biological resources beyond what is sustainable. With few livelihood alternatives, this can result in unsustainable actions, prevent long-term decision-making regarding resource use and create poverty traps. Alleviating poverty can therefore help to limit the pressures on biodiversity by removing direct dependence on certain ecosystem services for livelihoods.

2. Individual targets under this Sustainable Development Goal also cover issues which, if addressed, would facilitate the implementation of the Strategic Plan for Biodiversity. For example:

(a) Target 1.4 addresses access and control over land and other forms of property as well as natural resources. This would allow people to take a longer-term perspective and therefore incentivize sustainable use;

(b) Target 1.5 refers to building the resilience of the poor to climate-related extreme events and other economic, social and environmental shocks and disasters. An essential part of building resilience is the maintenance of healthy ecosystems.

Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture

3. Numerous studies have identified unsustainable agricultural practices as a major impediment to biodiversity conservation and sustainable use. Efforts to promote sustainable agriculture would therefore greatly contribute to the implementation of the Strategic Plan for Biodiversity and, in particular, to Aichi Biodiversity Target 7 (sustainable agriculture, aquaculture and forestry). While the main focus of this Sustainable Development Goal is on ending hunger and achieving food security, the targets under the Goal make it clear that this cannot be achieved unless challenges related to agricultural production are addressed. For example:

(a) Target 2.4 refers to ensuring sustainable food production systems and resilient agricultural practices which would contribute to the conservation and sustainable use of biodiversity;

(b) Target 2.3 refers to doubling agricultural production through, among other things, secure and equal access to land and other productive resources and inputs. Such actions would allow for small-scale food producers to make more long-term and strategic decisions regarding land management and allow them to reduce cycles of land degradation and create incentives and means for sustainable agricultural practices;

(c) Target 2.5 refers to maintaining the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their wild relatives, actions which would clearly benefit the conservation and sustainable use of biodiversity.

Thus, while there are potential trade-offs between producing more food (for example by increasing the area under agricultural production) and biodiversity objectives, given the inclusion of the above-mentioned targets under this Goal, Sustainable Development Goal 2 provides an enabling framework for addressing one of the main direct causes of biodiversity loss.

Goal 3. Ensure healthy lives and promote well-being for all at all ages

4. This Goal addresses the issue of human well-being, which is also reflected in the Vision of the Strategic Plan for Biodiversity. In addition, though not stated in the Goal, biodiversity, as part of a healthy

environment, is a key determinant of human health,²¹ potentially providing strong incentives for its conservation and sustainable use. Many of the specific measures raised in the targets under Goal 3 to ensure well-being will have benefits for biodiversity. For example:

(a) Target 3.7 refers to ensuring universal access to sexual and reproductive health-care services, including for family planning, information and education. Actions in this regard will help to reduce population growth, a source of pressure on biodiversity;

(b) Target 3.9 addressing air, water and soil pollution and contamination from hazardous chemicals will help to reduce one of the major direct pressures on biodiversity;

(c) Target 3.3, on addressing tropical and water-borne diseases, and Target 3.4, on promoting mental health, can be addressed by maintaining healthy and resilient ecosystems. For example, access to green space has been shown to improve mental health, while the regulatory services provided by healthy ecosystems have been shown to reduce the spread of zoonotic diseases. Therefore, this target has the potential to create incentives for the conservation and sustainable use of biodiversity.

Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

5. This Goal recognizes that improved access to quality education will support the attainment of sustainable development. This is also true for biodiversity as a more educated and informed population is more likely to be able to engage in processes and debate regarding biodiversity management. Target 4.7 under this Goal specifically covers this point by calling for all learners to acquire the knowledge and skills needed to promote sustainable development, including through education for sustainable development and sustainable lifestyles. In addition, greater access to education has been shown to reduce fertility rates²² and, therefore, this Goal may have an indirect effect on biodiversity by reducing population growth, a source of pressure on biodiversity.

Goal 5. Achieve gender equality and empower all women and girls

6. Gender roles in many countries have an effect on the use and management of biodiversity by influencing the ability of women to participate in decision-making and by affecting their access to and control over land, biological resources and other productive assets. Greater equality and empowerment of women and girls, as called for in this Goal, would therefore have a positive effect on biodiversity by affording women greater influence in its use.

7. A number of specific issues are raised as part of the targets under this Goal which, if addressed, could enhance the enabling environment for the Strategic Plan for Biodiversity. These targets are:

(a) Target 5.5 on ensuring women's full and effective participation and equal opportunities for leadership;

(b) Target 5.A on undertaking reforms to give women equal to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritances and natural resources.

8. In addition to the targets listed above, which would give women greater opportunities to influence the way in which biological resources are managed, target 5.6, related to access to sexual and reproductive health, could also benefit biodiversity. As noted under Sustainable Development Goal 3, improved access to sexual and reproductive health could help to reduce population growth, a source of pressure on biodiversity. Further, progress towards target 5.4 on valuing unpaid care and domestic work

²¹ World Health Organization and Secretariat of the Convention on Biological Diversity (2015). Connecting global priorities: biodiversity and human health: a state of knowledge review. <https://www.cbd.int/health/SOK-biodiversity-en.pdf>.

