The Rio Conventions, the Global Environment Facility and One Health: Pathways for advancing the health of the planet and all living beings

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INTRODUCTION | The Rio Conventions: towards a holistic and integrated approach to biodiversity, climate change and land degradation

The Earth Summit: a new blueprint for global action on environmental and development issues

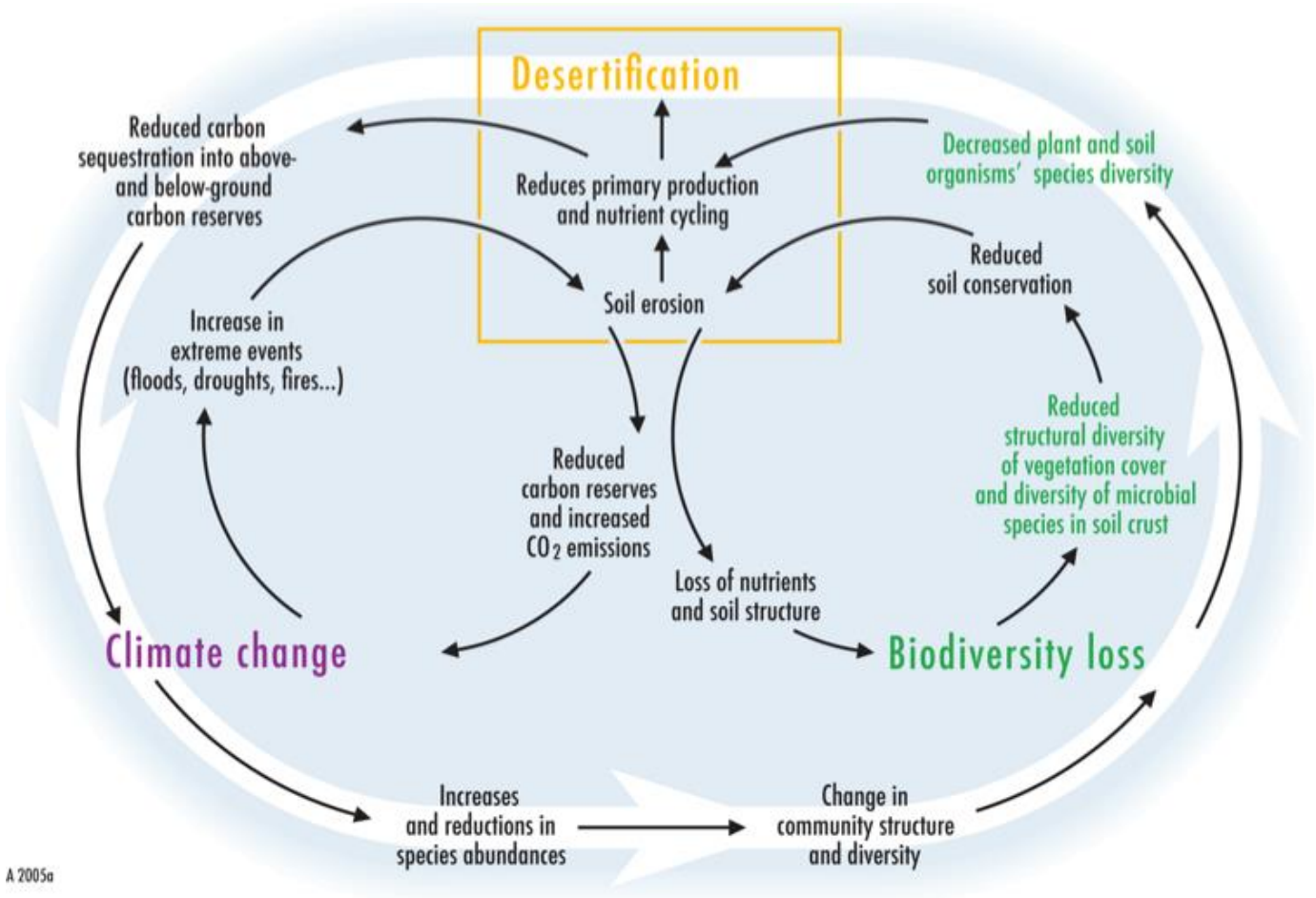
The United Nations Conference on Environment and Development (UNCED), also known as the 'Earth Summit', was held in Rio de Janeiro, Brazil, from 3-14 June 1992, with a view to producing a broad agenda and a new blueprint for international action on environmental and development issues that would help to guide international cooperation and development policy in the 21st century.

