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Biodiversity 2050: Can the convention on biological diversity deliver a world living in harmony with nature?

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I. Introduction

The Convention on Biological Diversity's (CBD) '2050 Vision' aims to achieve, by 2050, a world that is 'living in harmony with nature.'[1] Yet biodiversity is threatened globally to an extent never before witnessed in human history.[2] The *Global Assessment of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services* (*IPBES Global Assessment*)—the largest ever assessment of the global state of biodiversity and ecosystems services—found that a sustainable global future for people and nature remains possible. However, this can only be achieved if we fundamentally redesign our economic, social, and governance systems.[3]

It is almost three decades since the CBD, the overarching global legal instrument for biodiversity, came into force. Our planet's economic, social, and environmental systems are far more connected than they were in the world into which the CBD was born. Meanwhile, the threats to biodiversity are far more apparent, the need for its protection far more urgent. Today, we sit on the brink of the possible realization of a significant shift in the operation of the convention: the projected conclusion of the CBD's post-2020 framework when parties meet in Kunming, China, for the fifteenth Conference of the Parties (COP-15).[4] Can this process move the CBD from an instrument of aspiration to one of action? Can the convention draw from the lessons of its past to shape a global governance landscape that enables the future we want for humans and nature?

Stemming the continued destruction of nature is one of humanity's greatest global challenges.[5] COP-15 presents a critical window to change the global biodiversity extinction trajectory.[6] In this retrospective, I examine the developments of the CBD to date and the transformations needed in international law today to achieve a thriving and diverse planet for people and nature by 2050. I first discuss the current state of biodiversity and the particular challenges of global biodiversity governance. Next, I set out developments under the CBD since its entry into force almost thirty years ago. I then evaluate the target-based approach of

the CBD—the convention's *modus operandi* of the last twenty years. I conclude by setting out the fundamental and urgent changes required within and beyond international law so that humans and nature may thrive in the present and into the future.

ii. The challenges of global biodiversity loss in the Anthropocene

The exponential rise in resource consumption and economic activities of recent decades is so great that humans are now a force of planetary change.[7] This proposed new era of Earth's history is known as the Anthropocene. Human-caused global changes have resulted in a planet that is significantly different from the Holocene. The Holocene started about 11,700 years ago and encompasses most of human history. The Holocene provided the conditions for human societies to thrive. Human impacts on the planet, however, have been particularly pronounced since the 1950s. As a consequence, humanity now has to contend with the uncertainty and surprise characteristic of the Anthropocene on a planet increasingly moving beyond the safe operating space of the Holocene.[8] In this context, biodiversity conservation has been identified as one of society's most important planetary challenges as biodiversity loss poses a greater risk to humanity than climate change.[9]

The *IPBES Global Assessment* underscores that biodiversity is fundamentally important for its own sake. The multiple contributions that biodiversity makes to human well-being include the provision of food, freshwater, clean air, medicine, and protection against natural disasters. Biodiversity also underpins culture as well as physical and mental well-being. Current extinction rates, however, are estimated to be approximately one hundred times that seen in Earth's pre-human history.[10] This includes a 52 percent decrease in vertebrate populations in the last forty years,[11] while 80 percent of wetlands and 50 percent of coral cover have been lost.[12] Importantly, the *IPBES Global Assessment* emphasizes that it remains possible to reverse the current extinction trajectory. To achieve this reversal, we need to act across sectors as well as social and economic systems in ways that are radically different to the status quo.[13]

Until recently, biodiversity had been relegated to an unwarranted back seat in global regulatory spheres, particularly relative to climate change. Nevertheless, the establishment of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), which serves as a conduit between biodiversity scholarship worldwide and national governments, has meant that in just the last few years the importance of addressing biodiversity as a global environmental, social, and economic concern requiring urgent and concerted action has gained prominence. This is particularly so since the conclusion of the first *IPBES Global Assessment* in May 2019. Notably, as the *IPBES Global Assessment* was being approved in Paris, Group of Seven (G7) environment ministers were concluding the Metz Charter on Biodiversity (Metz

Charter) three hundred kilometres away in the French city of Metz.[14] The Metz Charter was subsequently endorsed by G7 heads of state at their meeting in Biarritz.[15] While the Metz Charter does not include details as to the specific actions that states will take, it is an important step forward for the global regulation of biodiversity as it acknowledges the need to 'accelerate' and 'intensify' efforts to halt biodiversity loss and adopting the language of the CBD's 2050 Vision 'to value, conserve, restore and wisely use biodiversity, thereby maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people.'[16] In doing so, the Metz Charter not only reiterates the text of the CBD's 2050 Vision but also signals an important shift in focus and, one would hope, an intention to make significant progress in the global regulation of biodiversity. Indeed, post-2020 discussions to date have drawn significantly on the findings of the *IPBES Global Assessment*, especially in attempts to formulate targets that address the five key drivers of global biodiversity loss identified in the assessment.[17]

Beyond the difficulties of attracting sufficient political attention, global governance of biodiversity faces particular challenges that are not as pronounced in the regulation of other environmental issues (for example, climate, air, and water pollution). This is due in large part to the characteristics of biodiversity and the multiples ways in which our lives and cultures are intertwined with nature. Biodiversity, by definition, recognizes that ecologies differ widely within and across our land and seascapes. Meanwhile, humans form diverse relationships with non-human worlds across this myriad of ecologies. Culture influences how we interact with varied natures. Human cultures are in turn shaped by the environments from which they emerge. At the same time, interconnected social, economic, and ecological systems in the Anthropocene drive an increasing homogenization of our biophysical and social worlds. This results in biodiversity loss increasingly caused by actions and actors located at great distances from where the impacts are felt (that is, telecoupling). This section examines the related issues of scale and telecoupling to set out the reality of global governance issues that need to be addressed to achieve a thriving planet for humans and nature.

1. Scale

The planetary boundaries framework aims to identify global-scale biophysical limits that, if transgressed, would compromise the 'safe operating space for humanity' (that is, conditions under which human populations could be expected to thrive).[18] This framework has gained prominence as the dominant paradigm within which to frame discussion of the Anthropocene and possible pathways to desirable futures in this geological epoch defined by humans and human activity. Biodiversity (represented as biosphere integrity in the second iteration of the planetary boundaries framework[19]) is one of the two core global thresholds that are fundamentally important to maintaining the Earth system.[20] Nevertheless, defining biodiversity at a planetary scale has proved the most challenging amongst all planetary boundaries.[21]

The initial framing of planetary boundaries acknowledged the difficulty of identifying a biodiversity boundary due, in part, to the lack of an existing global-scale threshold and incomplete knowledge of the role of biodiversity on ecosystem function across scales.[22] Global species extinction rates continue to be used to define this planetary scale boundary. This is acknowledged to be far from ideal. The limitations of the species extinction rate include that this knowledge is based largely on known species. This indicator is therefore dominated by vertebrates that account for less than 2 percent of all species. At the same time, the impact of species extinctions, and, indeed, extinction itself, is often difficult to identify until long after the extinction has occurred.[23]

The subsequent iteration of the planetary boundaries framework has redefined the biodiversity planetary boundary as 'biosphere integrity' in recognition of the fact that the extinction rate and the total number of species in a given area (species richness) are not easily scalable across local, regional, and global levels.[24] The revised iteration proposes a new two-component approach comprised of genetic diversity and functional diversity. The authors highlight the need for further work to be able to determine a globally relevant measure of functional diversity. For genetic diversity, the extinction rate is retained along with acknowledgement that this measure is far from ideal.[25]

