A Nature-Positive World: The Global Goal for Nature

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Abstract

The world faces interconnected crises of biodiversity loss, climate change, and human development inequities. While equitable development for humans is the focus of the Sustainable Development Goals and the goal of carbon-neutrality sums up the combined efforts under the Paris Agreement to the UNFCCC, no equivalent succinct goal exists for nature and the global agreements that address various dimensions of biodiversity. We argue for the adoption of a succinct Nature-Positive Global Goal for Nature. The goal would have three measurable temporal objectives: *Zero Net Loss of Nature from 2020, Net Positive by 2030, and Full Recovery by 2050.* It should be combined with development and climate goals to create an integrated overarching direction for global agreements of an Equitable, Nature-Positive, Carbon-Neutral world. This integration would recognize that none of the goals is achievable without the others and would encourage a much-needed focus on synergies among the goals.

Key words: nature-positive, global goal, equitable, carbon-neutral

Introduction

Humanity is waging a war on nature. This is suicidal. Making peace with nature is the defining task of the 21st century. It must be the top, top priority of everyone, everywhere. UN Secretary General Antonio Gutteres, December 2020 [1].

The dangerous and worsening decline of biodiversity has been well documented [2,3]. This has serious consequences for the health of the planet, its human inhabitants and the rest of life. To improve this dire condition, we must focus on it. At the start of the 2020 United Nations (UN) General Assembly and Biodiversity Summit, a wide-ranging group of global nature and development non-governmental organizations (NGOs) and business organizations issued a Call to Action for a clear and overarching Nature-Positive Global Goal for Nature that could be integrated with other global goals to create an "equitable, carbon-neutral, nature-positive world" [4].

Here we explain the need for an actionable global goal for nature that is nature-positive, provide the scientific justification for the nature-positive concept, and discuss how a nature-positive goal can be set as an objective of all Multi-lateral environmental agreements (MEAs), the Sustainable Development Goals (SDGs), and be adopted by business. The need for a clear goal for nature that can be integrated across society and global agreements is underscored by the plans for the 2021 Climate Conference of the Parties (COP) in Glasgow to focus on nature for the first time.

Nature-positive and the Global Goal for Nature

Nature-positive means halting and reversing nature loss by 2030, measured from a baseline of 2020. It is an objective that should inform actions under all MEAs, in particular the three Rio Conventions (the Convention on Biological Diversity [CBD], the United Nations Framework Convention on Climate Change [UNFCCC] Paris Agreement, and the United Nations Convention to Combat Desertification [UNCCD]) and the SDGs, and guide the activities of

government, civil society and business.

The Global Goal for Nature identifies the level of ambition needed to achieve a nature-positive world with three measurable temporal objectives: *Zero Net Loss of Nature from 2020, Net Positive by 2030, and Full Recovery by 2050.* The baseline of 2020 serves as a reference for zero net nature loss to ensure that we focus on retention of large intact areas as well as all remaining natural ecosystem fragments. The year 2030 is a milestone for improvement in the abundance, diversity and resilience of species and of ecosystems. Meeting this 2030 objective will require immediate restoration beginning in 2020 (the first year of the UN Decade of Restoration) as well as retention of existing natural ecosystems whether they be highly intact or remnant fragments. The 2050 objective requires continued retention and restoration until there are sufficient functioning ecosystems to safeguard the stability and resilience of the Earth system, and support all life on Earth, including future generations of people so that the CBD's 2050 vision of Living in Harmony with Nature, the UNFCCC's 2050 carbon neutrality goal, and the SDGs are actually possible to achieve.

The Global Goal for Nature is practical. "Zero Net Loss" from 2020 acknowledges that some loss or degradation of nature in the near term is an inevitable result of humanity's ongoing demand for food, energy, materials, transport and differing stages of development [5,6]. However, the magnitude of these losses should be systematically assessed when economic projects are designed and robust efforts should made to implement a scientifically informed mitigation hierarchy [7] that avoids areas that are significant for biodiversity, limits other losses to nature, and compensates for unavoidable losses through ecological restoration.

"Net Positive by 2030" means conditions are improved from the 2020 baseline so that through our combined actions humanity succeeds in bending the curve of biodiversity loss from its current negative trajectory to a positive one [8] It recognizes the inevitability of a limited period of continued species and ecosystem loss, while setting the goal of reaching an inflection point within this decade and a transition to a net zero point (in relation to the 2020 reference point) before 2030 (Figure 1). This implies halting loss of species, effectively conserving important sites for biodiversity such as Key Biodiversity Areas, safeguarding intact natural systems, restoring human impacted landscapes and seascapes, and reducing the consumption and production drivers of biodiversity loss.