The Convention on Biological Diversity (CBD), the United Nations Framework Convention on Climate Change (UNFCCC), the United Nations Convention to Combat Desertification (UNCCD) as well as the Global Environment Facility (GEF) resulted from the 'Earth Summit'. The Global Environment Facility (GEF) was created as a financial mechanism to support the implementation of major international environmental conventions including on biodiversity, climate change, chemicals, and desertification. The Rio Conventions and the GEF are engaged in collaborative actions to solve these challenges of biodiversity loss, climate change and land degradation at all levels.

Operationalizing synergies among the Rio Conventions: a common agenda

It is widely recognized that climate change, land degradation, and biodiversity are interconnected (Figure 1) and that it is crucial to work collectively and coherently to restore the land that sustains us, halt the loss of biodiversity, and mitigate and adapt to climate change.

Figure 1 - Linkages and feedback loops among desertification, global climate change and biodiversity loss.

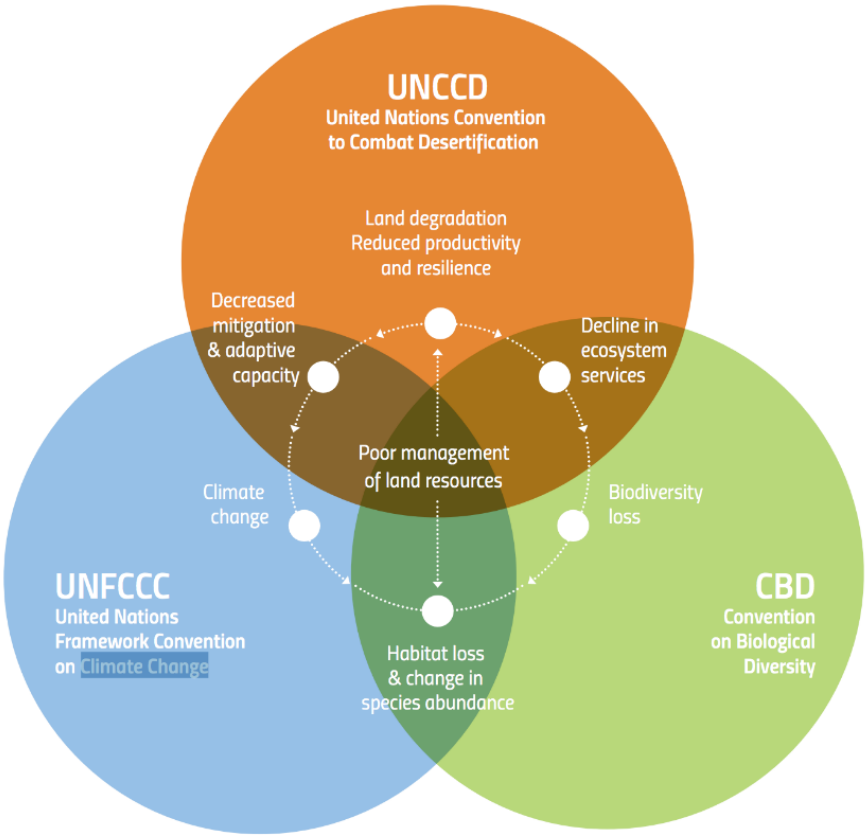


Notes: Green text - major components of biodiversity involved in the linkages. **Bold text** - major services impacted by biodiversity losses.
Source: Millennium Ecosystem Assessment (2005)

The secretariats of the United Nations Framework Convention on Climate Change, the Convention on Biological Diversity and the United Nations Convention to Combat Desertification are engaged in collaborative actions to solve these challenges at all levels, including through a Joint Liaison Group (JLG), established in August 2001 as an informal forum for exchanging information, exploring opportunities for synergistic activities and increasing coordination.

In parallel and since its inception, the GEF has provided more than $21.5 billion in grants and mobilized $117 billion to support environmental action in developing countries and to finance the activities of multilateral environmental agreements. Partnership is at the heart of the GEF's approach and impact, and alignment on efforts to address biodiversity, climate change, land degradation, mercury, persistent organic pollutants, international waters, and other issues are essential to ensure concerted, effective action on these overlapping environmental priorities in 2021 and beyond. Negotiations are underway over the size and scope for the trust fund in its next four-year funding period which starts in July 2022.