Global governance of all environmental issues needs to adequately grapple with multiple jurisdictional and ecological scales. Climate change, for example, has been successfully framed as an issue that necessitates a global response.[26] This masks the fact that we live in a world with multiple climates and vastly different ways of interacting with these climates.[27] Nevertheless, global narratives around climate have been shaped in such a way that global temperature and global carbon budgets not only are dominant scientific paradigms but also have become central governing principles. This fact is illustrated, for example, in the unified global target of limiting warming to two degrees.[28] There is significant push back in the scientific and governance communities against a singular global biodiversity target and, indeed, any framing of biodiversity as capable of being managed in any meaningful way at the global level alone. This underscores the fact that, while governance of climate change and other environmental issues would also benefit from being attuned to scales beyond the global, the challenge of scale for biodiversity and the peoples that interact with it is even more pronounced.[29]

The causes and impacts of biodiversity loss manifest differently at different scales. It is also unclear whether accumulation of the impacts of local biodiversity change can provide an adequate indicator of the extent to which this impact affects large-scale or Earth-system ecological processes.[30] Further, a strict definition of biodiversity would refer to the total number of species in a given system. However, it is the extent of biomass (that is, the amount of living matter) that provides a better indicator of ecosystem function and contributions

to human well-being than the sheer number of species. Nevertheless, such terms tend to be used interchangeably despite the importance of their distinction.[31] This issue further complicates policy discussions at multiple scales.

Even in a biophysical sense, there are significant challenges to defining global biodiversity and its management in a meaningful manner. The multiple ways in which people interact with biodiversity at different scales add a further layer of complexity as human communities are deeply dependent on, and embedded in, the ecosystems that they inhabit and on which they rely.[32] This is not to say that there is no room for global governance of biodiversity; rather, that the ways in which we interact with biodiversity are interconnected at multiple scales. These interconnections within linked social-ecological systems located at vast distances from each other occur in ways that were only beginning to be appreciated when the CBD came into force. The next section explores the emerging concept of telecoupling and its implications for the global regulation of biodiversity.

2. Telecoupling

It has long been recognized that biophysical environmental impacts can manifest in distant places.[33] At the same time, the interconnected nature of global socio-economic systems at multiple scales is embodied in the widely acknowledged phenomenon of globalization. What has only recently gained prominence is the notion of telecoupling. Telecoupling recognizes that human and natural systems are inextricably linked (that is, coupled) across vast time, space, and governance scales. Such linkages are stronger than ever before with the speed and spatial scope of economic and biophysical processes previously confined to discrete governance scales now occurring at geographical distances far removed from their source.[34] This is especially evident through distant connections such as global trade, transnational land transfer, invasive species, and technology transfer.[35] This in turn is accelerated and enabled through the pervasive nature of electronic communication.[36]

The telecoupled nature of social-ecological systems on a global scale results from the technological advances of the Anthropocene. At the same time, the emergent consequences in areas that are at far distances from the drivers and sources of such impacts is a further characteristic of the novel challenges presented by this current epoch. Telecoupling is therefore redesigning not only the threats to biodiversity but also the opportunities for its conservation, with these changes playing out in ‘distant supermarkets, corporation boardrooms, stock markets and the Internet’ at an unprecedented speed and intensity.[37]

Many of the impacts of distant threats arise due to escalating demand for agricultural and wildlife products that undermine local efforts of land protection and management. International trade, for example, can weaken the price signals sent to distant consumers, thus hampering attempts at sustainable production. At the same

time, opportunities arise from telecoupled flows of information that enable strong international consumer pressure to be placed on multinationals and governments that are highly sensitive to scandals stemming from unsustainable practices in their supply chain. Therefore, this provides opportunities for regulation through certification and corporate social responsibility.[38]

This section has highlighted, on the one hand, that the diversity of the natural world and the mechanisms for its protection cannot be reduced to a homogenized global target. On the other hand, the telecoupled nature of the resilience and vulnerabilities of social-ecological processes of the globalized world result in a contemporary reality that is far removed from that of the Earth Summit in Rio de Jaineiro where the CBD was concluded in 1992. In Part III, I examine the evolution of the CBD in the decades since the Rio summit. Then, in Part IV, I highlight how international biodiversity law needs to grapple with the realities of a diverse, yet telecoupled, world in a meaningful way if it is to have any chance of anticipating and shaping desirable futures so that the diversity of life on Earth may thrive.

iii. Three decades of the CBD

In November 1988, the first meeting of the Ad Hoc Working Group of Experts on Biological Diversity recognized the need to develop a global binding instrument for biodiversity.[39] The CBD was one of two conventions concluded at the Rio Earth Summit.[40] Negotiations in the lead up to the Rio Summit recognized that biodiversity was a global issue that needed a multilateral response.[41] In June 1992, the CBD was opened for signature.[42] It entered into force on 29 December 1993.[43] With 196 parties and 168 signatories, the convention boasts almost universal membership. Despite signing the treaty in 1993, the United States, having failed to ratify the CBD, is a notable non-party.[44]

The CBD aims to provide a holistic global solution to biodiversity conservation and sustainable use by building upon existing conventions.[45] The convention recognizes the variety within and between species and the non-living components of the ecosystems that these species inhabit. In doing so, the CBD incorporates levels of ecological organization from the genetic to the ecosystem.[46] This incorporation marked an important development at the multilateral treaty level of the conceptualization of biodiversity. The convention applies the ecosystem approach, which includes within its purview uncharismatic species and those that do not have immediate economic significance.[47] At a conceptual level, the CBD thus moved international law beyond previous conventions that focused on species-specific conservation[48] or particular habitats.[49] By acknowledging the inadequate understanding of the number and types of species within an ecosystem,[50] the approach opens the door to intervention measures that incorporate landscape-level dynamics and small-scale processes of soil ecology and species biology.[51]

It is now almost three decades since the entry into force of the CBD. As illustrated in the preceding sections, our planet and our understanding of it differ significantly from the world in which the CBD was formed. This section commences by evaluating the key provisions of the convention. It then provides an overview of the convention's structure and its implementation mechanisms. Focus then shifts to the utility and effectiveness of the CBD's target-based approach of the last twenty years. This target-based approach is set to continue into at least the next decade with the expected conclusion of the post-2020 framework at COP-15. The section therefore concludes by drawing on the challenges for global biodiversity governance discussed above and their specific consideration in relation to the post-2020 framework. This leads into Part V, which considers the shifts required across international law in order to achieve by 2050 a thriving ecologically and culturally diverse global society.