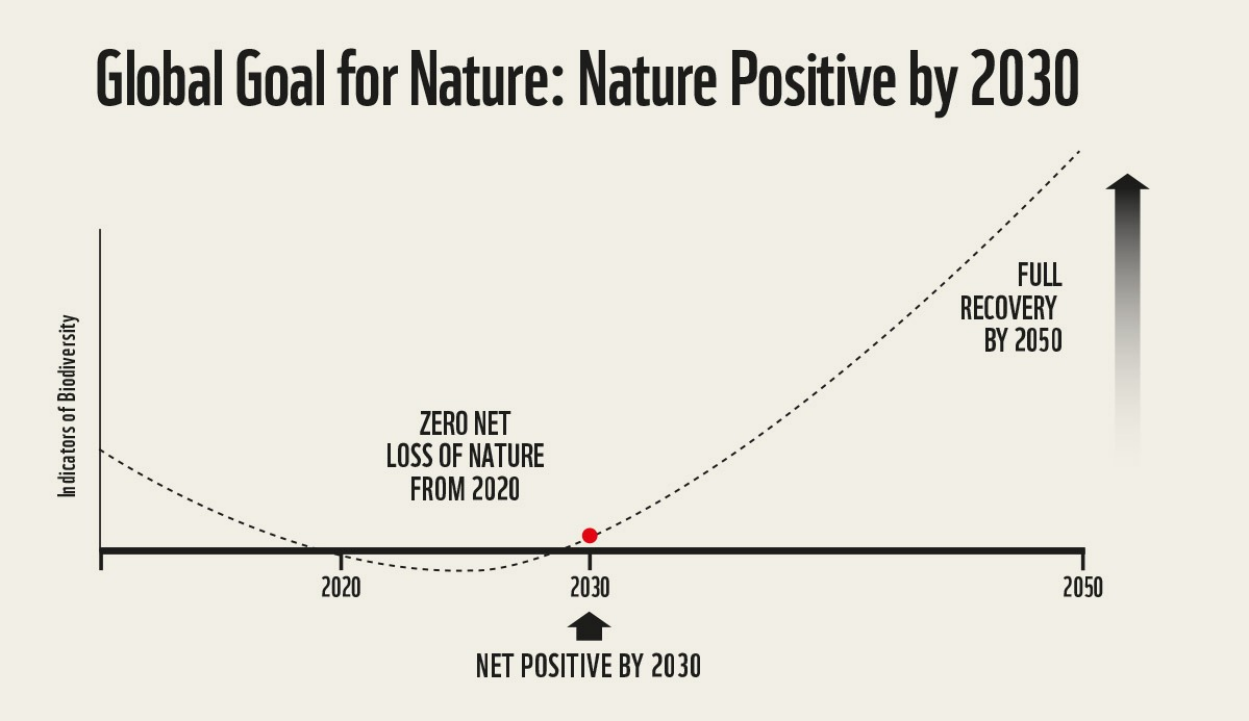

Figure 1. The trajectory of nature positive by 2030. It recognizes some ongoing loss is unavoidable given current trends and identifies the goal of a net improvement to a nature-positive condition by 2030 (from a 2020 baseline) and full recovery by 2050.

Important steps to succeed in being nature-positive by 2030 include such goals as preventing the extinction of all known threatened species, protecting and conserving at least 30% of the world's land, sea and freshwater systems [62], 20% native vegetation recovery in the most heavily transformed areas [9,10] and the Bonn Challenge's global goal of bringing 350 million hectares of degraded and deforested landscapes into restoration by 2030. Approaches to restoration should follow the Ten Golden Rules for carbon sequestration, biodiversity recovery and livelihood benefits [76] and would benefit from application of the newly developed species threat abatement and restoration metric (STAR) (78). To realize the nature-positive goal also requires a fundamental shift to more sustainable production and consumption patterns on the rest of landscape and seascape [11]. The aggregate of these kinds of actions would make it possible for the world to be net nature-positive by 2030.

Nature-positive includes a focus on species distribution, abundance, functional traits, genetic diversity, and demographic trends as well as the intactness and integrity of ecosystems and biomes. It also includes the functioning of ecological and global processes such as hydrology [12], rainfall patterns [13] and migration that support biodiversity, maintain drinking water supplies, sustain agriculture, and ensure a stable climate. Together these provide a resilient planet able to cope with shocks and stresses without crossing destabilizing tipping points. Abundance and functionality, across scales from local ecosystems to the entire Earth system, should be our goal for all life on Earth. Connecting the nature-positive goal to equity and carbon neutrality recognizes the fundamental connection between human development and the health of nature and

the deep connection between nature, climate and Earth system stability. Such an encompassing view of what is required for nature is consistent with the MEAs and the SDGs.

Nature-positive is also foundational to both human health and economic objectives because the loss of biodiversity has reached such an alarming rate and scale that it threatens human life support and economies around the world [3]. More than half of global gross domestic product (GDP) is moderately or highly dependent on nature, putting biodiversity loss among the top five risks to the global economy [14]. Human pressures on nature undermine the functioning of natural habitats and ecosystems, increasing the risk of new infectious diseases, moving from stressed wildlife and captive animals, to spread through human populations [15].

The need for a nature-positive Global Goal for Nature

The famous photos of the Earth from space in the late 1960s jarred the human conscience by making us aware that we live on a fragile and finite planet [16]. This was front of mind at the first global meeting on the Health of the Human Environment in Stockholm in 1972 whose Declaration recognized that "man has acquired the power to transform his environment in countless ways and at an unprecedented scale." Principle 3 declared "The capacity of the Earth to produce vital renewable resources must be maintained" [17].

