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Strengthening Actions for Nature to Achieve the Sustainable Development Goals in Asia and the Pacific

Discussion Document -- Not for quotation or citation. The purpose of this document is to facilitate discussions during the Fourth Forum of Ministers and Environment Authorities of Asia Pacific, 5-7 October 2021. Comments are welcome and should be sent to unep-apmf@un.org.

I. Background and Introduction

1. This background document has been prepared to support discussions at the 4th Session of the Forum of Ministers and Environment Authorities of Asia Pacific (4th AP Forum) to be held from 5 to 7 October 2021. The Forum is jointly organized by the Republic of Korea's Ministry of Environment and the United Nations Environment Programme (UNEP). The Forum serves as a platform for Member States and other stakeholders to contribute regional perspectives to the resumed session of the 5th UN Environment Assembly (UNEA-5.2) to be held on 28 February - 2 March 2022 in Nairobi, Kenya. The Forum will focus on UNEA-5's theme: 'Strengthening Actions for Nature to achieve the Sustainable Development Goals'. The 4th AP Forum is expected to discuss priorities and options for strengthening actions for nature in Asia and the Pacific region to achieve the Sustainable Development Goals (SDGs).

2. At the 1st session of the Fifth United Nations Environment Assembly (UNEA-5.1) held on-line on 22-23 February 2021 in Nairobi, under exceptional circumstances due to the COVID-19 pandemic, Member States acknowledged the urgency to continue efforts to protect our planet in this time of crisis. The Assembly expressed concerns on the continuing loss of biodiversity, especially through the degradation and fragmentation of ecosystems and habitats for wildlife, the threats to lives and livelihoods from climate change, as well as from pollution and poorly managed waste and chemicals, jeopardizing our environment and our overarching objective of sustainable development. The Assembly is committed to supporting a sustainable and inclusive recovery that protects the planet, stimulates sustainable consumption and production, revitalizes our economies and creates decent and sustainable jobs, and makes real progress in eradicating poverty, while enhancing our future resilience to similar crises.

3. At the seventy-seventh session of the Economic and Social Commission for Asia and the Pacific (ESCAP) held virtually on 26-29 April 2021, a resolution (no.77/1) was adopted on 'building back better from crises through regional cooperation in Asia and the Pacific'. This resolution highlights that the COVID-19 pandemic represents an urgent call to strengthen multilateral cooperation, and recognizes, in this regard, the value of an integrated One Health approach that fosters cooperation between human health, animal health and plant health, as well as environmental and other relevant sectors. The 77th Commission encouraged its Members to adopt a climate and environment-responsive approach to COVID-19 recovery efforts and policies in support of the goals and objectives of the 2030 Agenda for Sustainable Development, recognizing the need to immediately curb greenhouse gas (GHG) emissions and achieve sustainable consumption and production patterns in line with applicable State commitments to the Paris Agreement and aligned with the 2030 Agenda for Sustainable Development as they recover from the COVID-19 pandemic.

4. The cost of preventing further pandemics over the next decade by protecting wildlife and forests would equate to just 2% of the estimated financial damage caused by COVID-19, according to a 2020 analysis. Two new viruses a year crossed over from wildlife hosts into humans over the last century, with risks increasing as global destruction of nature accelerates. The future of the region will be defined by how it prepares for and responds to this and future pandemics and other crises, and how it builds back in recovery. Positive transformation can occur if prevention, response, and recovery are aligned with the 2030 Agenda for Sustainable Development. Therefore, the region is at an important junction to contribute to a sustainable, resilient, and inclusive post-COVID-19 world.