1. What Does the CBD Do?

The CBD's three objectives are the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising from the utilization of genetic resources.[52] These objectives reflect the compromise achieved in attempts to reconcile the positions of developed and developing countries where industrialized states have prioritized conservation while developing countries have prioritized the sustainable and equitable transfer of finance and technology.[53] The end result is a global instrument that holds human use and benefit to be a fundamental purpose of biodiversity conservation while stressing the importance of sustaining biodiversity to meet the needs and aspirations of present and future generations.[54]

Articles 6, 8(k), and 10 acknowledge the importance of conservation and sustainable use measures sitting within national-level policy and legal frameworks. These articles call for the development of national plans, strategies, and programs for the conservation and sustainable use of biodiversity.[55] There is also recognition that such actions need to be integrated through the employment of cross-sectoral approaches into national decision-making,[56] The CBD also calls for the development or maintenance of conservation legislation or regulatory provisions,[57] for contracting parties to adopt measures to avoid or minimize adverse impacts on biodiversity,[58] and for cooperation between contracting party governments and the private sector in developing methods for the sustainable use of biological resources.[59] Further, Articles 8 and 9 provide, in combination, a toolkit for the *in situ* and *ex situ* conservation of biodiversity. The articles call for the establishment of protected areas[60] while recognizing the importance of management beyond protected areas.[61] These articles also direct parties to engage in rehabilitation and restoration measures to promote the recovery of threatened species[62] and to identify, monitor,[63] prevent,[64] and manage[65] threats to biodiversity.

Therefore, on its face, the CBD provides a comprehensive instrument for biodiversity conservation that employs multiple conservation tools and strategies that commit states to various conservation measures. However, while Article 3 sets out a clear obligation not to cause damage 'to the environment of other States or of areas beyond the limits of national jurisdiction,'[66] it also emphasizes the 'sovereign right' of states to 'exploit their own resources pursuant to their own environmental polices.'[67] This is underscored by preambular text that again acknowledges states' sovereign rights over their own biological resources.[68] Article 3 thus reflects the United Nations General Assembly's resolutions that have repeatedly declared that 'the right of peoples and nations to self-determination includes permanent sovereignty over their natural wealth and resources.'[69] At the same time, it embodies the legal difficulty that has plagued the meaningful collaborative global governance of biodiversity.

The 'obligations' under the CBD are also limited by significant qualifiers. All of the otherwise substantive obligations under the convention are diminished by the phrases 'as far as possible or as appropriate,' 'in accordance with its (the contracting party's) particular capabilities,' or 'subject to national legislation.' The convention does not provide any guidance as to the extent of such qualifications. As others have pointed out, the question remains as to when it is ever 'possible' or 'appropriate' for a developing nation to divert scarce resources to the identification and monitoring of key pockets of biodiversity or to make the investments in biodiversity conservation measures contained within the convention.[70] These ambiguities therefore greatly impact the legal weight of the CBD's provisions.

The CBD's lack of teeth possibly reflects the true intention of the parties. The failure of the US administration under President George Bush Senior to sign the convention stems from a view that the intellectual property and environmental provisions of the CBD were contrary to America's pharmaceutical interests and economic development. In contrast, the United Kingdom's Conservative government led by Prime Minister John Major saw the CBD as an 'attractive, easily implemented green gesture.'[71] Indeed, the end result of the multiple caveats and escape clauses of the convention is a framework document where countries agree only that biodiversity conservation is an issue that requires some form of global response. This result, and the subsequent target-based approach adopted for the majority of the life of the CBD and its foreseeable future, has produced a 'convention' that challenges the meaning of a binding international instrument and operates as 'aspirational, policy oriented soft law.[72]

Article 26 is the only provision of the CBD that is not subject to qualification. The only clearly binding obligation on parties is therefore the development of 'reports on measures which it has taken for the implementation of the provisions of this Convention and their effectiveness in meeting the objectives of this Convention.' Further, 'in accordance with its particular conditions and capabilities,' contracting parties are to

develop national strategies, plans, or programs for realizing the objectives of the convention.[73] These have taken the form of national biodiversity strategies and action plans (NBSAPs).[74] NBSAPs have become the primary mechanisms for implementing the CBD. However, there are significant limitations of an approach that focuses merely on the future plans of a contracting party rather than on its achievements. The prominence of NBSAPs further underlines that the convention continues to tread a path increasingly focused on aspiration rather than on meaningful implementation and action. It could be argued that the 'framework' nature of the convention provides the opportunity for more concrete obligations to be concluded at a later date through specific protocols.[75] The sections that follow argue that, while the potential for increasing the 'binding-ness' of the convention remains, the limited nature of protocols adopted under the CBD and the consolidation of the target-based approach as the *modus operandi* of the convention continue to limit the capacity of the CBD to make a meaningful contribution to nature conservation and the equitable and sustainable use of biodiversity.

2. How Does the CBD Work?

Framework conventions are characterized by a two-step process where parties initially agree on vague principles and subsequently adopt additional substantive duties and obligations in the form of a protocol.[76] The framework nature of the CBD is reflected in the broad statements contained within its text. Early in the negotiating process, it was envisaged that the CBD would take the form of an 'umbrella' convention that might consolidate existing treaties under a single administrative structure.[77] It was anticipated that this would eliminate jurisdictional overlap and fill perceived gaps in the existing treaty network.[78] However, the realization of a convention that absorbed or superseded prior treaties proved legally difficult and politically unattainable, and the state parties agreed instead on a 'framework' convention.[79]

Article 28 provides for the adoption of protocols under the CBD. Other organizational structures include the COP,[80] the Secretariat,[81] and the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA).[82] The COP operates as the legislative organization of the convention, meeting regularly and voting on protocol amendments and other administrative matters. As the administrative agency of the convention, the Secretariat implements actions designated to it by the CBD and any further tasks delegated by the COP. The SBSTTA compiles the required scientific data upon which the COP (and the Secretariat, if so delegated) can take action, thus providing legitimacy and the sound basis for decision-making on technical matters.[83]

In 2000, parties adopted the Cartagena Protocol on Biosafety[84] and the Nagoya Protocol on Access and Benefit Sharing in 2014.[85] These protocols are important but have a narrow remit. As a consequence, the legality of COP decisions aside,[86] there exist few 'hard' obligations for states to conserve biodiversity within

their territory. Instead, what has emerged is a system of 'soft' obligations in the form of targets. I expand below on the CBD's target-based approach.

3. The CBD's Target-Based Approach

In 2000, at COP-5 in Nairobi, Kenya, CBD parties agreed to 'develop a Strategic Plan for the Convention' and to identify 'a set of operational goals.' This plan would span the years from 2002 to 2010.[87] Consequently, the agreement of the 2010 Biodiversity Target in April 2002 at COP-6, held in The Hague, Netherlands, marked the convention's first foray into the use of a target-based approach.[88] The 2010 Biodiversity Target aimed to 'achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on Earth.'[89] The 2010 target was endorsed by the World Summit on Sustainable Development (WSSD) in September that year and was included in the Johannesburg Plan of Implementation.[90] Target 7.B of the Millennium Development Goals also adopted the WSSD's wording aiming to '[r]educe biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss.'[91]

The key shortcoming of the 2010 target was that it did not provide any specific direction, beyond stating the year by which the target was to be achieved and reiterating the convention's overarching intentions.[92] The development of sub-targets and indicators was clearly an afterthought and was not included in the process of agreeing to the 2010 target. The Secretariat and contracting parties came to realize that they needed some way to determine whether progress had been made. The development of indicators only started in 2003, the year after the target was adopted by COP-6.[93] At the next COP, in 2004, Decision VII/30 set out seven sub-targets and indicators for 'immediate testing' and other 'possible indicators for development by the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) or Working Groups.'[94] Much of the intervening time between the declaration of the 2010 target and the year 2010 was spent identifying what the target actually encompassed and how progress towards the target was to be assessed. Therefore, it is unsurprising that there was inadequate progress towards meeting the target.[95] This was acknowledged in the CBD's 2011–20 Strategic Plan, which stated that the 2010 target had 'inspired action at many levels' but not on a 'scale sufficient to address the pressures on biodiversity.'[96]