Figure 2 - Commonalities and connections between the approaches of the Rio Conventions



Source: https://climatechange-theneweconomy.com/governments-tackle-interlinked-challenges-land-loss-climate-change/

From Rio to Glasgow: a renewed opportunity to foster collaboration and set the stage for a new political and investment paradigm that leaves no one behind

Through collaborative and coordinated approaches, the Conventions are well positioned to lead greater progress on all fronts, by building on synergies. For example:

- Addressing climate change can impact rates of land degradation and biodiversity loss, for which climate is an accelerator;
- Introducing renewable energy technologies for the reduction of greenhouse gas emissions can also reduce pressure on land and forest biodiversity by providing an alternative to unsustainable biomass fuels;
- Combating deforestation reduces net carbon dioxide emissions, land degradation, and minimizes biodiversity loss.

With the world at a critical juncture, conserving and restoring nature can help to drive a green, equitable and healthy recovery. The COVID-19 pandemic has reignited the need to address interlinked challenges in an integrated manner, not through singular or linear approaches. It is difficult to consider long-term economic growth without considering social, environmental and human health dimensions.

The Conferences of the Parties of the three Rio Conventions and the GEF replenishment process provide an opportunity to raise the ambition of actions needed to meet the objectives of the Paris Agreement, to restore and maintain healthy landscapes, to establish a post-2020 global biodiversity framework that will halt the loss of biodiversity, and to agree an 8th replenishment of the GEF that will strongly support these objectives.

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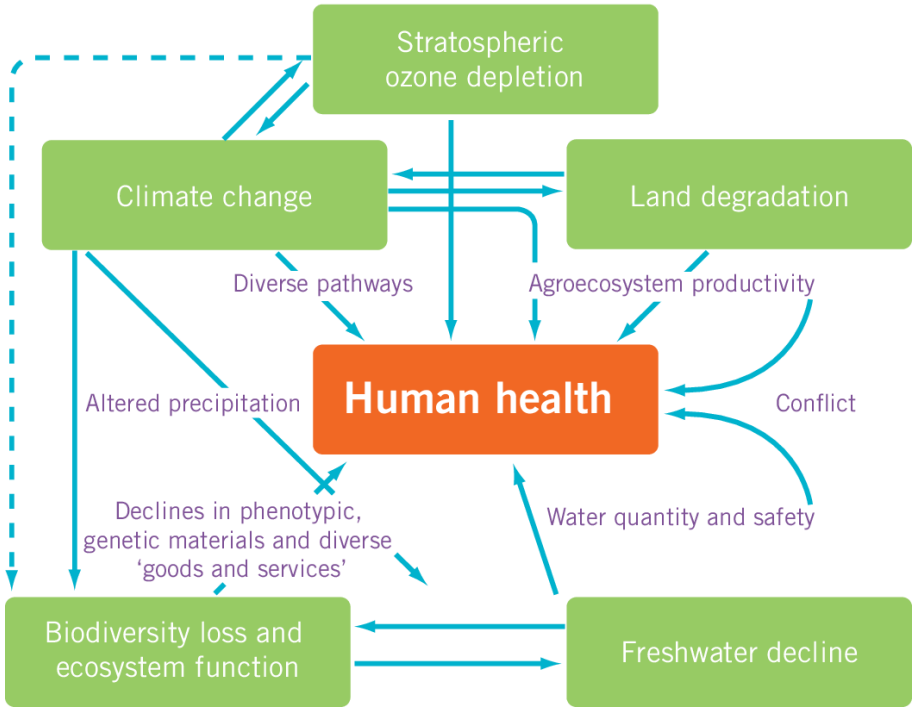
INTERLINKAGES | Articulating a narrative for biodiversity, climate change, and land degradation that advances health and well-being for all

The health of the planet impacts the health of people: focus on the environmental determinants of health

The COVID-19 pandemic massively disrupted health systems and the global economy and reminded us of the intricate relationship between people and the planet. Pressures on the natural environment, such as climate change, resource depletion, pollution and biodiversity loss negatively affect human health (see Figure 3).

Figure 3 - Mapping linkages among major types of environmental challenges and health



Source : https://www.cbd.int/doc/health/health-rioconventions-en.pdf

To ensure a just, healthier and greener recovery, we imperatively need to consider human health in its broader ecosystem and recognize the intricate linkages between the health of people and the health of the planet, as well as the environmental determinants of health. Addressing the environmental determinants of health and promoting healthier environments could prevent almost one quarter of the global burden of disease - according to WHO estimates (2016), 24% of all global deaths are linked to the environment.