²² See, for example, KC, S. and Lutz, W. (2017). The human core of the shared socioeconomic pathways: Population scenarios by age, sex and level of education for all countries to 2100. *Global Environmental Change* 42, 181–192. <https://doi.org/10.1016/j.gloenvcha.2014.06.004>

would help to shift traditional gender roles and thereby enable women to have the capacity to engage more fully and formally in different aspects of planning and management related to biodiversity. Similarly, target 5.C on adopting policies and enforceable legislation to promote gender equality and the empowerment of women and girls is a further supportive element towards advancing women's opportunities for engagement in the varied aspects of planning and management relevant to biodiversity.

Goal 6. Ensure the availability and sustainable management of water and sanitation for all

9. The unsustainable use of water is a major cause of biodiversity loss, particularly in inland water ecosystems. Therefore, actions to ensure the sustainable management of water resources as called for in this Goal would help to address a source of pressure on biodiversity. Similarly, improvements to sanitation would help to reduce various types of pollution with positive effects on biodiversity and assist in reaching Aichi Biodiversity Target 8 (pollution reduced). Some of the specific targets identified under this Goal also have positive implications of the achievement of the objectives for the Convention, particularly for those issues related to pollution and sustainable use. For example:

- (a) Target 6.3 refers to reducing pollution, dumping, the release of hazardous chemicals and materials and untreated wastewater;
- (b) Target 6.4 addresses increasing water use efficiency and ensuring sustainable water withdrawals;
- (c) Target 6.5 focuses on the implementation of integrated water resources management.

Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all

10. Ensuring access to sustainable modern energy would reduce the demand for firewood and charcoal, the harvest and production of which is a significant cause of biodiversity loss in many regions. While some trade-offs may exist, for example with regard to potentially devoting more land to the production of biofuels, on the whole, progress in modernizing and ensuring the sustainability of the world's energy supply would greatly support the prospects for implementing the Strategic Plan for Biodiversity 2011-2020. The potential benefits of this Goal are further clarified in its associated targets. For example:

- (a) Target 7.1 refers to ensuring access to modern energy services;
- (b) Target 7.2 refers to increasing the amount of renewable energy;
- (c) Target 7.3 refers to improving energy efficiency.

Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

11. Economic growth, particularly if it follows current trends, is likely to increase the pressure on biodiversity. However, a number of studies have identified potential avenues which would allow for increased economic growth while limiting the effects of this on the environment. One of these avenues is reflected in target 8.4, which calls for increased resource efficiency in consumption and production and for decoupling economic growth from environmental degradations. Such actions would greatly facilitate the implementation of the Strategic Plan for Biodiversity 2011-2020.

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

12. Global spending on infrastructure between 2015 and 2020 is estimated to be between US\$ 27 trillion and US\$ 29 trillion.²³ Expansion of urban and communication infrastructure could lead to

²³ Pricewaterhouse Coopers (2016). Capital project and infrastructure spending outlook: Agile strategies for changing markets, 2016 edition. <https://www.pwc.com/gx/en/capital-projects-infrastructure/publications/cpi-spending-outlook/cpi-spending-outlook-2016.pdf>.

further degradation and fragmentation of ecosystems.²⁴ For example, 25 million kilometres of new roads are expected to be built by 2050. This would represent a 60 per cent increase in the world's road infrastructure relative to 2010.²⁵ However, target 9.1 calls for the development of sustainable and resilient infrastructure, which would mitigate these impacts. Similarly, investments to make infrastructure and industries more resource-efficient, clean and environmentally sound, as called for in target 9.4 under this Goal, would have a similar effect. Further, there is a large potential for ecological infrastructure (such as the use of wetlands for water purification and flood control) to contribute with direct benefits for biodiversity.

Goal 10. Reduce inequality within and among countries

13. Reducing inequalities within and among countries will help to develop the human capital and institutions required to make meaningful progress towards sustainable development. Moreover, progress on other Goals (such as Goal 2 on ending hunger and Goal 7 on ensuring access to modern energy) can only be reconciled with the protection of the global climate (Goal 13) and biodiversity (Goals 14 and 15) if there is a more equitable distribution of access and use resources. Thus, action to reduce inequalities within and among countries is essential to achieve biodiversity objectives at the same time as achieving the other Sustainable Development Goals. In turn, this means that attaining this goal is closely linked to Goal 12 (sustainable consumption and production patterns).

Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable

14. As of 2014, 54 per cent of the world's population resided in urban areas. By 2050, this is expected to reach 66 per cent. Further, by 2030 it is projected that there will be 41 cities with more than 10 million inhabitants.²⁶ The increasing rate of urbanization represents a number of challenges to biodiversity, including the growing demand for resources, such as water and energy. Therefore, actions to make cities and human settlements more resilient and sustainable will also benefit biodiversity. The targets included under this Goal identify a number of issues which could help to implement the Convention. For example:

- (a) Target 11.3 on enhancing sustainable urbanization;
- (b) Target 11.4 on strengthen the protection of cultural and natural heritage;
- (c) Target 11.6 on reducing the environmental impact of cities;
- (d) Target 11.7 on providing accesses to green and public spaces.