Importantly, contracting parties did heed the lessons of the 2010 target while drawing on broader developments to target-based approaches in global sustainability governance. The Aichi Biodiversity Targets were concluded at COP-10 in Aichi, Japan. The twenty Aichi Biodiversity Targets were included as an annex to the *Strategic Plan for Biodiversity 2011–2020*. The purpose of the plan was to realize the objectives of the CBD and its 2050 vision of 'living in harmony with nature.'[97] The Aichi Biodiversity Targets go beyond the

biophysical components of biodiversity to also include social and cultural considerations. The twenty targets are distributed under five strategic goals. The goals are aimed at addressing the underlying causes of biodiversity loss; reducing the direct pressures on biodiversity while promoting sustainable use; safeguarding ecosystems, species, and genetic diversity; enhancing the benefits that arise from biodiversity; and strengthening implementation mechanisms.[98] The twenty Aichi Biodiversity Targets were also intended to be 'SMART': specific, measurable, ambitious, realistic and time-bound.[99] Despite their intended 'measurability,' not all of the targets are easily measured. Target 1, for example, anticipates that '[b]y 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.' While the target clearly aspires to enhance public awareness, it is difficult to ascertain when this target has been achieved.[100]

A further shortcoming of the Aichi Biodiversity Targets is that states are not required to report on progress. Target 17 was directed at promoting development of NBSAPs as required under the convention.[101] There has been clear progress in this regard with 97 percent of contracting parties (191 of 196 parties) having now submitted NBSAPs.[102] However, the plans are merely statements of each country's ambition, not their achievements.[103] This progress has therefore limited the accountability of states in moving towards realizing the targets. Add to this that the Aichi Biodiversity Targets were deliberately framed to be non-binding. The language of the strategic plan 'urges,' rather than compels, implementation by contracting parties. This therefore affirms the CBD's soft trajectory.[104]

It is now clear that most of the Aichi Biodiversity Targets will not be met by the end of 2020. Progress has been made particularly in relation to some of the policy-related targets such as the designation of protected areas, the identification of invasive alien species, and the entry into force of the Nagoya Protocol and the development of NBSAPs discussed above.[105] While the Aichi Biodiversity Targets were an important improvement on its predecessor, it is undeniable that the CBD needs to adopt a significant shift of direction. Part V considers the immediate and fundamental changes required to move humanity away from the sixth mass extinction.[106]

Iv. The 2050 vision of the CBD can only be realized through urgent and transformative change

The CBD's 2050 Vision of humans 'living in harmony with nature' aims to realize a world where 'biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people.'[107] This future Earth encompasses the convention's three objectives of (1) conservation; (2) sustainable use; and (3) the equitable sharing of the benefits that arise from biodiversity.[108] However, if current trajectories persist, the CBD will continue to fail

to achieve the object and purpose of the convention and the desirable future it envisages. This section starts by considering the broader societal shifts needed to address the drivers of biodiversity loss and develop the political momentum required to transform the CBD's system specifically and global sustainability governance more generally. From this focus, discussion moves to the changes required across the international law system so that biodiversity might be regulated at the global scale in a more holistic and effective manner. Finally, the section engages directly with the overhaul required in the operation of the CBD in the context of the post-2020 framework negotiations.

1. Interrogating and Re-imagining Our Relationships with Nature

The *IPBES Global Assessment* specifies that if we are to develop pathways to sustainable futures then we need to move global financial and economic systems beyond the limited framings of economic growth.[109] It is also widely acknowledged that Indigenous knowledges, science, governance, rights, and voices are fundamental to the development and realization of the post-2020 framework.[110] These understandings need to inform the future development of the global regulation of biodiversity. There is growing acknowledgement at a global scale of the necessity of including multiple perspectives, practices, and disciplines in redefining our relationships with the natural world and in developing mechanisms for addressing the unprecedented global challenges of our times. Drawing on this growth of global scholarship and awareness, the IPBES has developed a conceptual framework that aims to inspire integrated thinking that incorporates the full cycle of interactions between humans and nature.[111] The idea of nature's contribution to people (NCP) is a central component of the IPBES's conceptual framework. NCP represents the new global framing of the relationships between humans and biodiversity. The concept extends previous conceptualization of human-nature relationships by incorporating multiple world views, a range of disciplinary perspectives, and the multitude of ways in which stakeholders value biodiversity. The concept recognizes that human perceptions of the advantages and disadvantages of nature are shaped by time, place, and cultural and socio-economic contexts. This framing elevates Indigenous and cultural knowledge in the process of informing policy and practice and our understanding of these relationships.[112] Proponents of NCP recognize the difficulty of identifying and reconciling such a broad range of values. They argue, however, that this pluralistic approach avoids perverse outcomes. They suggest that the approach has the potential to facilitate the management of sustainability issues in a cohesive, socially legitimate, and effective manner.[113]

Part of the reason why the CBD has been plagued by the lack of obligations in a so-called 'hard' instrument of international law are the false dichotomies that frame human development and environmental protection as being diametrically opposed. By the same token, part of the solution requires a reframing of narrative that

recognizes the existence value of biodiversity as well as its fundamental importance to continued human well-being.

The CBD's preamble recognizes that economic and social development and poverty eradication are the first and overriding priorities of developing countries. This is echoed in Article 20(4).[114] Meanwhile, subsequent COP decisions increasingly acknowledge the importance of biodiversity to human well-being.[115] What is needed is a movement beyond mere platitudes and a transformation of understanding across the international community of the interdependence of resilient ecosystems and thriving human societies. This is not a call for fortress-style conservation but, rather, for acknowledgement that humans and nature are intricately interconnected. Therefore, our responsibilities to other species and to each other require urgent action to ensure that the drivers of biodiversity loss are addressed in a just and sustainable manner. To achieve this goal, Indigenous peoples and local communities (IPLCs), their knowledges, and their world views must play a central role.

While IPLCs have observer status within discussions of the post-2020 framework. There remains insufficient discussion of the role of Indigenous peoples within the post-2020 framework. Ideally, IPLC knowledges and world views would be integrated across the framework. The references to Indigenous 'knowledges'[116] and 'participation'[117] in the zero draft do not go beyond that of the Aichi Biodiversity Targets.[118] The post-2020 framework therefore must go much further than its current draft to not only move beyond the unhelpful nature-development dichotomy that has influenced contracting parties to date and to also enhance the incorporation of IPLCs' knowledges and world views to shape a world where humans are truly 'living in harmony with nature.'

2. Greater Coordination across the International Legal and Institutional Landscape

Effective regulation of biodiversity is often impeded by inadequate integration of biodiversity issues across sectors and the failure to recognize the cross-cutting nature of biodiversity.[119] There is therefore growing recognition of the need for integrated, interdisciplinary approaches that take into account the complex interacting social-ecological issues that impact on biodiversity and human well-being.[120] This is particularly important when the effects of telecoupling on biodiversity are taken into account. Integrated legal and policy approaches that enable sustainable consumption and production, including shifts in approaches to food and feed, can have important interconnected benefits for biodiversity, climate, food, and nutrition.[121] At the same time, enhancing the capacity to trace responsibility back to distant consumers and producers is key to addressing some of the threats that telecoupled social-ecological systems pose to biodiversity. This is

especially the case with many large multinational corporations willing to adopt better sustainability practices in order to avoid or ameliorate the harm of environmental scandals.[122]

When the CBD came into being, it did so in a world that acknowledged that the conservation and sustainable use of biodiversity was a shared global concern. Today, it is increasingly clear that biodiversity loss is the result of combined economic and social drivers that often operate beyond the jurisdiction of individual states. With this realization comes the opportunity to reorient global regulation for sustainability by recognizing that addressing global biodiversity issues cannot be done within multilateral environmental agreements alone. Instead, there needs to be greater integration across international trade and human rights law with an appreciation of the feedback that will result across these systems. Similar understanding also needs to be taken into the formulation of the post-2020 framework.