In the late 1980s the UN's Brundtland Report stated that humanity was badly failing those responsibilities, noting starkly "environmental trends that threaten to radically alter the planet, that threaten the lives of many species upon it, including the human species." It introduced to the world the idea of "sustainable development" and noted that "the diversity of species is necessary for the normal functioning of ecosystems and the biosphere as a whole". Protecting species and their ecosystems was declared to be an "indispensable prerequisite" to sustainable development. It recommended a global conference be held by the UN to these ends [16].

In 1992, on the 20th anniversary of Stockholm, the UN Conference on Environment and Development was held in Brazil. Climate change had just been recognized as a major threat. It gave rise to three Conventions: the Convention on Biological Diversity (CBD), the UN Framework Convention on Climate Change (UNFCCC) and the UN Convention to Combat Desertification (UNCCD) that came to be known as the Rio Conventions. Going into CBD negotiations there was growing recognition that species and their ecosystems "were not just exploitable resources but the very life-support systems of the planet" [18]. However, the issues were such that only framework conventions were negotiated for the both the climate and biodiversity "leaving the tough substantive issues to the future." Thus, no global goal for either nature or the climate was set in Rio [18].

The 2010-20 CBD Strategic Plan [19] set strategic goals and twenty Aichi targets which supported a vision of Living in Harmony with Nature but did not set an overarching goal for nature.

It was not until 2015 that the Parties to the UNFCCC specified what was needed to achieve its basic purpose which is to avoid dangerous human-caused climate change. The Paris Agreement

set a science-based quantitative goal to keep global warming well below 2°C and to aim for 1.5°C. This global goal for climate has been translated into a global carbon budget, resulting in different development pathways with science-based targets to cut emissions by half each decade in order to reach net-zero emissions by 2050 (known as "carbon neutrality"). Expressing the goal as carbon neutrality has been important because governments and businesses can manage for that goal whereas they cannot manage for a temperature change objective.

That same year, the UN SDGs were agreed for the "promotion of sustainable, inclusive and equitable economic growth" [20]. The SDGs "recognize that ending poverty must go hand-in-hand with strategies that build economic growth and address a range of social needs including education, health, social protection, and job opportunities, while tackling climate change and environmental protection." While there are 17 SDGs they can be summarized succinctly by the goal of an equitable world.

Now, in the run up to the CBD negotiations in 2021, where Parties (all but two of the world's UN Member States) will set new targets for biodiversity, there is a need for an equivalent science-based approach for nature. Much like avoiding dangerous emissions to keep the temperature at 1.5°C, the CBD vision of Living in Harmony with Nature is the outcome desired. But just as climate actions needed the goal of carbon neutrality with decadal objectives, nature conservation and sustainable use needs an overarching goal of "nature -positivity" including a global goal for nature with decadal objectives that both governments and businesses can manage for.

The addition of a clear nature-positive global goal for nature that can be combined with human development and climate goals would give humanity a guiding "North Star/Southern Cross" for development pathways across the world to bring about an equitable, nature-positive, and carbon-neutral future.

The relationship between nature-positive and carbon-neutral

There is ample scientific justification for an overarching carbon neutrality goal to address the climate problem. Our burning of fossil fuels and land use change has already increased global mean temperature by 1.2°C. In 2020 we reached the warmest average temperature on Earth since the last Ice Age, some 12,000 years ago. Too often land and sea use changes, the nature-negative dimension of this problem, have been ignored.

The most recent climate modelling shows that despite natural shocks, stresses and variability over the past 3 million years, the Earth never exceeded 2°C global warming above the pre-industrial global mean temperature [21]. Thus, Earth has remained within an extremely narrow temperature corridor during the entire Quaternary period (when our planet has resembled the planet we depend on today), never exceeding a maximum warming of 2°C during the warmest inter-glacial periods or a maximum cooling of 6°C during the deepest Ice Ages. This stable climate enabled the emergence, evolution and expansion of *Homo sapiens* populations. The temperature variations were caused by both external (solar forcing) and internal natural atmospheric pressures (volcanic eruptions and earthquakes), as well as biosphere and geosphere

interactions and feedbacks. Key to the stability of the temperature regime despite these pressures has been nature's ability to absorb and store carbon dioxide on land and in the ocean, to regulate moisture flows from biomass to atmosphere, and the reflectivity of solar radiation (albedo) of land surfaces and ocean ice.

But humans have recently changed the equation. We have emitted some 550 Giga-tonnes of Carbon (GtC) since the industrial revolution in the mid-18th century loading the atmosphere with approximately 280 GtC more. Carbon dioxide does not come exclusively from industrial emissions. Agriculture including deforestation is the single largest source of greenhouse gases accounting for about 25% [22]. The difference between total emissions and the 280 GtC added to the atmosphere (550-280) has been absorbed by nature, on land and in the ocean. If nature's capacity to absorb carbon is diminished or carbon stored in nature is disturbed then the carbon ends up in the atmosphere [23], thus imperilling climate goals [24].