5. This crisis has brought into sharp focus the inadequacy of global responses to the climate and biodiversity emergencies. Despite committing to hold the increase in global temperature to 1.5 degrees Celsius, the world remains on a dangerous 3.2 degrees pathway. Overall, global 'green' recovery spending has been incommensurate with the scale of the planetary crises of climate change, nature loss, and pollution. Ongoing tracking and analysis by the Global Recovery Observatory finds that as of 17 May 2021, only about 20% of the USD 2.03 trillion in announced recovery spending could be expected to have positive impacts on GHG emissions, natural capital, and air pollution.¹

¹ Global Recovery Observatory, <https://greenfiscalpolicy.org/observatory/>

6. The UNEA-5.2 provides a unique opportunity for the multilateral community to share successes, best practices, and actions on nature that contribute to building back better and achieving the SDGs, in a balanced and integrated manner. It also is an opportunity to leverage other strategic 'nature focused' objectives, commitments and action plans that underpin the UN Decade of Action to deliver the Global Goals (2020-2030), the UN Decade on Ecosystem Restoration (2021-2030), the post-2020 Global Biodiversity Framework to be adopted at the fifteenth session of the Conference of the Parties to the Convention on Biological Diversity (CBD COP15), the Decade of Ocean Science for Sustainable Development (2021-2030), the Paris Agreement under the UN Framework Convention on Climate Change, and the UN Food Systems Summit to be held this year. The four action areas below are proposed for deliberations at UNEA-5.2, based on their central relevance to the environmental dimension of the SDGs:

- Nature for Poverty Eradication, Jobs and Economic Prosperity
- Nature for Human and Ecosystems Health
- Nature for Climate
- Nature for Sustainable Food Systems

II. Regional Status and Trends of Nature and Progress towards SDGs

7. The Asia and the Pacific² faces significant environmental challenges. The region is a major contributor to climate change, producing more than half of global GHG emissions.³ The region's population, about 60% of the world's total, reached around 4.6 billion in 2019 and is projected to rise to 5.2 billion by 2050.⁴ Rapid economic growth coupled with intensified industrialisation has led to a sharp increase in natural resource use, which is both unsustainable and inefficient, and results in increasing emissions, pollution, declining biodiversity and natural resource depletion. The region is experiencing the world's fastest urbanisation rates, estimated in 2018 at 2-3%,⁵ and projected to reach an urban population of 63% of the population total by 2050.⁶ Accelerating material consumption is being driven by the expanding middle class in Asia, as changing dietary patterns, mostly from cereals to meat, have led to 50% increase in meat production in Asia between 2000 and 2013, and a 22% increase in livestock populations in the same period.⁷ Countries in Asia and the Pacific were responsible for 50% of the global energy consumption in 2018, including 89% of coal consumption (coal being the largest contributor to energy-related emissions).⁸ As a result of unsustainable production and consumption levels, the region also faces a major pollution crisis. It is projected that by 2030, Asia and the Pacific could be generating 1.4 billion tons of municipal solid waste per year, most of which will end up in landfill, or leak into the environment.⁹

² The Asia and the Pacific region, according to UNEP geographical category, includes: Afghanistan, Australia, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Cook Islands, Fiji, India, Indonesia, Islamic Republic of Iran, Japan, Kiribati, Democratic People's Republic of Korea, Republic of Korea, Lao PDR, Malaysia, Maldives, Marshall Islands, Federated States of Micronesia, Mongolia, Myanmar, Nauru, Nepal, New Zealand, Niue, Pakistan, Palau, Papua New Guinea, Philippines, Samoa, Singapore, Solomon Islands, Sri Lanka, Thailand, Timor-Leste, Tonga, Tuvalu, Vanuatu, Viet Nam.