Current negotiations of the post-2020 framework reveal the development of targets that bear many similarities to the Aichi Biodiversity Targets. The proposed new targets are likewise grouped under overarching goals. A key difference is that there are significant efforts to quantify ambition so as to facilitate concrete action and assessment.[123] As with the Aichi Biodiversity Targets, there have been limited efforts to identify possible feedback and interconnections between targets that specifically address the biophysical components of biodiversity conservation and those that address linked social and economic issues. By failing to pay attention to the interconnected nature of social-ecological systems and the impacts of activities from far-away actors, the post-2020 framework therefore risks ignoring the reality of a telecoupled world and repeating the mistake of the Sustainable Development Goals (SDGs), which also contain no explicit linkages across coupled social, economic, and environmental systems that the SDGs encompass.[124]

3. The Post-2020 Framework: Towards the Kunming Agreement or the Kunming Targets?

The year 2020 was billed as the ‘Super Year for Nature’ with multiple high-level environment-related global meetings scheduled. The CBD’s COP-15 was the most significant of these meetings with the anticipated conclusion of the convention’s post-2020 framework. The COVID-19 pandemic has meant that most of these events have been put on hold. As highlighted at the start of this article,[125] the convention’s Secretariat has tentative plans to hold COP-15 in Kunming, China, in May 2021.

The COVID-19 pandemic has provided the occasion to reflect on the consequences of the continued impact of humanity’s destruction of nature. Could it be that the current pause in the negotiation process will provide the opportunity to consider what real ambition for the CBD could look like? In the discussion that follows, I emphasize the desirability of greater commitments from contracting parties in the form of an agreement that imposes some form of legal obligations. Regardless of the legal form of the outputs that emerge from

Kunming, the contracting parties are on track to deliver a new set of global biodiversity targets. I conclude by offering suggestions on how these targets could draw on the lessons learned in the last twenty years of the CBD's target-based approach.

A. What Are the Prospects for a Kunming Agreement?

Writing a decade ago in the context of the Aichi Biodiversity Targets, Stuart Harrop and Diana Pritchard's arguments are highly prescient. They state:

Whatever the advances made in the 2020 targets, the status quo is unlikely to change without further development of clear obligations…. Failure may result not from the technical issues relating to target setting but from the unwillingness of the CBD's member states to commit to back the targets with obligations. With only aspirations rather than long-term commitments, it is highly likely that issues deriving from a supervening and short-term political event horizon will too easily supplant any quality or continuity of implementation.[126]

Ten years later, on the brink of the next generation of CBD targets, the reality of this statement is clearer than ever before. While the media has portrayed the post-2020 framework as a possible Paris Agreement moment for the CBD, key differences exist and, correspondingly, so too does the likelihood of a binding instrument emerging from the CBD's COP-15 negotiations.[127] Important differences on the roads to Paris and Kunming include that the starting point of the Paris negotiations was specifically to agree on a successor instrument to the binding Kyoto Protocol.[128] Failed discussions within the United Nations Framework Convention on Climate Change's (UNFCC) COP in Copenhagen in 2009 spurred contracting parties to set up a process for future progress.[129] The Ad-Hoc Working Group on the Durban Platform for Enhanced Action (Durban Platform) at the UNFCCC's COP-17 was set up in 2011, four years prior to the Paris COP. Therefore, not only was the starting point of movement towards binding commitments the ultimate goal of the Paris negotiations, the time frame of action towards this goal was also double that of the post-2020 framework. If one takes into account the fact that the UNFCCC's COPs are held annually, while the CBD's COPs are organized every two years, then the UNFCCC parties would have met four times more than the CBD parties in the lead up to the prospective negotiations.[130]

In contrast to the process towards the Paris Agreement, there have been scant discussions in relation to the legal nature of the post-2020 instrument during the post-2020 framework's OEWG discussions. The zero draft of the post-2020 framework states that it 'is envisaged that the framework would be accompanied by a decision of the Conference of the Parties that would give effect to the implementation of the framework under the Convention.'[131] So while the door remains open for binding commitments to emerge from the post-2020

negotiations, without concerted processes and direction towards such a goal the more likely scenario is that Kunming will mark the continuation of the non-binding target approach of previous years.

The growing recognition in the global arena of the fundamental importance of biodiversity and our interactions with nature is a reason for hope. It is highly desirable that the CBD moves beyond a mere instrument of aspiration. It is important, nevertheless, not to be overly disheartened should Kunming fail to deliver binding obligations for biodiversity. Instead, momentum from Kunming, on the one hand, and the *IPBES Global Assessment*, on the other, should be channelled towards a process of binding commitments in subsequent CBD COPs. Though it remains possible that binding commitments will emerge from the CBD's COP-15, what is more likely is that the convention will continue along the 'soft' path that it has tread for the last two decades. Regardless of the 'bindingness' of the post-2020 framework, what is apparent is that current discussions are on track to deliver a new set of global biodiversity targets in Kunming. The following section discusses how the targets themselves might be formulated to enhance their effectiveness.

B. Enhancing the Kunming Targets

The target-based approach of the CBD reflects broader moves in international governance to 'govern through goals.' Other high-profile examples include the Sustainable Development Goals and their predecessors, the Millennium Development Goals, as well as the Paris Agreement. This approach has been accompanied by a growing body of literature that has analysed this emerging approach of international sustainability governance.[132] The effective use of targets within multilateral environmental agreements has the potential to enhance the credibility of the agreement while indicating the intention of contracting parties to implement the agreement in a meaningful way.[133] The shortcomings of the CBD's 2010 targets, however, have threatened to discourage global action on biodiversity while undermining the role of the convention.[134] Similarly, the failure to achieve most of the Aichi Biodiversity Targets could further jeopardize the influence of the CBD's processes or even global regulation of biodiversity more generally. Alternatively, the failure to meet the Aichi Biodiversity Targets, combined with the increased recent appreciation of, and attention to, biodiversity concerns globally, could provide the catalyst for greater ambition in setting the Kunming targets and an enhanced intention of meeting them.