Approximately 50% of natural terrestrial ecosystems have been converted by humans into farmland, urban land or for natural resource extraction and infrastructure [25]. On the other hand, unconverted ecosystems hold carbon stocks while continuing to remove carbon from the atmosphere. A recent estimate shows that there are about 150 GtC of irrecoverable carbon in natural ecosystems (particularly intact forests, marshlands, peatlands, grasslands, and permafrost in tundra), that if lost, are not possible to recover in time to meet net zero carbon goals in 2050 [24]. In the ocean, mangroves, sea grasses and other marine life forms all contain and store vast amounts of carbon and continue to remove carbon from the atmosphere [26,27]. The only way to preserve these existing carbon stocks and maintain the carbon sequestration function in both land and ocean ecosystems, is to preserve ecological functions provided by biodiversity and the natural processes they depend on. Biodiversity, which keeps carbon out of the atmosphere, also buffers impacts of climate forcing and weather extremes, and thus plays a vital role in regulating the final state of the planet.

Regreening the planet and avoiding degradation of intact natural systems such as forests (natural climate solutions) has been shown to be an effective pathway to contribute 37% of near-term carbon emission reductions needed to meet climate goals by 2030. When combined with flattening fossil fuel use immediately and then significant fossil fuel reductions after 2030, natural climate solutions are a key pathway to achieve carbon neutrality by 2050 [77].

Despite the close intertwining of the climate system with nature which ultimately determines the stability of the Earth system, we have not set a global goal for nature that corresponds with and supports the climate goal of carbon neutrality. Yet both nature and climate face urgent crises that pose catastrophic risks to humanity.

Safeguarding resilience and stability of the Earth system

Stabilizing the climate is not the only reason to set a nature-positive goal. The dangerous increase in global mean temperature is only one indication of the great acceleration of human pressures on Earth since the 1950s. Humanity is causing such large impacts on the life support systems and bio-geophysical processes that regulate the state of the Earth system, that we are now the largest driver of change on the planet [28]. The pace and scale of human-caused changes

on Earth are so large that many scientists believe we humans have triggered our own geological Epoch, the Anthropocene [29]. The ocean's chemistry is changing with an alarming increase in de-oxygenation and acidification [30]. Even the cyclical chemical balance of the earth ecosystem that gave rise to oxygen in the atmosphere and has driven the evolution of genes through time is being changed by humans [31].

The latest assessment shows that nine of the 15 known tipping elements - the biophysical systems and processes that contribute to regulating the state of the Earth system and which have evidence of multiple stable states (separated by thresholds) - are showing worrying signs of losing resilience by manifesting higher variability (e.g., forest fires), slowing down (e.g., Atlantic Meridional Overturning Circulation) or accelerating changes. Three biophysical systems have likely crossed tipping points already: Arctic summer ice, tropical coral reef systems, and parts of West Antarctica.

Looked at in terms of the limits of safe change to functions of the Earth system, human actions are transgressing four of the nine "planetary boundaries" [32] including the healthy condition of biodiversity. We are in the midst of the 6th mass extinction of species on Earth and are now at risk of losing 1 million species, many within decades. The severity of the situation cannot be exaggerated for reasons of habitability on Earth that transcend the moral failure of human-caused extinctions [33]. Research increasingly shows that losing biodiversity can result in ecosystem collapses [34], collapse of large biomes [35] and even a biosphere collapse at the Earth system scale [36], all of which would endanger the future of humanity. There is also a clear link between nature destruction and pandemics [15,37].

There is large body of literature about conservation measures that need to be taken at the scale of genes, species and ecosystems to stop the loss of biodiversity. Too often this concern for the well-being of nature is considered a luxury. The urgent need is to recognize that there is also another scale, that of the interactions between the large-scale living and non-living systems on Earth, which requires our immediate attention. Biodiversity results from and interacts with the non-living geophysical systems and physical processes on Earth (ice, water, air, weather), and chemistry (climate, acidity, nitrogen) to create a state of liveability and productivity on the planet.

Fifty years after Stockholm and thirty years after the Rio Earth Summit, humanity is now forced to confront whether we are at risk of destabilising the entire earth system due to our failure to address the loss of nature that we have caused [38]. Just as governments and many businesses have responded to the climate crisis with concrete actions focused on the clear and simple goal of carbon neutrality (which addresses one aspect of the chemistry of the atmosphere), they should now set a complementary actionable "nature-positive" global goal for all of nature.

The nature-positive goal, integrating the UN Conventions, and planetary health

Kim and Mackey [39] succinctly stated the need for a unifying overarching goal that unifies actions under MEAs: "the problem needing attention is the lack of a goal in the sense of a single, legally binding, superior norm that can serve to steer all environmental treaties and institutions

toward a common end." The good news is that existing MEA architecture contemplates a focus on the Earth system even if we have failed to set a goal for it to date.

The CBD's strategic plan (SP), which will be renegotiated in 2021, applies to the five so-called Biodiversity Related Conventions: the Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat; the UNCCD; the Convention on International Trade in Endangered Species of Wild Fauna and Flora; the International Treaty on Plant Genetic Resources for Food and Agriculture; and the Convention on the Conservation of Migratory Species of Wild Animals. The objective of the SP is to achieve a 2050 vision of Living in Harmony with Nature (LHN). The LHN vision includes but does not limit itself to biodiversity and its use by people; it also addresses global processes: "*By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services**, sustaining a healthy planet** and delivering benefits essential for all people*" (emphasis added).