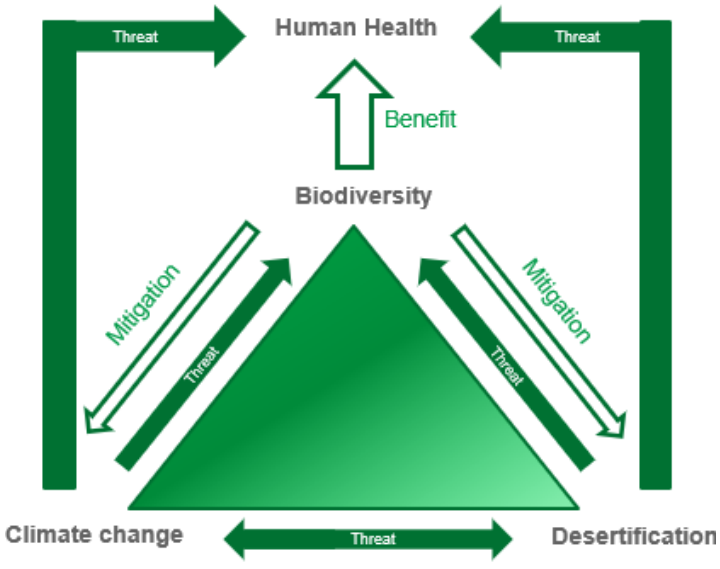
Biodiversity, climate change, land degradation and health: a nexus approach

Evidence suggests that links between biodiversity, climate change, land degradation and human health are multiple, interconnected, multi-scale and interdependent. The "One Health" approach, among other holistic approaches, accounts for the interconnections between people, animals, plants and their shared environment – and recognizes that the long-term resilience and well-being of humanity depends on the health and integrity of nature. The One Health agenda covers a wide range of issues, including zoonotic and vector-borne diseases, antimicrobial resistance, food safety and security, environmental contamination, and other threats to people and nature. It is also useful to apprehend and contribute to mental health, injury and occupational health, and noncommunicable diseases.

One Health embraces polycentric governance to help coordinate preparedness and response plans that bridge multiple sectors. Evidence-based policies, global collaboration, and coordinated actions based on multi-dimensional nexus planning can inform coherent strategies for restoring health. The rising public health costs associated with disease and disaster can help seed the transition toward a restorative culture. Landscapes with high ecological integrity - structural intactness and connectivity, biodiversity and species abundance, and generative interrelatedness - provide higher levels of biosecurity. Among other nature-based solutions and ecosystem-based approaches, land restoration is a clearly identified pathway for preventing future pandemics and mitigating other disasters by virtue of repairing damaged ecosystems.

While recognizing the complexity of such interlinkages and acknowledging that we do not fully understand their full breadth, a few causal relationships can be established (Figure 4).

Figure 4 – Articulating the nexus between biodiversity, climate change, land degradation and health



Notes: White arrows indicate a positive impact; dark arrows indicate a negative impact. The thickness of the lines corresponds to the strength of the impact.

Source: Adapted from Marselle M.R., Stadler J et al, Biodiversity and Health in the Face of Climate Change, Springer International Publishing, 2019, https://doi.org/10.1007/978-3-030-02318-8

- Biodiversity is a key environmental determinant of human health. Biodiversity encompasses all the complex interactions between living organisms that underpin the delivery of ecosystem services which support all life on Earth: the air we breathe, the water we drink, the food we eat. The decline of biodiversity at an unprecedented rate and scale undermines the web of life and compromises its future sustainability.

- Conserving, sustainably managing, and restoring biodiversity and ecosystems can support efforts to reduce the negative effects of land degradation as well as climate change, through carbon sequestration and carbon storage in vegetation or soils and adaptation measures such as increasing resilience in our food systems and reducing disaster risks. In addition, vegetation and its diversity of physical structure are instrumental in soil conservation and in the regulation of rainfall infiltration, surface runoff and local climate.

- Climatic conditions affect human health and well-being both directly and indirectly. Direct impacts on health are due to changes in exposure to weather extremes (heatwaves, winter cold), increases in other extreme weather events (floods, cyclones, storm-surges, droughts), and increased production of certain air pollutants and aeroallergens. Climate change also affects the transmission of many infectious diseases (especially water, food and vector-borne diseases) and regional food productivity.

- Climate change is already forcing biodiversity to adapt either through shifting habitat, changing life cycles, or the development of new physical traits, and exacerbates several desertification processes. Climate variability and anthropogenic climate change, particularly through increases in both land surface air temperature and evapotranspiration, and decreases in precipitation, are likely to have played a role, in interaction with human activities, in causing desertification in some dryland areas.