To stem further species extinctions and restore biodiversity, governments need to provide important leadership. At the same time, it is essential that non-state actors such as IPLCs, non-governmental organizations, and the business and finance sectors are brought along in this process, such as in the Action Agenda of the UNFCCC.[135] Though the inclusion of equity- and rights-based targets within the Aichi Biodiversity Targets has been an important development, the relatively low implementation rates of these

targets are reason for concern. It also suggests that limited implementation is not necessarily due to the lack of the measurability of targets but, rather, due to the extent to which these targets challenge vested interests of the status quo. Correspondingly, further work is needed not only for addressing the technical issues of formulating 'SMART' targets but also in addressing underlying barriers to institutional transformation.[136]

Importantly, the lessons of the Aichi Biodiversity Targets need to be taken into account when developing the Kunming targets. In particular, there needs to be accountability mechanisms through built-in reporting processes. Though hope for an entirely new binding Kunming instrument is perhaps too optimistic, opportunities remain for enhancing the accountability of contracting parties through the use of existing obligations contained within the CBD. As discussed above, the development of NBSAPs by contracting parties is one of the Aichi Biodiversity Targets where progress has been made. Add to this the requirement under the CBD's Article 6 to report on implementation of the convention, then it is not too far of a stretch for contracting parties to agree to a process of reporting on the Kunming targets in reflection of countries' Article 6 obligations.

v. Conclusions

It is fundamentally important that biodiversity is no longer treated as a peripheral issue or a luxury that is 'nice to have' within the confines of protected areas. If current trajectories continue, we will jeopardize the diversity of life on Earth and that which makes life worth living. We will also dramatically undermine the capacity of the planet to sustain human health and thriving communities and societies. In the almost thirty years since its entry into force, the CBD has served as an important multilateral policy instrument that has proved useful in galvanizing global aspiration. Much has changed in this intervening time both in terms of the reality of global sustainability issues and our understanding of them. At the same time, the limitations of the direction of the convention as a 'soft' instrument is increasingly clear. If we are to stem the unprecedented loss of the diversity of life on Earth, the target-based approach of the CBD cannot continue in its current form.

At the start of this article, I posed two questions: (1) can the post-2020 framework move the CBD from an instrument of aspiration to one of action and (2) can the convention draw from the lessons of its past to shape a global governance landscape that moves us towards the future we want for humans and nature? If the 'can' of both questions is understood in the sense of 'does the convention have the capacity to bring about the significant changes that are so urgent and necessary,' my response to both questions is 'yes.' This answer in the affirmative is nevertheless subject to qualification.

As discussed above, the current pandemic pause provides a glimmer of opportunity that the Kunming discussions will lead to a new binding instrument on par with the Paris Agreement under the UNFCCC. This will require, however, a significant shift away from the direction of the discussions at OEWG-2, which took place in Rome at the end of February 2020—the last time all of the parties and observers convened to discuss the post-2020 framework. There is scope for the post-2020 framework to result in strengthened commitments to address the key drivers of biodiversity loss and the use of existing mechanisms such as NBSAPs to facilitate the realization of such commitments. In the progression from the 2010 Biodiversity Target to the Aichi Biodiversity Targets, the CBD and its parties have demonstrated that they have drawn on the experiences of the previous decade. While ultimately insufficient, the capacity to learn from past practices, to some degree, is reason for optimism in the further development of the post-2020 framework and, ultimately, of the convention itself.

The post-2020 framework provides the first opportunity to accelerate ambition not only in relation to the content of the CBD but also, importantly, to shared legal and moral responsibility for safeguarding the foundations on which continued human development depends. To chart a new course for biodiversity, we need not only to heed the lessons of the last thirty years but also, ultimately, to move swiftly towards deliberate and consolidated transformations of our legal frameworks and our relationships with nature.

Footnotes

1 Convention on Biological Diversity, 1992, 1760 UNTS 79 (CBD); *2050 Vision: The Strategic Plan for Biodiversity 2011–2020 and the Aichi Biodiversity Targets*, Doc UNEP/BD/COP/DEC/X/2 (2010), Annex, para 11.

2 Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), *Summary for Policymakers of the Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services* (Bonn: IPBES Secretariat, 2019); Sandra Díaz et al, 'Pervasive Human-Driven Decline of Life on Earth Points to the Need for Transformative Change' (2019) 366 Science eaax3100.

3 IPBES, *supra* note 2.

4 The CBD's fifteenth Conference of the Parties (COP-15) and the final negotiation of the post-2020 framework were scheduled to take place in Kunming in October 2020 but were postponed due to the COVID-19 pandemic. The (tentative) plan is to hold COP-15 in Kunming in the second quarter of 2021 (see <https://www.cbd.int/process/>).

5 Georgina Mace et al, 'Aiming Higher to Bend the Curve on Biodiversity Loss' (2018) 1 Nature Sustainability 448 at 448.

6 *Ibid.*

7 Colin Waters et al, 'The Anthropocene Is Functionally and Stratigraphically Distinct from the Holocene' (2016) 351 Science 137.

8 Will Steffen et al, 'The Trajectory of the Anthropocene: The Great Acceleration' (2015) 2 Anthropocene Review 81; Waters et al, *supra* note 7.

9 Will Steffen et al, 'Planetary Boundaries: Guiding Human Development on a Changing Planet' (2015) 347 Science 736.

10 Gerado Ceballos et al, 'Accelerated Modern Human-induced Species Losses: Entering the Sixth Mass Extinction' (2015) 1 Science Advances e1400253.

11 Elisabeth McLellan et al, eds, *Living Planet Report 2014*: *Species and Spaces, People and Places* (2014).

12 IPBES, *supra* note 2 at 11.

13 *Ibid*; Díaz et al, *supra* note 2.

14 Metz Charter on Biodiversity (6 May 2019) <https://www.ecologique-solidaire.gouv.fr/sites/default/files/2019.05.06_EN_Biodiversity_Charter.pdf>.

15 Group of Seven France, *Biarritz Chair's Summary on Climate, Biodiversity and Oceans* (26 August 2019) <https://www.elysee.fr/admin/upload/default/0001/05/622fadea9ed312f1f42c6e4e7cbb126086a30897.pdf>.

16 Metz Charter on Biodiversity, *supra* note 14, art 1.

17 See, eg, Open-Ended Working Group on the Post-2020 Global Biodiversity Framework (OEWG on Global Biodiversity Framework), *Preparation of the Post-2020 Global Biodiversity Framework: Draft Recommendation Submitted by the Co-chairs*, Doc CBD/WG2020/2/L.2 (24–9 February 2020).

18 Steffen et al, *supra* note 8; Johan Rockström et al, 'Planetary Boundaries: Exploring the Safe Operating Space for Humanity' (2009) 14 Ecology and Society 32.

19 See Steffen et al, *supra* note 9.

20 The Earth system refers to the interconnected natural cycles and interacting biophysical and chemical processes of our planet. See International Geosphere-Biosphere Programme, *Earth System Definitions* (2015) <http://www.igbp.net/globalchange/earthsystemdefinitions.4.d8b4c3c12bf3be638a80001040.html>. The other 'core' planetary boundary is climate change. See Steffen et al, *supra* note 9, 1259855–8.

21 Georgina Mace et al, 'Approaches to Defining a Planetary Boundary for Biodiversity' (2014) 28 Global Envtl Change 289. Other boundaries include climate change, freshwater use, land-system change, novel entities, biochemical flows (phosphorus and nitrogen), ocean acidification, stratospheric ozone depletion, and atmospheric aerosol loading; Steffen et al, *supra* note 9.

22 Rockström et al, *supra* note 18.

23 Steffen et al, *supra* note 9 at 1259855–6; Mace et al, *supra* note 21 at 290.

24 Mace et al, *supra* note 21 at 290.

25 Steffen et al, *supra* note 9 at 1259855, 1259856.

26 Esther Turnhout, Art Dewulf and Mike Hulme, 'What Does Policy-Relevant Global Environmental Knowledge Do? The Cases of Climate and Biodiversity' (2016) 18 Current Opinion in Environmental Sustainability 65 at 66.