The CBD objectives relating to ecosystem services and sustaining a healthy planet are about global systems and processes. This is reflected in the definition of ecosystem in the CBD: *"Ecosystem" means a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit*.

The CBD is, along with UNCCD and UNFCCC, a Rio Convention to which Rio Principle 7 applies: "*States shall cooperate in a spirit of global partnership to conserve, protect and restore **the health and integrity of the Earth's ecosystem**"* (emphasis added). Rio Principle 7 also applies to the SDGs [40,41].

Despite these references to a healthy planet, we have rarely focused on it except for the atmospheric dimension of the carbon cycle. The cost of neglect has been large. Describing the condition of the earth in December 2020 UN Secretary General Guterres said "Simply put, the state of the planet is broken" [1].

To sustain a healthy planet requires an Earth-systems approach as well as well-known species-specific and spatial conservation measures, and a nature-positive shift in the way we produce combined with reduction of overconsumption. The nature-positive goal encapsulates all these actions at all scales just as carbon neutrality is intended to encapsulate the varied actions needed to limit the global temperature increase to 1.5ºC. When combined with human development goals, the overarching objective of an "equitable, nature-positive, carbon neutral world" can serve to provide the much-needed goal that unifies the MEAs and SDGs.

This integrated goal approach that would sit above and direct each of the MEAs would not require any amendment to the MEAs or changes in their structure. It is entirely consistent with secondary rules of international law which include the principles of systemic integration and mutual supportiveness, the positive duty to cooperate and coordinate among treaty bodies or other institutional arrangements, and the duty not to transfer or transform harm or hazards [39].

Nature as the system that provides human well-being

A destabilized planet is a problem for humanity, more than for nature which will carry on in some form. We are completely dependent on a healthy planet for our survival, which in turn depends on a functioning living biosphere. This scale of concern is best addressed with a wide systems perspective.

The interactions between nature and abiotic processes create a stable and liveable planetary system for all life. The overarching life support system for humanity is a result of interacting biophysical processes at global and local scales (Figure 2). Global processes, such as climate and hydrology, impact biodiversity, which determines the ecological functions of ecosystems and biomes. External forcing (from global processes) combined with internal loss of biodiversity, impacts the buffering capacity and resilience of ecosystems, which in turn determines feedbacks on Earth system functioning. Humanity has become such a force on Earth that our activities are causing destabilizing feedbacks to that system that imperil both our present and our future.

The impacts on humans from destabilizing the Earth system can be illustrated by considering nature's contributions to people (NCP), the third order driver in Figure 2. NCP includes both the concept of ecosystem services and relational worldviews of nature and is the conceptual framework for the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES') work [42]. NCP summarizes all the contributions, both positive and sometimes negative, of nature (i.e. diversity of organisms, ecosystems, and their associated ecological and evolutionary processes, the second order driver in Figure 2) to the quality of life for people. Beneficial contributions from nature include such things as food provision, water purification, flood control, and artistic inspiration, whereas detrimental contributions include disease transmission or processes that damage people or their assets.

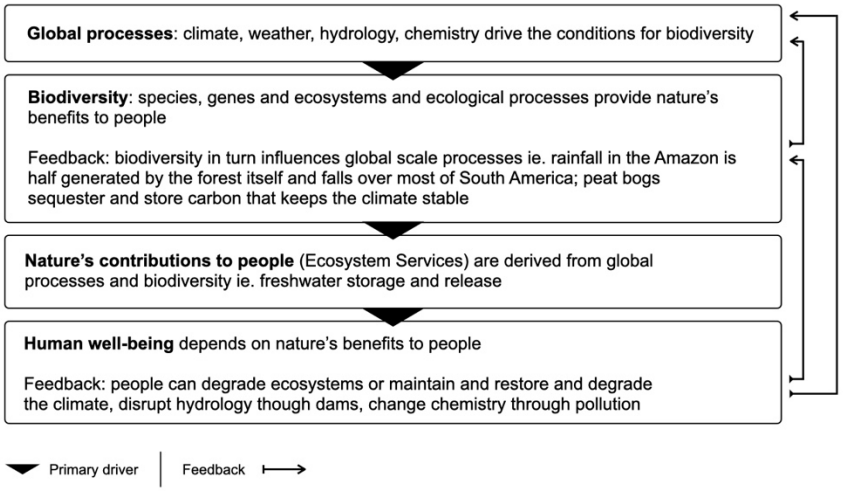

Figure 2. Hierarchical ontology of global scale processes, biodiversity, nature's contributions to people and human well-being.

IPBES identified 18 categories of NCP, organized in three partially overlapping groups: regulating, material, and nonmaterial NCP. Regulating NCP includes habitat creation and

maintenance, pollination and dispersal of seeds and propagules, air quality, climate, ocean acidification, freshwater quality and timing, freshwater and coastal water quality, soils and sediments formation, hazards and extreme event prevention, regulation of detrimental organisms and biological processes. Material NCP includes energy, food and feed, materials, companionship and labour, and medicinal, genetic and biochemical resources. Non-material NCP includes learning and inspiration, physical and psychological experiences, and supporting identities [43].