³ ESCAP (2017) *Economic and Social Survey of Asia and the Pacific 2017: Governance and Fiscal Management*, <https://www.unescap.org/publications/economic-and-social-survey-asia-and-pacific-2017>

⁴ ESCAP (2019) *2019 ESCAP population data sheet*, <https://www.unescap.org/sites/default/files/Population%20Data%20Sheet%202019.pdf>

⁵ IPBES (2018) *Regional Assessment Report on Biodiversity and Ecosystem Services for Asia and the Pacific*, <https://ipbes.net/assessment-reports/asia-pacific>

⁶ UNEP (2018) *GEO-6: Global Environment Outlook: Regional assessment for Asia and the Pacific – Factsheet*, http://wedocs.unep.org/bitstream/handle/20.500.11822/7548/asia_and_the_pacific_fact_sheet.pdf?sequence=3&isAllowed=y

⁷ UNEP (2016) *GEO-6 Regional Assessment for Asia and the Pacific*, <https://www.unep.org/resources/report/geo-6-global-environment-outlook-regional-assessment-asia-and-pacific>

⁸ ESCAP (2021) *Shaping a Sustainable Energy Future in Asia and the Pacific* <https://www.unescap.org/sites/default/d8files/knowledge-products/Regional-Trends-Report-2021-Shaping-a-Sustainable-Energy-Future-23-February.pdf>

⁹ UNEP (2017) *Asia Waste Management Outlook* http://wedocs.unep.org/bitstream/handle/20.500.11822/27289/Asia_WMO.pdf?sequence=1&isAllowed=y

8. COVID-19 has presented an unprecedented challenge to global health and economies, as well as to the environment. Experiences of COVID-19 across Asia and the Pacific have been varied; India has had one of the highest rates of infections globally, while multiple countries in the Pacific have experienced zero recorded cases.¹⁰ However, the economic, social and environmental costs have impacted countries across the region. The World Bank has estimated that the East Asia and Pacific region could see at least 11 million more people falling into poverty this year due to the impacts of the pandemic¹¹, 42-46% of whom are located in South Asia and 8.5-10% in East Asia and the Pacific.¹² Additionally, early studies suggest that poor air quality may be putting people further at risk,¹³ while evidence suggests that plastic pollution has been exacerbated by increased waste in response to the pandemic.

9. Ecosystem degradation and biodiversity loss are at a critical threshold in all Asia and the Pacific subregions.¹⁴ The region has seen significant loss of wilderness, natural forests and mangroves, and other natural ecosystems. The production of biofuels, a major energy source in the region (15% of total primary energy supply) is increasing the demand for arable land and worsening deforestation.¹⁵ From 1990 to 2015, South-East Asia showed a 12.9% reduction in forest cover, largely due to an increase in timber extraction, large-scale biofuel plantations and the expansion of intensive agriculture and shrimp farms. The marine ecosystems in Asia and the Pacific are also being depleted: there has been a decline in biodiversity from the loss of over 40% of coral reefs in the region, and mangrove forests have declined by 60%.¹⁶ Land use change and infrastructure development, the climate crisis, changing lifestyles and consumption patterns, and other key drivers have had significant impacts on ecosystem services. This affects many communities across the region, particularly vulnerable groups such as women, indigenous peoples, and the poor, who are more likely to depend on natural resources and ecosystem services and are highly vulnerable to accelerating environmental changes. Habitat degradation and fragmentation, especially in forests and grasslands, has contributed to a decline in wild mammals and birds across the region.¹⁷ The region also contains the world's largest number of threatened species, with 40,171 plants and 5,250 vertebrates categorized as threatened in 2015. The number of threatened mammal and plant species in the region increased by more than 10 and 18 respectively in the last decade.¹⁸

10. Asia-Pacific is the most disaster-prone region in the world and its populations are some of the most vulnerable. There is a strong economic dependence on the natural resource and agricultural sectors, and more than half of the region's urban population live in coastal areas.¹⁹ It is estimated that South Asia will see 40 million internal climate migrants by 2050.²⁰ As land and sea temperatures increase, hydrometeorological systems change, and thermohaline and other oceanic systems alter, many countries are facing increasing risks of floods, droughts and storms, sea level rise, storm surges, salinization, pandemics and livestock diseases, and agricultural shocks. Asia and the Pacific lost more than USD 1.5 trillion between 1970 and 2019 due to the impact of disasters.²¹

¹⁰ At time of writing (May 2021).