- Desertification and land degradation also impact human health and well-being directly (dust storms increasing due to land-use and land-cover changes, and dust storm transport particulate matter that can have damaging effects on human health, heat waves) and indirectly (impact on water scarcity and use, impact on soil health which can affect crops production).

- Desertification and land degradation are closely associated with biodiversity loss and contributes to global climate change through loss of carbon sequestration capacity. Unimpeded it may release a major fraction of this carbon to the global atmosphere, with significant feedback consequences to the global climate system.

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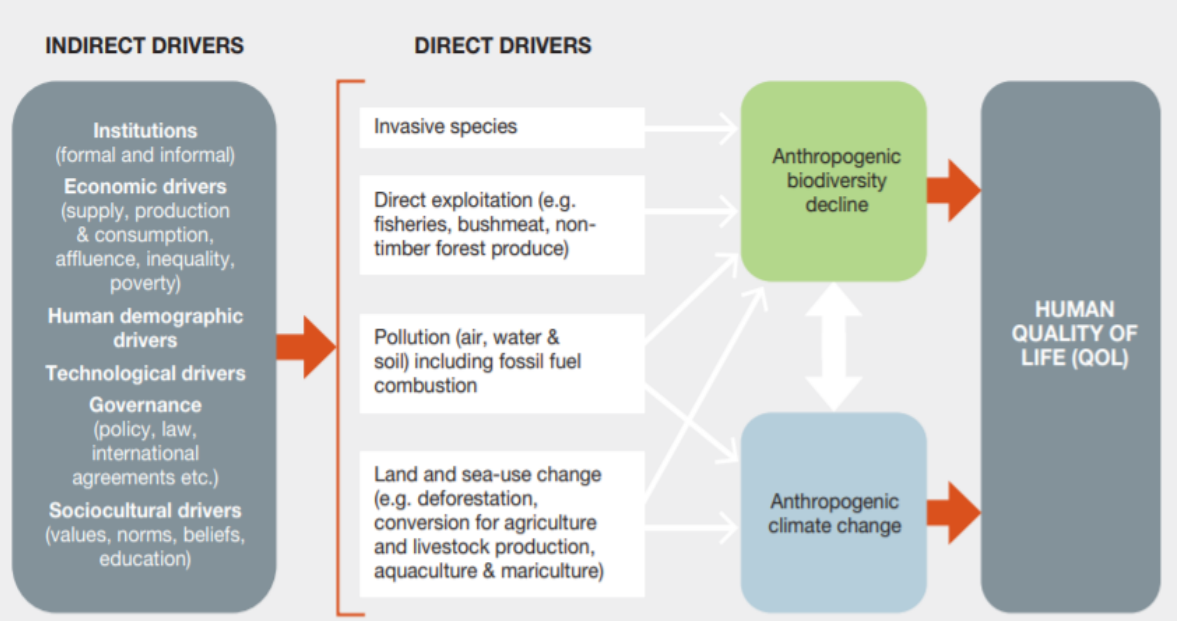
Looking at the common drivers of biodiversity loss, climate change, land degradation and negative health outcomes

Biodiversity loss, climate change, land degradation and negative health outcomes share root causes, which are linked to unsustainable production and consumption (e.g., in agri-food systems and energy production), unsustainable land management practices and increased pressure on land from population and income growth. The IPCC-IPBES report on Biodiversity and Climate Change have identified common indirect and direct drivers to climate change and biodiversity loss, which impact the quality of life (Figure 5).

Figure 5 - Indirect and direct drivers of biodiversity loss and climate change due to human activities



Source: IPBES-IPCC co-sponsored workshop report on biodiversity and climate change, https://ipbes.net/events/launch-ipbes-ipcc-co-sponsored-workshop-report-biodiversity-and-climate-change

As highlighted in the IPBES Workshop Report on Biodiversity and Pandemics, the underlying causes of pandemics are the same global environmental changes that drive biodiversity loss, land degradation, and climate change: land-use change, agricultural expansion and intensification, and wildlife trade and consumption.

Identifying common drivers and synergies can help to build a common and stronger narrative for joint approaches among the Rio Conventions that can simultaneously aim at reducing the pressure on natural environments that threatens human health and well-being. Conservation is no longer enough – restoration is now an imperative. It is the abundance and complexity found in healthy ecosystems that make human existence possible.