The Regulating NCPs are first and second order drivers being disrupted by human feedbacks with the consequence of decreasing positive contributions and increasing negative ones. To conserve and restore biodiversity and thus NCP, a comprehensive global goal that specifically focuses on systems level outcomes at the level of primary drivers - the first and second orders -is a necessary addition to the MEAs.

This is because the continuous inter-play between global biophysical and geophysical processes and local biodiversity, all now extensively impacted by humans, together determine outcomes for the state of the planet. An example is the Amazon rainforest which generates a significant part of its own rainfall. Already 20-25% deforested and under pressure from global warming and other impacts, it may cross a tipping point where the system irreversibly transitions from rainforest to savannah [13]. A recent assessment concludes that human-caused changes have already resulted in 40% of the Amazon rainforest having reached a bifurcation point where it could exist either as rainforest or savannah [44]. The risk worsens if deforestation continues and restoration is not undertaken. A flip to savannah would have a large effect on rainfall patterns affecting the survival of the remaining forest, agriculture in much of South America, and the global climate.

Freshwater systems provide another obvious example of the need for an integrated perspective across the MEAs at the level of first order process drivers as well as patterns of biodiversity (the second order). Freshwater fish and marine species that congregate in estuaries are essential to human food security and have their own inherent value but are in serious decline worldwide. Overfishing is not the only cause. Their decline is primarily due to the loss of hydrological process caused by upstream hydro-electric dams [12] including reduced sediment transport which eventually destroys deltaic environments such as carbon-rich mangroves that also provide important coastal stability and protection [45]. Estuaries are also harmed by chemical inputs from agriculture that increases food productivity on land but the excess runs-off into rivers and creates “dead zones” in the ocean [46]. When we overlook freshwater fluvial processes, we overlook freshwater species, connectivity for both freshwater and terrestrial species [47], and the essential role fluvial process plays in the life cycle of a wide-range of terrestrial species [48].

Similar to freshwater systems, the recent interest in Nature-Based Solutions for the climate could provide an opportunity for the integration of multiple benefits across MEAs or could have a negative effect if the focus is on one set of narrow benefits only [27].

We will not be able to achieve the CBD’s 2050 LNH vision which includes a healthy planet, Rio Principle 7’s objective of a healthy earth ecosystem, the UNFCCC’s goal of carbon neutrality by 2050, or the SDGs without ensuring the health of the system and the processes that drive it are integrated with other global goals for the climate and human development.

Human health depends on nature's health

For some time, it has been apparent to the public health community that human health and the health of natural systems are integrally connected. This awareness gave rise to the *One Health* approach which is about designing and implementing programmes, policies, legislation and research in which multiple sectors communicate and work together to achieve better public health outcomes for people, domestic animals and wild species with a particular focus on zoonotic diseases [49].

The Covid-19 pandemic of 2020 has highlighted the vulnerability of humanity to diseases of zoonotic origin. Land-use change has caused the emergence of many such diseases since 1960 and there is an accelerating risk of further zoonotic disease emergence due to both the increasing stress humanity is placing on ecosystems and our patterns of production and consumption, including wildlife exploitation [15].

The World Health Organization has underlined that human health drives the economy; its number one recommendation for building back better from the pandemic is to protect nature [49]. A nature-positive global goal is inherently an essential goal for human health which in turn underlies economic health, and must include all necessary measures to prevent another pandemic of zoonotic origin.

Economic health is derived from nature's health (natural capital)

The World Economic Forum's 2020 Global Risks Report ranks biodiversity loss and ecosystem collapse as one of the top five threats humanity will face in the next ten years. Some $44 trillion of economic value generation [50] - over half the world's total GDP- is moderately or highly dependent on nature and its services. However, addressing biodiversity loss through actions that are nature- positive is an opportunity for the global economy estimated to generate up to US$10.1 trillion in annual business value and create 395 million jobs by 2030 [50].

A global goal for nature that results in a healthy Earth ecosystem is also integral to the health of the global economy. The economy is entirely based on a foundation of natural capital, meaning the stock of renewable and non-renewable resources (e.g. plants, animals, air, water, soils, minerals) that combine to yield a flow of benefits to people [51] and healthy people to run the economy. Global scale processes and biodiversity create the natural capital stocks that yield nature's contributions to people (NCP) (Figures 2 and 3).