¹¹ World Bank (2021) *The World Bank in East Asia Pacific: COVID-19 (Coronavirus) Response*, <https://www.worldbank.org/en/region/eap/coronavirus>

¹² ESCAP (2020) *Are countries in the Asia-Pacific region initiating a "Green Recovery"? What more can be done?* <https://www.unescap.org/sites/default/d8files/knowledge-products/UNESCAP%20Green%20Recovery%20Policy%20Brief.pdf>

¹³ Wu, X. et al. (2020) 'Air pollution and COVID-19 mortality in the United States: Strengths and limitations of an ecological regression analysis', *Science advances*, 6(45), p.eabd4049. <https://projects.iq.harvard.edu/covid-pm>

¹⁴ IPBES (2018) *Regional Assessment Report on Biodiversity and Ecosystem Services for Asia and the Pacific* <https://ipbes.net/assessment-reports/asia-pacific>

¹⁵ UNEP (2018) *GEO-6: Global Environment Outlook: Regional assessment for Asia and the Pacific – Factsheet*, http://wedocs.unep.org/bitstream/handle/20.500.11822/7548/asia_and_the_pacific_fact_sheet.pdf?sequence=3&isAllowed=y

¹⁶ UNEP (2016) *State of Biodiversity in Asia and the Pacific: A Mid-Term Review of Progress Towards the Aichi Biodiversity Targets*, <https://wedocs.unep.org/xmlui/handle/20.500.11822/32106>

¹⁷ IPBES (2018) *Regional Assessment Report on Biodiversity and Ecosystem Services for Asia and the Pacific*, <https://ipbes.net/assessment-reports/asia-pacific>

¹⁸ UNEP (2018) *GEO-6: Global Environment Outlook: Regional assessment for Asia and the Pacific – Factsheet*, http://wedocs.unep.org/bitstream/handle/20.500.11822/7548/asia_and_the_pacific_fact_sheet.pdf?sequence=3&isAllowed=y

¹⁹ UN ESCAP (2015) *Asia Pacific Disaster Report 2015 – Disasters Without Borders*, <https://www.unescap.org/publications/asia-pacific-disaster-report-2015-disasters-without-border>

²⁰ World Bank (2018) *Groundswell: Preparing for Internal Climate Migration*, <https://openknowledge.worldbank.org/handle/10986/29461>

²¹ UN ESCAP (2020) *Economic and Social Survey of Asia and the Pacific 2020: Toward sustainable economies*, <https://www.unescap.org/publications/economic-and-social-survey-asia-and-pacific-2020>

11. The cumulative effects of climate change, disasters and human activities (e.g. overfishing, unsustainable agricultural land use, inappropriate coastal development) are threatening the long-term sustainability of coastal and marine ecosystems. Oceanic mega-fauna populations are increasingly threatened due to the massively increased fishing pressure; more than 5,645 commercial vessels alone were actively fishing in the Pacific Ocean in 2011. Up to 90% of coral reefs in Asia and the Pacific are expected to suffer severe degradation by 2050 as a result of coastal erosion, overfishing and unsustainable fishing methods, pollution and climate change.²² The annual economic damage of ocean acidification-induced coral reef loss by 2100 is estimated at USD 870 billion, representing a large GDP loss for small islands and coastal economies.²³

12. The region is also facing a serious plastic pollution crisis. Asia has largely driven the growth in plastic production over past decades, contributing nearly half of global plastic production, and consumes 38% of the world's plastic, making the region the leading consumers of plastic products.²⁴ Without proper waste management, much of this plastic will pollute ecosystems and inhibit their natural functions. There are approximately 5.25 trillion plastic particles floating on the ocean surface,²⁵ while the top 20 polluting rivers, mostly located in Asia, account for 67% of the global total plastic waste entering the ocean every year from rivers.²⁶ The cost of marine litter to economies in the Asia-Pacific Economic Cooperation region is estimated at USD 11 billion per year.²⁷ In 2020 increased plastic use due to the pandemic, including the reversal and postponement of some national bans on single-use plastic products, has exacerbated the plastic waste challenge.