Goal 12. Ensure sustainable consumption and production patterns

15. Unsustainable consumption and production is one of the main direct drivers of biodiversity loss. Actions to address this Goal will therefore assist in promoting the sustainable use of biodiversity and in particular Aichi Biodiversity Target 4 (sustainable consumption and production). Numerous assessments have indicated that, as the world population increases and becomes more affluent, the pressure on biodiversity will increase. However, there are pathways to avoid or mitigate this growing pressure, many of which are identified in the targets associated with this Goal. For example:

- (a) Target 12.2 on the sustainable management and efficient use of natural resources;
- (b) Target 12.3 on reducing food waste;
- (c) Target 12.4 on the environmentally sound management of chemicals and wastes;

²⁴ Laurance W.F. et al. (2017). Road Expansion and the Fate of Africa's Tropical Forests. *Frontiers in Ecology and Evolution*, 5:75 (doi: 10.3389/fevo.2017.00075).

²⁵ William F. Laurance, et al. (2014) A global strategy for road building. *Nature* 513 (7517):229-232.

²⁶ United Nations, Department of Economic and Social Affairs (2014). *World Urbanization Prospects: The 2014 Revision, Highlights* (ST/ESA/SER.A/352). <https://esa.un.org/unpd/wup/Publications/Files/WUP2014-Highlights.pdf>.

- (d) Target 12.5 on the promotion of waste prevention, reduction, recycling and reuse.

Goal 13. Take urgent action to combat climate change and its impacts

16. Numerous studies have highlighted that climate change is a major cause of biodiversity loss and is expected to become the leading cause of biodiversity loss in the future unless significant actions are taken. Therefore, actions taken to combat climate change have the potential to greatly contribute to the conservation and sustainable use of biodiversity. However, as noted in various assessments, depending on the actions taken, there are potential trade-offs that may need to be addressed. For example, the large-scale deployment of biofuels as a means of reducing greenhouse gas emissions could have negative impacts on biodiversity resulting from the need to devote more land to the production of biofuel crops.²⁷

17. Target 13.1 under this Goal calls for resilience and adaptive capacity to climate change to be strengthened. One of the main ways of accomplishing this would be by ensuring healthy and resilient ecosystems. In this respect, any investments in ecosystem resilience to climate change would also have benefits for biodiversity.

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

18. The conservation and sustainable use of the world's marine resources is one of the issues addressed under the Convention on Biological Diversity as well as in the Strategic Plan for Biodiversity 2011-2020. It is directly addressed by several Aichi Biodiversity Targets, in particular Target 6 (sustainable management of marine living resources). Any actions taken to reach this Goal would therefore also help to reach the objectives of the Convention.

Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation and halt biodiversity loss

19. This Goal covers issues of direct relevance to the Convention on Biological Diversity. It is directly relevant to several Aichi Biodiversity Targets, including Targets 5 (habitat loss halved or reduced), 11 (protected areas), 12 (extinction prevented), and 15 (ecosystems restored and resilience enhanced). Therefore, any actions taken to attain this Goal would also contribute to the attainment of the objectives of the Convention.

Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

20. This Goal recognizes that prospects for sustainable development are increased if societies are peaceful and inclusive. While this Goal does not explicitly address biodiversity, the same societal and institutional conditions that would facilitate sustainable development would also support the conservation and sustainable use of biodiversity.

21. The targets under this goal promote the development of specific elements related to governance, institutions and transparency that would enhance the enabling environment for reaching the objectives of the Convention. For example:

- (a) Target 16.3 refers to the promotion of the rule of law;
- (b) Target 16.5 refers to reducing corruption and bribery;
- (c) Target 16.6 refers to developing effective, accountable and transparent institutions;
- (d) Target 16.7 refers to responsive, inclusive, participatory and representative decision-making;
- (e) Target 16.10 refers to public access to information.

²⁷ A. Webb, and D. Coates (2012). Biofuels and Biodiversity. Secretariat of the Convention on Biological Diversity. Montreal, Technical Series No. 65. <https://www.cbd.int/doc/publications/cbd-ts-65-en.pdf>.

22. One of the impacts of these different targets would be ensuring that citizens can participate effectively in decisions regarding the conservation and sustainable use of biodiversity.

Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development

23. The means of implementation for the Sustainable Development Goals do not differ significantly from the means of implementation for the Strategic Plan for Biodiversity 2011-2020. Therefore, any actions to strengthen the means of implementation, including finance, capacity-building, technology, policy and institutional coherence, partnerships and data and monitoring, would enhance the institutional environment for implementing the Strategic Plan for Biodiversity 2011-2020.