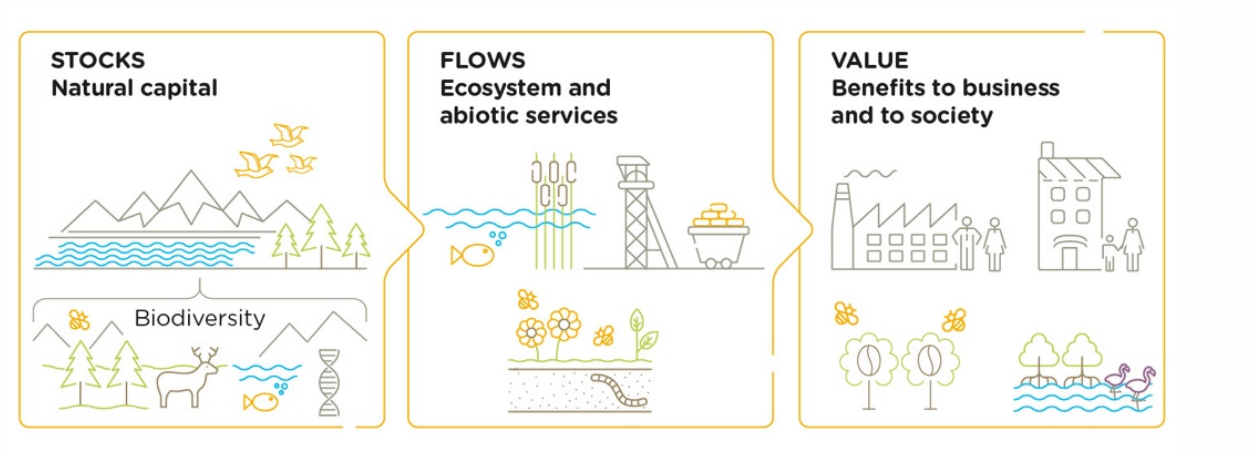

Figure 3. Global scale processes and biodiversity create the natural capital stocks that yield nature's contributions to people.

Conceptual shift to a nature-positive hierarchy

There is conceptual shift inherent in the nature-positive global goal. Nature (the environment) is not an externality but rather is the context for all life, including humans. Human society is the context for all human activities. The economy is just one activity of human society. This is a hierarchy, not a set of competing interests (Figure 4) [52,53].

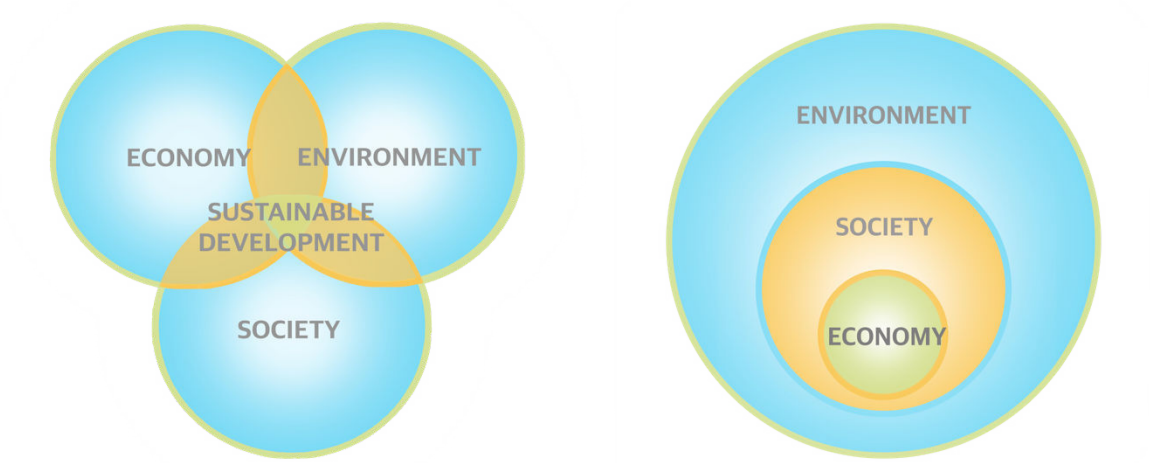

Figure 4. The difference between the hierarchical view of nature- positive (right) and the competing interest conception of sustainable development (left). Graphic by E. Asselin

The nature-positive goal is not to find the "sweet spot" where competing interests coincide but rather to continually improve the context for all life.

Leading western economies are increasingly recognizing and embracing this nature-as-context approach. The UK Government's cross-government Dasgupta interim report on the Economics of Biodiversity said: "Arguably, the view of the economy as external to the environment may

have been comparatively harmless so long as the biosphere was more than able to supply the demands humanity made of it. That simply is not the case any longer and has not been for many decades" [54]. It also noted that recognizing the global economy as embedded in the biosphere is a directional shift from most contemporary accounts of economic development and growth. The European Union's 2020 Green Deal which is intended to make the European economy sustainable is based on the recognition that climate change and environmental degradation are "existential threats" to Europe and the world [55].

A nature-positive world is one in which the dominant importance of nature to humanity is recognized and human actions are governed accordingly. China's embrace of eco-civilization as a national objective is based on such a conceptual shift [56,57]. Recognizing that humans are part of the broader community of life and inextricably bound in kinship with it is also consistent with traditional peoples' views of the relationship between humanity and nature [42].

Nature-positive and the SDGs

The SDGs can be realized in manner consistent with this conceptual shift to a nature-positive hierarchy. Folke et al [53] conceived of it as a "wedding cake" of SDGs (Figure 4):

Figure 5. A nature-positive goal recognizes that the Sustainable Development Goals can only be realized if the Biosphere related goals are met. The Biosphere (nature) related goals are not competing interests to be balanced with societal and economic goals, they are the foundation of Society, and Society is the foundation for all Economic activity. Folke, C., R. Biggs, A. V. Norström, B. Reyers, and J. Rockström.