13. The impacts of waste and pollution threaten ecosystems and biodiversity and pose harm to human health. Antimicrobial resistance (AMR) is another public health catastrophe in the making in this region. AMR may be attributed to the use and misuse of antibiotics and other antimicrobial medicines in environments where control over the production and use of pharmaceutical drugs and solid waste disposal and wastewater treatment are lax, and drug residues end up being discharged in the environment via livestock or human waste.²⁸ Some of the top consumers of antibiotics and countries with the highest AMR prevalence are in this region.

14. Some 92% of Asia and the Pacific's population are exposed to unhealthy levels of air pollution,²⁹ significantly attributable to increasing deforestation, which includes the burning of forests and peatlands, and the open burning of municipal and agricultural solid waste. The WHO estimates that around one third of global air pollution related deaths occur in the Western Pacific region, denoting air pollution as the most lethal environmental health threat for the region.³⁰ Polluted air also comes at an economic cost; it is estimated that in South Asia and East Asia, the cost of air pollution to the economy is 7.4% and 7.5% of their respective regional GDPs.³¹ During the initial COVID-19 lockdowns, there were many reports of unprecedented drops in air pollution during March and April 2020. Malaysia recorded a 26% increase in the number of 'clean' air quality days from March to April, and in Thailand average PM2.5 levels decreased by 20% in Bangkok and surrounding areas during restrictions. While this is not a sustainable solution, it provides valuable evidence that collective action can have a massive impact on air quality.

15. The region is not on track to achieve any of the SDGs by 2030 without accelerated

²² IPBES (2018) *Regional Assessment Report on Biodiversity and Ecosystem Services for Asia and the Pacific*, <https://ipbes.net/assessment-reports/asia-pacific>

²³ UNEP (2018) *GEO-6: Global Environment Outlook: Regional assessment for Asia and the Pacific – Factsheet*, http://wedocs.unep.org/bitstream/handle/20.500.11822/7548/asia_and_the_pacific_fact_sheet.pdf?sequence=3&isAllowed=y

²⁴ Our World in Data (2018) *Plastic Pollution*, <https://ourworldindata.org/plastic-pollution>

²⁵ UNEP (2020) *Unveiling Plastic Pollution in Oceans – Foresight Brief No. 18*, <https://wedocs.unep.org/handle/20.500.11822/33604>

²⁶ Lebreton, L. C. M. et al. (2017) 'River plastic emissions to the world's oceans', *Nature Communications*, vol. 8, pp. 1–10, <https://www.nature.com/articles/ncomms15611>

²⁷ UNEP (2020) *Unveiling Plastic Pollution in Oceans – Foresight Brief No. 18*, <https://wedocs.unep.org/handle/20.500.11822/33604>

²⁸ Manyi-Loh, C. et al. (2018) 'Antibiotic use in agriculture and its consequential resistance in environmental sources: Potential public health implications', *Molecules*. 23(4), 795. <https://www.mdpi.com/1420-3049/23/4/795/htm>

²⁹ UNEP (2018) *Air Pollution in Asia and the Pacific: Science-based Solutions*, <https://www.ccacoalition.org/en/file/5802/download?token=dBM5K0kC>

³⁰ WHO (2018) *One third of global air pollution deaths in Asia Pacific*, <https://www.who.int/westernpacific/news/detail/02-05-2018-one-third-of-global-air-pollution-deaths-in-asia-pacific>