At the national level, the national action programmes (NAPs), national biodiversity strategies and action plans (NBSAPs) and national adaptation programmes of action (NAPAs) are key implementation tools for climate change, biodiversity and land degradation. Action at the national level represents an important opportunity to establish synergy, coherent policy instruments and cost-effective ways for implementation. Most of these plans have a common overall goal (promoting sustainable development) and invoke similar principles for formulating and implementing the action plans: participatory processes, overall coherence, effectiveness and accountability.

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ONE HEALTH | Articulating an environmentally-inclusive One Health approach in line with the mandate of the Rio Conventions and the GEF

An environmentally-inclusive One Health transition for the benefit of the planet and all living beings

One Health, among other holistic approaches such as EcoHealth and Planetary Health, recognizes that human health is intimately connected to the health of the planet, all living beings, ecosystems, our shared environment, and relevant systemic drivers. While there is no universal definition, One Health is defined by the World Health Organization (WHO) as "an approach to designing and implementing programmes, policies, legislation and research in which multiple sectors communicate and work together to achieve better public health outcomes" and by the UN Environment Programme (UNEP) as "a cross-cutting and systemic approach to health based on the fact that human health and animal health are interdependent and linked to the health of the ecosystems in which they co-exist".

As biodiversity conservation, ecosystem dynamics, and socioeconomic drivers of human activities impacting biodiversity and ecosystems, have often received less attention in One Health approaches than human-animal interconnections, it is critical to further integrate the full range of environmental (especially with regards to biodiversity, climate change and land degradation) and health linkages and relevant systemic drivers through a transdisciplinary approach.

An environmentally-inclusive One Health transition can fully support human and ecosystem health by addressing the relevant systemic drivers of biodiversity and habitat loss, climate change, land degradation, disease risk and negative health outcomes. Achieving such transition - in a manner that is economically sustainable for populations in developing countries - will foster co-benefits for the environment as well as the health of all living beings. A One Health transition can play a critical and catalytic role in reducing the loss and degradation of biodiversity, restoring healthy ecosystems, enhancing the health, well-being and livelihood of all living beings, including humans, animals and plants, and preventing future pandemics.

A One Health agenda, building on the commitment of the Rio Conventions and the GEF to protect and restore the planet for the benefit of people

Building on their respective areas of expertise and mandate, the Rio Conventions and the GEF are engaged at different levels and through different lenses on the One Health agenda. The four organizations have also reflected on lessons learnt from the COVID-19 pandemic and pathways to ensure a green, health and just recovery by leveraging linkages with health and One Health approaches.

Convention on Biological Diversity - The Convention on Biological Diversity has been working over the last decade on linkages between biodiversity and health and the recognition of the value of One Health approaches (COP decisions V/6, XIII/6, 14/4). The CBD Secretariat and the World Health Organization collaborated on activities further investigating linkages between biodiversity and health under a joint work programme with the WHO to support the implementation of the Strategic Plan for Biodiversity 2011–2020. The 24thsession of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), held virtually in May-June 2021, considered agenda item 9 on biodiversity and health, including a draft Global Action Plan for Biodiversity and Health which aims to support Parties in implementing a biodiversity-inclusive One Health approach and a sustainable recovery from COVID-19. This Global Action Plan for Biodiversity and Health is expected to be adopted by CBD Parties at the 15th meeting of the Conference of the Parties. In addition, and recognizing the complex interlinkages between biodiversity and health, One Health, and the response to COVID-19 and pandemics, a special virtual session of SBSTTA and the Subsidiary Body on Implementation (SBI) was convened in December 2020. The special session highlighted the importance of a biodiversity-inclusive One Health approach that would address the common drivers of biodiversity loss, climate change, and increased pandemic risk, and discussed the integration of biodiversity considerations into COVID-19 stimulus and recovery measures.

In addition, the post-2020 global biodiversity framework whose first draft comprises 21 action targets to be achieved by 2030, will be a key instrument to galvanize urgent and transformative action and help us to achieve a vision of living in harmony with nature, which will have a positive impact for our health and well-being. The CBD is working together with governments and all of society, including indigenous peoples and local communities, civil society and businesses, the financial sector, women, youth, as well as partners including the UN Environment Programme and the Rio Conventions, to catalyze momentum for addressing pressing environmental challenges in an integrated and systemic manner, in view of an ambitious post-2020 framework that can support health and well-being for all.