27 See, eg, Donna Harraway, *Staying with the Trouble: Making Kin in the Chthulucene* (2016).

28 Turnhout, Dewulf and Hulme, *supra* note 26 at 67–8.

29 *Ibid*; Jorge Soberón and A Townsend Peterson, 'Biodiversity Governance: A Tower of Babel of Scales and Cultures' (2015) 13(3) PLoS Biology e1002108 at 1; Mace et al, *supra* note 21.

30 Mace et al, *supra* note 21 at 290.

31 This does not mean that the number of different species is not important but, rather, that it is not the best or only means of determining the health of an ecosystem. Mace et al, *supra* note 21.

32 Neil Adger, Hallie Eakin and Alexandra Winkels, 'Nested and Teleconnected Vulnerabilities to Environmental Change' (2009) 7(3) Frontiers in Ecology and the Environment 150.

33 Teleconnections between atmospheric systems have, for example, been recognized for the last thirty years. See, eg, Michael Glantz, Richard Katz and Neville Nicholls, eds, *Teleconnections Linking Worldwide Climate Anomalies* (1991); J Liu et al, 'Framing Sustainability in a Telecoupled World' (2013) 18 Ecology and Society 1, 2.

34 L Roman Carrasco et al, 'Biodiversity Conservation in a Telecoupled World' (2017) 22(3) Ecology and Society at 1; Adger, Eakin and Winkels, *supra* note 32.

35 Liu et al, *supra* note 33 at 1.

36 Carrasco et al, *supra* note 34 at 1.

37 *Ibid* at 7–8.

38 *Ibid* at 1, 4, 5.

39 The 1987 Governing Council decision of the United Nations Environment Programme (UNEP) called upon UNEP to establish an Ad Hoc Working Group of Experts on Biological Diversity. *Rationalization of International Conventions on Biological Diversity*, UNEP Governing Council Decision 14/26 (1987).

40 The Rio Earth Summit's official name is the United Nations Conference on Environment and Development, 3–14 June 1993, Rio de Janeiro, Brazil. The other convention concluded at the summit was United Nations Framework Convention on Climate Change, 1992, 1771 UNTS 107 (UNFCCC).

41 Stuart Harrop and Diana Pritchard, 'A Hard Instrument Goes Soft: The Implications of the Convention on Biological Diversity's Current Trajectory' (2011) 21 Global Environmental Change 474 at 475.

42 At the United Nations Conference on Environment and Development in Rio de Janeiro.

43 Secretariat of the Convention on Biological Diversity, *Handbook of the Convention on Biological Diversity: Including Its Cartagena Protocol on Biosafety* (3rd edn, 2005) at xxiii.

44 Of the 196 parties to the CBD, 168 are signatories. Convention on Biological Diversity, *List of Parties* (24 April 2020) <http://www.cbd.int/convention/parties/list/>. Despite heavy involvement in the negotiation of the convention, intellectual property rights were, and continue to be, a concern of the US government. George Bush Senior ultimately refused to sign the CBD as it 'clearly threatened American jobs.' While this decision was reversed in 1993 with the incoming Clinton administration signing the convention, the United States has never taken the next step of ratification. See Kal Raustiala, 'Domestic Institutions and International Regulatory Cooperation: Comparative Responses to the Convention on Biological Diversity' (1997) 49 World Politics 482 at 493–4.

45 Kai-Ching Cha, 'Can the Convention on Biological Diversity Save the Siberian Tiger?' (2000–1) 24 Environs Environmental Law and Policy Journal 3 at 21.

46 CBD, *supra* note 1, art 2.

47 The Convention includes in its in-situ conservation provisions calls for the promotion of the protection of ecosystems, habitats, and viable populations. CBD, *supra* note 1, art 8(d). Decision 6 of the fifth Conference of the Parties to the CBD (Fifth Conference of the Parties (COP-5) Decision 6- Ecosystem Approach, Nairobi, 15–26 May 2000) endorsed the ecosystem approach and takes the conceptualization further to include the social and political landscape. In the decision, the ecosystem approach is defined as 'a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way.' The ecosystem/ landscape approach to ecosystem management is the most commonly cited ideal for setting restoration goals. See R.G. Ehrenfeld, 'Defining the Limits of Restoration: The Need for Realistic Goals' (2000) 8 Restoration Ecology 2.

48 Convention on International Trade in Endangered Species of Wild Fauna and Flora, 1973, 993 UNTS 243; International Convention for the Regulation of Whaling, 1946, 161 UNTS 72.

49 Convention on Wetlands of International Importance Especially as Waterfowl Habitat, 1971, 996 UNTS 245 (Ramsar Convention). The Ramsar Convention adopted a habitat and sustainable use approach to the conservation of wetlands; Convention for the Protection of the World Cultural and Natural Heritage, 1972, 1037 UNTS 151 (World Heritage Convention). The World Heritage Convention has been a factor in some national development plans that were altered to avoid damage to listed sites.

50 Brian Walker, 'Conserving Biological Diversity through Ecosystem Resilience' (1995) 9 Conservation Biology 747.

51 Ehrenfeld, *supra* note 47.

52 CBD, *supra* note 1, art 1.

53 Harrop and Pritchard, *supra* note 41 at 475.

54 Alan Boyle, 'The Rio Convention on Biological Diversity' in Michael Bowman and Catherine Regwell, eds, *International Law and the Conservation of Biological Diversity* (1996) 33.

55 CBD, *supra* note 1, art 6(a).

56 *Ibid*, arts 6(b), 10(a).

57 *Ibid*, art 8(k).

58 *Ibid*, art 10(b).

59 *Ibid*, art 10(e).

60 *Ibid*, art 8(a), (b).

61 *Ibid*, art 8(c).

62 *Ibid*, arts 8(f), 9(c).

63 *Ibid*, art 7.

64 *Ibid*, art 8(h).

65 *Ibid*, art 8(l).

66 *Ibid*.

67 *Ibid*, art 3.

68 *Ibid*, preamble.

69 *Recommendations Concerning International Respect for the Right of Peoples and Nations to Self-Determination*, GA Res 1314, UN GAOR, UN Doc A/Res/ 1314 (1958). This principle was recalled in 1962 (*Permanent Sovereignty over Natural Resources*, GA Res 1803, UN Doc A/Res/1194 (1962)), where it was further recognized that this permanent sovereignty included the inalienable right of all states to freely dispose of their natural wealth and resources in accordance with their national interests. Then, in 1972, these principles were specifically reaffirmed with regard to developing countries. *Permanent Sovereignty over Natural Resources of Developing Countries*, GA Res 3016, UN Doc A/Res/3016 (1972). The 1972 resolution emphasizing the great importance for the economic progress of all countries to fully exercises their rights so as to secure the maximum yield from their natural resources.

70 John Charles Kunich, 'Fiddling Around While the Hotspots Burn Out' (2001–2) 14 Georgetown International Environmental Law Review 179 at 188.

71 Raustiala, *supra* note 44 at 493.

72 Harrop and Pritchard, *supra* note 41 at 476.

73 CBD, *supra* note 1, art 6(a).

74 Convention on Biological Diversity, 'What Are NBSAPs?' (n.d.) <https://www.cbd.int/nbsap/introduction.shtml>.

75 CBD, *supra* note 1, art 28.

76 Cha, *supra* note 45 at 22; Brent Hendricks, 'Postmodern Possibility and the Convention on Biological Diversity' (1996) 5 New York University Environmental Law Journal 1 at 9.