³¹ Climate & Clean Air Coalition (2019) *Air Pollution in Asia and the Pacific: Science-based solutions*, <https://www.ccacoalition.org/en/content/air-pollution-measures-asia-and-pacific>

efforts. The Asia and the Pacific SDG Progress Report 2020 highlights that progress on environmental targets is impeded by negative trends for SDG 12: Responsible Consumption and Production and SDG 13: Climate Action.³² The linkages between biodiversity and ecosystems, and poverty, hunger, health, gender equality, water, cities, climate, oceans and land, means that the negative trends for biodiversity and ecosystems will undermine approximately 80% of the assessed targets related to SDGs 1, 2, 3, 6, 11, 13, 14, and 15.³³ Other goals, such as SDG 5: Gender Equality, SDG 11: Sustainable Cities and Communities and SDG 14: Life below Water, have seen some progress but will also fall short at current levels of achievement. COVID-19 has exposed the vulnerability of the progress towards achieving SDGs, such as limited social protection (as almost 70% of workers in the region are engaged in informal employment)³⁴ as well as the digital divide; only 8% of the population across Asia and the Pacific can access affordable high-speed broadband.³⁵ A major SDG challenge facing the region is a lack of available data: only 42% of SDG indicators had available data in 2020.³⁶ Strengthening the data systems across Asia and the Pacific is necessary to track successes and challenges, and plan more effectively.

III. Opportunities for Advancing Concrete Actions for Nature to Achieve the Sustainable Development Goals

A. Nature for Poverty Eradication, Jobs and Economic Prosperity

16. The current pandemic has highlighted the extent to which human activity is placing increasing pressures on the health of our natural environment, leading not only to zoonotic and other disease risks but exacerbating inequalities and livelihood insecurities, particularly for vulnerable populations living in poverty. The economic fallout from COVID-19 in the Asia-Pacific region is estimated to be between USD 1.4 trillion (6.0% of regional GDP) and USD 2.2 trillion (9.5% of regional GDP) in 2020, and between USD 0.8 trillion (3.6% of regional GDP) and USD 1.5 trillion (6.3% of regional GDP) in 2021, with the region accounting for about 27-30% of the overall decline in global output.³⁷ Different subregions are being impacted differently: for example, while East Asian economies are expected to be hit less hard, the largest impacts are seen in South Asia and the small tourism-dependent economies group due to a sharp decline in domestic demand and the tourism sector.³⁸ It is estimated that in 2020, 8.8% of global working hours were lost relative to the fourth quarter of 2019, equivalent to 255 million full-time jobs.³⁹ The effect on informal economy workers is especially severe, and COVID-19 lockdown and containment measures may increase relative poverty levels by as much as 56% in low-income countries.⁴⁰ A COVID-19 rapid impact assessment conducted by UNEP in Bangladesh, Viet Nam and Cambodia found that many rural women are facing new and compounding challenges in dealing with the impacts of climate change including water scarcity and unpredictable weather patterns. These impacts affect their agricultural productivity and interact with COVID-19 impacts, affecting their ability to reach markets, manage and store stock and negotiate with trading partners.

17. Despite the challenges of the pandemic, it presents a unique opportunity for 'building back better'. It is estimated that a green pandemic recovery could reduce predicted GHG emissions for 2030 by up to 25%, bringing the world closer to meeting the 2 degrees Celsius goal of the Paris Agreement.⁴¹ Additionally, the International Resource Panel estimate that policies which combat climate

³² UN ESCAP (2020) *Asia and the Pacific SDG Progress Report 2020*, <https://www.unescap.org/publications/asia-and-pacific-sdg-progress-report-2020>

³³ IPBES (2018) *Regional Assessment Report on Biodiversity and Ecosystem Services for Asia and the Pacific*, <https://ipbes.net/assessment-reports/asia-pacific>

³⁴ ESCAP (2020) *The Protection We Want: Social Outlook for Asia and the Pacific*, <https://www.unescap.org/publications/protection-we-want-social-outlook-asia-and-pacific>