United Nations Conventions to Combat Desertification - The UNCCD released a publication on supporting the global response to the COVID-19 pandemic, suggesting land-based solutions for healthy people and a healthy planet.
The report highlights that protecting and restoring natural ecosystems is crucial for avoiding the well-understood risks of the emergence of novel infectious diseases. Moreover, land is

the key to building back better: avoiding future degradation and reversing harm from the past can accelerate the progress on all 17 Sustainable Development Goals in the face of both the COVID-19 pandemic and climate change. In many parts of the world, land is the most important asset for people, and land-based solutions that foster health and biodiversity offer innovative ways to tackle the pandemic. Land can play a key role in the prevention, preparedness, response, and recovery phases of the COVID-19 crisis.

For example, the UNCCD recognizes that improvements to intensive livestock production can reduce potent methane emissions and help curb the emergence and spread of disease and other health risks. Industrial animal agriculture, including wildlife farms, and the processing of meat, dairy and other by-products can be a conduit for the transmission of zoonotic diseases, such as the recent swine and avian flu outbreaks. Factory farming typically involves administering growth hormones and antibiotics which contributes to the prevalence of antimicrobial resistance and other human health risks. Crowded, unsanitary conditions and a narrow genetic base make it easy for infection and disease to spread rapidly, even with the strictest biosecurity measures. These and other response areas offer pathways in which UNCCD Parties can address health and its determinants and make investments for health through evidence-informed policies across sectors.

United Nations Framework Convention on Climate Change - Health is a key thematic area of the UNFCCC Nairobi work programme, as mandated by decision 17/CP.19; SBSTA 44; and SBSTA 48. In 2017, UNFCCC released a report on Human health and adaptation: understanding climate impacts on health and opportunities for action, which elaborates on challenges and opportunities for collaborative climate action, including under the Nairobi work programme on impacts, vulnerability and adaptation to climate change.
In addition, UNFCCC and the World Health Organization collaborate on the development of guidelines for assessing the health impacts of climate change and guidance on adaptation measures for human health. UNFCCC and the WHO also run a special initiative on Climate Change and Health in Small Island Developing States (SIDS), which was launched at the 24th UNFCCC Conference of the Parties (COP24) in November 2017 and aims to have all health systems in SIDS to be resilient to climate change by 2030.

Global Environment Facility - Through its portfolio, the GEF has played an active role in promoting synergies between environment and health, and especially on protecting human health and the environment from toxic chemicals and hazardous wastes. A white paper on a GEF COVID-19 response strategy was published with a section on Human health, One Health, and One Conservation which explores the incorporation of a One Health approach in investments in selected areas.

A COVID-19 task force was also created to assess the impacts and opportunities created by the pandemic on the work of the GEF. It highlighted the GEF's central role in ensuring a

healthy planet that can help prevent future pandemics and other disruptions expected from the current environmental degradation.

The GEF-8 Strategic Positioning Framework will also be an opportunity to further support the vision of promoting a green, blue and resilient recovery, and to creating pathways to a more equitable, nature-positive, and carbon-neutral world. The GEF's *Healthy Planet, Healthy People* framework explicitly recognizes the dependency of human health and well-being on a healthy environment.

Building on the respective mandates and strategies of the Rio Conventions, there is a strong opportunity for highlighting the benefits of addressing climate change, biodiversity loss and land degradation in an integrated manner – as a prerequisite to the health, well-being and survival of all living beings, including people, animal, and plants.

As we look for greater synergies between NAPAs, NAPs and NBSAPs, One Health approaches also provide an opportunity to consider the impact of national plans on the health of people, animals and the environment in a holistic manner. There is a strong potential for an inclusion of health dimensions and impact within national environment strategies, including NBSAPs, NAPs and NAPAs.