2016. Social-ecological resilience and biosphere-based sustainability science. Ecology and Society 21(3):41.http://dx.doi.org/10.5751/ES-08748-210341 With permission.

How much nature do we need to secure the stability of the Earth system?

To maximise our chances of securing the stability of the Earth system we need to secure all remaining intact natural ecosystems, preserve natural processes (both living and non-living) that remain, and restore as much as we can [11]. The Earth Commission, in a scientific assessment in support of the next CBD strategic plan, concluded that we now need to ensure no more loss of critical ecosystems for the functioning of the greater Earth system [10].

In terms of spatial conservation, there is widespread scientific support for the idea of protecting and conserving at least half the world to meet biodiversity [58–63] and ecosystem services objectives [61,64] or combined biodiversity and carbon objectives [65]. When we take a systems perspective that also considers non-linear changes, irreversible losses, and self-amplifying feedbacks (some of which are underway already) it is clear that we must not only have "no net loss of nature" starting now but also actively and accelerate nature restoration activities, in areas ranging from the Amazon to ensure 80% forest cover to secure rainfall patterns [13] to the most heavily cultivated areas, which should be restored to ensure at least 20% natural cover to secure a wide range of NCP's including crop pollination [9]. In short, we must address nature loss everywhere, with spatially oriented strategies from the most intact systems remining to the most heavily transformed [66,67].

While spatially-oriented strategies are essential, they are not alone sufficient [11,68]. Human production and consumption behaviours are major drivers of nature-loss. We must also act on suites of strategies that address all dimensions of the biodiversity crisis. The nature-positive goal embraces the goals of the high ambition scenario called for by Diaz et al [10]. But it also includes a higher scale that considers what is necessary for the health of the Earth ecosystem and the functioning of the planet as a whole.

The Global Goal for Nature can be practically achieved

We have the tools and information we need to achieve *Zero Net Loss of Nature from 2020, Net Positive by 2030, and Full Recovery by 2050*. Countries can use spatial planning to identify areas we need to protect and conserve - for species conservation and recovery, for climate mitigation, for water and food security, among others. These areas can be integrated into their national action plans such as National Biodiversity Strategic Action Plans under the CBD, and in Nationally Determined Contributions and Long-Term Low Emissions Development Scenarios under the Paris Agreement [67]. This same approach could be brought to country implementation plans for coastal and marine areas within their jurisdiction as well as the new High Seas Treaty which is currently under negotiation.

Priority areas that we need to conserve vary in terms of their current state; we know that the baseline condition of the terrestrial world as of 2020 can be sorted into landscapes that are more than half modified by humans, landscapes very lightly modified by humans (if at all), and areas

in between [66]. Strategies appropriate to each of those three conditions that meet human needs and which are nature-positive are known to us. They can be implemented in accordance with Rio Principle 7 in a way that respects and recognizes Indigenous People's key stewardship and their rights and responsibilities and that includes Key Biodiversity Areas. A similar framework is under development for the ocean. This approach can practically guide necessary policies such as protecting and conserving at least 30% of land and sea in interconnected way by 2030 [69]. Scenario modelling that takes into account human well-being and climate considerations has demonstrated the feasibility of such an integrated approach [70,71].

Nature-positive and the business community

Action from non-government stakeholders, especially the private sector, is also needed to achieve an equitable, nature-positive, and carbon-neutral world. Supply chains and business practises must be modified to reverse the decline of nature which both averts a massive business risk and creates business opportunity. Some leading businesses are starting to identify how they can become "nature-positive". But business requires the long-term political certainty and clear ambition level and direction to scale and speed up action that the global goal for nature would provide [72].

Business also needs an enabling environment with subsidies directed away from destructive activities that undermine the goal and towards the kinds of economic activities that support it [73]. A natural capital approach [51] and the mitigation hierarchy [7] provide practical methods for business to implement the nature-positive goal.

Political will for nature-positive future

There are signs that creating an equitable, nature-positive, and carbon-neutral world is politically possible. Before the UN Biodiversity Summit in September 2020, there were calls from more than 600 businesses, 50 faith organizations, 22 humanitarian & development organizations and 15 conservation organizations to reverse nature loss within a decade. The heads of over eighty-two countries subsequently signed the Leader's Pledge for Biodiversity [74]. There is also significant political support for protecting at least 30% of the world's land and ocean by 2030 as evidenced by the over fifty countries who support the High Ambition Coalition which was formally launched at the One Planet Summit in January 2021 [75]. Leading businesses have formed coalitions that support the nature-positive goal as does the World Economic Forum. All of these players understand that meeting a nature-positive Global Goal for Nature is imperative to our survival and that, despite fears to the contrary, we can do this with a thriving economy [50].

Without a commitment to a nature-positive future we will not meet our climate or human development goals and will thus imperil our common future. Nor will we meet our vision for biodiversity of Living in Harmony with Nature. A global goal for nature that is nature-positive is a necessary complement to our climate neutrality goal. Meeting them both in an integrated way is a prerequisite for equitable sustainable development, a robust economic recovery, and most important of all, the health of the planet and its people.

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