77 *Rationalization of International Conventions on Biological Diversity*, UNEP Governing Council Decision 14/26 (1987).

78 Hendricks, *supra* note 76 at 8.

79 *Ibid*.

80 CBD, *supra* note 1, art 23, states that contracting parties 'shall cooperate in the formulation and adoption of protocols to this Convention.'

81 *Ibid*, art 24.

82 *Ibid*, art 2.

83 Hendricks, *supra* note 76 at 16.

84 Cartagena Protocol on Biosafety, 2000, 39 ILM 1027 (2000).

85 Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization, 2014, 2161 UNTS 447.

86 The legality of COP decisions is beyond the scope of this article. For an excellent detailed discussion, see Jutta Brunnée, 'COPing with Consent: Law-making under Multilateral Environmental Agreements' (2002) 15 Leiden Journal of International Law 1.

87 *Decision V/20 on the Operations of the Convention*, Doc CBD/COP5 (2000).

88 Decision VI/26 on a Strategic Plan for the Convention on Biological Diversity, Doc CBD/COP6 (2002).

89 *Ibid* at para 11.

90 Johannesburg Plan of Implementation, reprinted in *Report of the World Summit on Sustainable Development*, Johannesburg, South Africa, 26 August-4 September 2002, UN Doc A/CONF.199/20 (2002) at para 4.

91 Millennium Development Goals <https://www.un.org/millenniumgoals/environ.shtml>.

92 Harrop and Pritchard, *supra* note 41 at 477.

93 Georgina Mace and Jonathan Baillie 'The 2010 Biodiversity Indicators: Challenges for Science and Policy' (2007) 21 Conservation Biology 1406 at 1407.

94 CBD, *Strategic Plan: Future Evaluation of Progress*,' Doc CBD/COP7/Decision VII/30 (2004), Annex 1.

95 Shannon Hegerman and Ricardo Pelai, "'As Far as Possible and as Appropriate": Implementing the Aichi Biodiversity Targets' (2016) 9 Conservation Letters 469 at 469.

96 CBD, *2050 Vision: The Strategic Plan for Biodiversity 2011–2020 and the Aichi Biodiversity Targets*, Doc UNEP/BD/COP/DEC/X/2 (2010) at para 5 (*Strategic Plan for Biodiversity*).

97 *Ibid*.

98 *Ibid* at para 11.

99 Hegerman and Pelai, *supra* note 95 at 470.

100 'The United Nations Must Get Its New Biodiversity Targets Right,' editorial (2020) 578 Nature 337 at 337.

101 CBD, *supra* note 1, art 6.

102 CBD, *National Biodiversity Strategies and Action Plans (NBSAPs)* (n.d.) <https://www.cbd.int/nbsap/>.

103 'United Nations Must Get,' *supra* note 100 at 337.

104 Harrop and Pritchard, *supra* note 41 at 477.

105 IPBES, *supra* note 2 at 14.

106 Ceballos et al, *supra* note 10.

107 *Strategic Plan for Biodiversity*, *supra* note 96, Annex at para 11.

108 CBD, *supra* note 1, art 1.

109 IPBES, *supra* note 2 at 16.

110 Stephen Garnett et al, 'A Spatial Overview of the Global Importance of Indigenous Lands for Conservation' (2018) 1 Nature Sustainability 369.

111 Sandra Díaz et al, 'A Rosetta Stone for Nature's Benefits to People' (2015) 13 PLOS Biology 1.

112 Sandra Díaz et al 'Assessing Nature's Contributions to People: Recognising Culture, and Diverse Sources of Knowledge, Can Improve Assessments' (2018) 359 Science 270.

113 Unai Pascual et al, 'Valuing Nature's Contributions to People: The IPBES Approach' (2017) 26–7 Current Opinion in Environmental Sustainability 7; Díaz et al, *supra* note 112.

114 CBD, *supra* note 1, art 20(4).

115 See, eg, *Strategic Plan for Biodiversity*, *supra* note 96; OEWG on Global Biodiversity Framework, *supra* note 17.

116 OEWG on Global Biodiversity Framework, *Zero Draft of the Post-2020 Global Biodiversity Framework*, Doc CBD/WG2020/2/3 (6 January 2020), Draft Target 18.

117 *Ibid*, Draft Target 19.

118 *Strategic Plan for Biodiversity*, *supra* note 96, Aichi Biodiversity Targets 14 and 18. OEWG on Global Biodiversity Framework, *supra* note 17.

119 Secretariat of the Convention on Biological Diversity, *Global Biodiversity Outlook 3* (2010); Ian Thompson and Tim Christophersen, *Cross-Sectoral Toolkit for the Conservation and Sustainable Management of Forest Biodiversity* (Montreal: Secretariat of the Convention on Biological Diversity, 2008).

120 Brendan Fisher and Treg Christopher, 'Poverty and Biodiversity: Measuring the Overlap of Human Poverty and the Biodiversity Hotspots' (2007) 62 Ecological Economics 93; Will Turner et al, 'Global Biodiversity Conservation and the Alleviation of Poverty' (2012) 62 BioScience 85; Claudia Binder et al, 'Comparison of Frameworks for Analyzing

Social-ecological Systems' (2013) 18 Ecology and Society 1; Jeffrey Sachs et al, 'Biodiversity Conservation and the Millennium Development Goals' (2009) 325 Science 1502.

121 Mace et al, *supra* note 5 at 449–50.

122 Carrasco et al, *supra* note 34 at 4.

123 See OEWG on Global Biodiversity Framework, *supra* note 17.

124 Michelle Lim, Peter Søgaard Jørgensen and Carina A Wyborn. 'Reframing the Sustainable Sevelopment Goals to Achieve Sustainable Development in the Anthropocene: A Systems Approach' (2018) 23(3) Ecology and Society <https://www.ecologyandsociety.org/vol23/iss3/art22/>.

125 See note 4 above.

126 Harrop and Pritchard, *supra* note 41 at 479.

127 See, eg, Patrick Greenfield, 'UN Draft Plan Sets 2030 Target to Avert Earth's Sixth Mass Extinction: Paris-Style Proposal to Counter Loss of Ecosystems and Wildlife Vital to the Future of Humanity Will Go before October Summit,' *The Guardian* (13 January 2020) <https://www.theguardian.com/environment/2020/feb/18/world-leaders-urged-to-step-back-from-precipice-of-ecological-ruin-aoe>. Paris Agreement on Climate Change, 2015, 55 ILM 740 (2016).

128 Kyoto Protocol to the United Nations Framework Convention on Climate Change, 1998, 37 ILM 32 (1998).

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130 Marcel Kok et al, *From Paris to Beijing: Insights Gained from the UNFCCC Paris Agreement for the Post-2020 Global Biodiversity Framework* (2018).

131 OEWG on Global Biodiversity Framework, *supra* note 17.

132 See, e.g., Norichika Kanie and Frank Biermann, eds, *Governing through Goals: Sustainable Development Goals as Governance Innovation* (2017).

133 Hegerman and Pelai, *supra* note 95 at 469.

134 *Ibid* at 470.

135 Kok et al, *supra* note 130 at 9–10; Mace et al, *supra* note 5 at 450.

136 Hegerman and Pelai, *supra* note 95 at 473–4, 76.