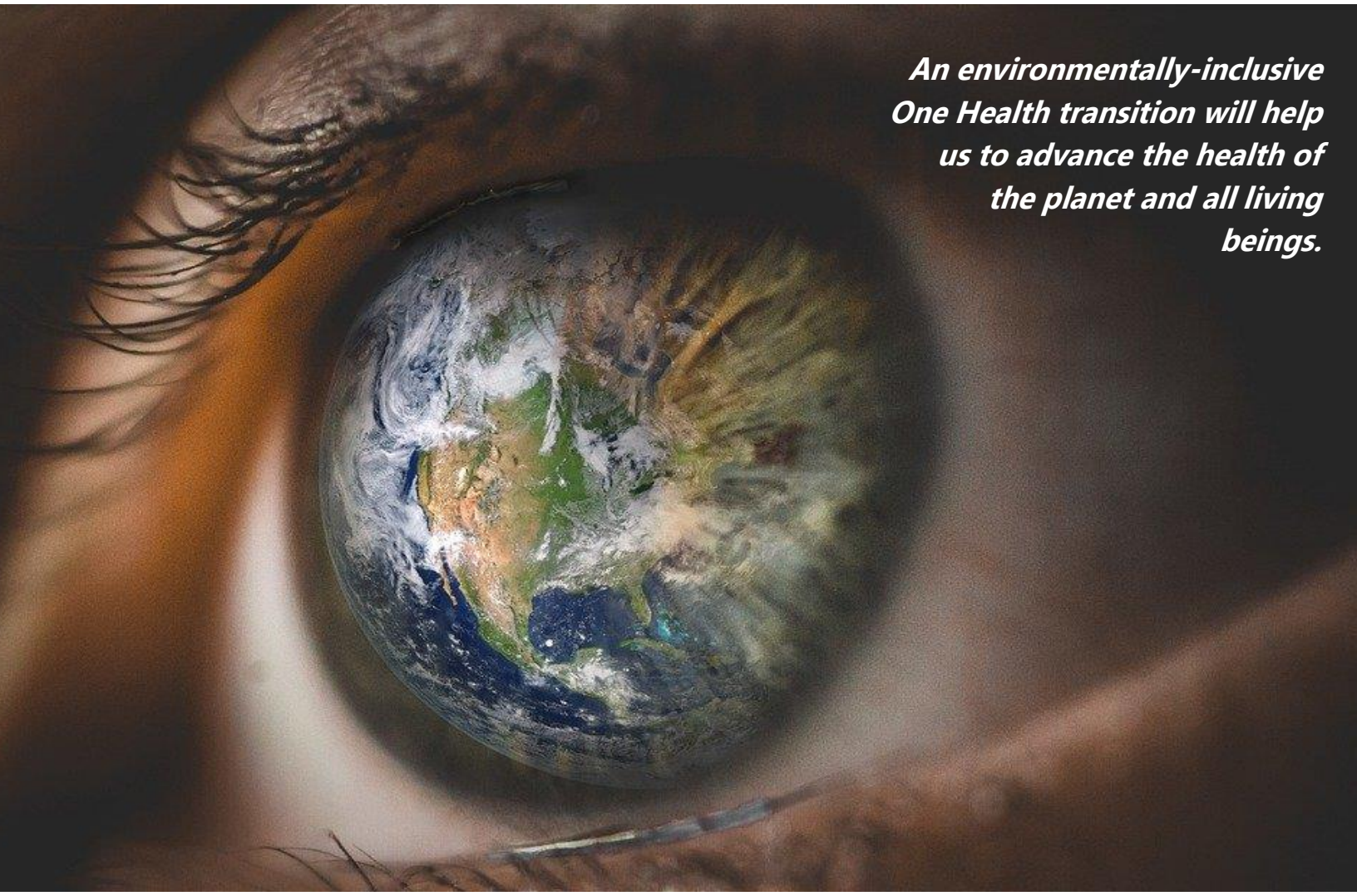
One Health approaches, through their multidisciplinary intrinsic nature encompassing the environmental determinants of health, could be further leveraged to foster greater synergies within Ministries and the interconnected agendas for biodiversity, climate change and land degradation, for the benefits of people and the planet.

The strengthening of existing linkages, including through a One Health approach that recognizes the intricate links between the health of all living beings and our shared environment, provides an avenue for advancing the common goals of the Rio Conventions alongside global health goals.

CONCLUSION | A clear alignment on shared objectives, common drivers, and the co-benefits of One Health among the Rio Conventions and the GEF

Building on their existing longstanding collaboration and commitment to urgently address climate change, biodiversity loss and land degradation and desertification, the Rio Conventions and the GEF have paved the way for a greater integration of health and environmental issues. In line with their areas of expertise and mandate, the Conventions and the GEF are contributing directly or indirectly to advance health and well-being in a holistic manner, through their activities in favour of land and ecosystem restoration, nature-based solutions, climate change mitigation and adaptation, sustainable land management practices, and reforestation, to name a few.

The COVID-19 pandemic massively disrupted the global economy and health systems, and the recovery agenda provides a unique opportunity to build forward better – a world that is healthier, inclusive and equitable, greener and sustainable. Advancing health and environmental agendas alongside through the uptake of an environmentally-inclusive One Health approach is a step forward in the systemic and catalytic changes that are needed to shift away from business-as-usual and accelerate the transition towards sustainable and green economies and a healthy planet for all, where no one is left behind and the health and well-being for all is ensured.



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