³⁵ ESCAP (2021) *Beyond the Pandemic: Building back better from crises in Asia and the Pacific*, https://www.unescap.org/sites/default/d8files/knowledge-products/Beyond%20the%20pandemic_Theme%20study.pdf

³⁶ ESCAP (2020) *Asia and the Pacific SDG Progress Report 2020*, <https://www.unescap.org/publications/asia-and-pacific-sdg-progress-report-2020>

³⁷ ADB (2021) *Macroeconomic impact of COVID-19 in developing Asia*, <https://www.adb.org/sites/default/files/publication/696296/adbi-wp1251.pdf>

³⁸ ADB (2021) *Macroeconomic impact of COVID-19 in developing Asia*, <https://www.adb.org/sites/default/files/publication/696296/adbi-wp1251.pdf>

³⁹ ILO (2021) *ILO Monitor: COVID-19 and the world of work. Seventh edition Updated estimates and analysis*, https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/briefingnote/wcms_767028.pdf

⁴⁰ ILO (2020) *COVID-19 crisis and the informal economy: Immediate responses and policy challenges*, https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/briefingnote/wcms_743623.pdf

⁴¹ UNEP (2020) *Emissions Gap Report 2020*, <https://www.unep.org/emissions-gap-report-2020>

change, protect biodiversity and promote resource efficiency could increase global GDP by 8%.⁴² However, as of September 2020, G20 countries had committed 50% more funding to fossil fuels subsidies and support than to low-carbon energy in their COVID recovery plans.⁴³ A UNEP-Oxford analysis of stimulus measures by the 50 largest economies also indicates a concerning lack of investment in sustainability so far. It is imperative that recovery should follow the 'building back better' approach, and that this approach integrates solutions to ongoing climate, pollution, and other environmental crises. Greening recovery spending presents a sustainable solution - the social co-benefits of carefully designed green policies can include significant improvements to health outcomes, reductions in the cost of energy, and increases in food security, as well as more, safer, and better paid employment opportunities.⁴⁴

18. Nature provides us with essential services that support our economy and well-being, including the provision of clean water, healthy soils, raw materials, pollination, and a stable climate. It is estimated that more than half of the world's GDP is moderately or highly dependent on nature. Major economic sectors are strongly dependent on nature and the resources it provides, as highlighted by the World Economic Forum (2020); this report estimated that approximately USD 44 trillion of economic value generation is moderately or highly dependent on nature, with construction (USD 4 trillion), agriculture (USD 2.5 trillion) and food and beverages (USD 1.4 trillion) being the most highly nature-dependent industries.⁴⁵ These industries rely on the direct extraction of resources from forests and oceans or on ecosystem services that support their operations and production activities. Among rural and vulnerable communities, livelihood and job options are particularly dependent on healthy ecosystems, through agriculture and rural supply chains, provision of environmental good and services, and nature-based economic opportunities. Healthy ecosystems also offer protection against the growing impacts of climate change and natural disasters.

19. However, as mentioned earlier, nature's capacity to provide these essential services continues to decline, including in Asia and the Pacific region. In COVID-19 recovery, we cannot continue with a business-as-usual approach, which would further increase environmental externalities such as GHG emissions and pressures on biodiversity and ecosystems. COVID-19 recovery efforts need to be fair, sustainable, and inclusive. Policymakers should not lose sight of the unprecedented opportunity to accelerate structural transformations for sustainable development, with a strong focus on investing in actions on nature that support sustainable a green and blue economy. Transforming the operations of nature-dependent economic sectors towards sustainability could also result in increased business opportunities. One analysis shows that key transitions⁴⁶ in the world's food and land use systems, including through nature-based solutions, could provide a USD 4.5 trillion opportunity for businesses each year by 2030, while at the same time saving USD 5.7 trillion a year in damage to people and the planet.⁴⁷

Opportunities and Future Actions

20. *Green and blue stimulus packages:* Green and blue stimulus packages to 'build back better' will be key in regional COVID-19 recovery, and in achieving the SDGs, the Paris Agreement, and other global goals. Governments must ensure that public spending to address the current economic crisis also aims to both reduce GHG emissions and restore balance to the Earth's natural systems. Economic stimulus packages can accelerate the transition from fossil fuels towards clean energy sources. They should include investments in green and decent jobs, including on-farm and off-farm job creation.⁴⁸ Investing in green and blue transformations in a COVID-19 recovery process will help create jobs and employment options in rural areas, fishing and tourism communities. Furthermore, building back better by investing directly in nature

⁴² UNEP & the International Resource Panel (2019) *Global Resources Outlook 2019: Natural Resources for the Future We Want*, <https://www.resourcepanel.org/reports/global-resources-outlook>

⁴³ Antonio Guterres via Twitter, 22 November 2020, <https://twitter.com/antonioguterres/status/1330512608655536129>

⁴⁴ UNEP (2021) *Are We Building Back Better*, <https://wedocs.unep.org/bitstream/handle/20.500.11822/35281/AWBBB.pdf>

⁴⁵ World Economic Forum (2020) *Nature Risk Rising: Why the Crisis Engulfing Nature Matters for Business and the Economy*, http://www3.weforum.org/docs/WEF_New_Nature_Economy_Report_2020.pdf

⁴⁶ Critical transitions include: promoting healthy diets, adopting nature-based solutions (productive and regenerative agriculture, protecting and restoring nature, a healthy and productive ocean), providing wider choice and supply (diversifying protein supply, reducing food loss and waste, local loops and linkages), and providing opportunity for all (digital revolution, stronger rural livelihoods, gender and demography). See: <https://www.foodandlandusecoalition.org/wp-content/uploads/2019/09/FOLU-GrowingBetter-GlobalReport.pdf>

⁴⁷ The Food and Land Use Coalition (2019) *Growing Better: Ten Critical Transitions to Transform Food and Land Use*, <https://www.foodandlandusecoalition.org/wp-content/uploads/2019/09/FOLU-GrowingBetter-GlobalReport.pdf>

⁴⁸ UN (2020) *Policy Brief: The World of Work and COVID-19*, https://www.ilo.org/global/topics/coronavirus/impacts-and-responses/un/WCMS_748428/lang-en/index.htm

and restoring ecosystems can enhance the provision of vital ecosystem goods and services and support job creation, helping to revitalize impoverished coastal, rural and peri-urban areas. The employment and other benefits of restoration are predicted to be 10 times higher than the costs of restoration interventions across different biomes, and for Asia, the cost of inaction in the face of land degradation is at least three times higher than the cost of action.⁴⁹ Following the seminal work of Hepburn et al. (2020), UNEP-Oxford analysis supported by the Global Recovery Observatory has identified green energy, green transport, energy efficiency and building retrofits, natural capital investment, and green research & development as high potential 'green spend' areas.⁵⁰ They have the potential to simultaneously facilitate swift economic recovery, secure long-term social returns, and make progress against numerous environmental objectives.⁵¹

21. *Mobilizing green and blue finance*: There is growing recognition that achieving the SDGs through scaled-up actions for nature will require financial flows and a shift in patterns of investment. The Nature Conservancy has found that biodiversity is facing an average financing gap of USD 711 billion per year until 2030, with current levels reaching just USD 78-91 billion annually.⁵² These current levels of financing are heavily outweighed by the estimated USD 500 billion in subsidies, across a range of sectors, which are harmful to biodiversity.⁵³ Reforming and repurposing these subsidies, particularly in land-use sectors such as agriculture, is an opportunity to redirect funding towards nature-positive practices. Fiscal policy options like environmental taxation and aligning increased budget allocation with climate and biodiversity goals through green and blue economic growth can support countries in removing inefficiencies in expenditures such as environmentally harmful subsidies, and to reallocate public finance resources to action for the SDGs, Nationally Determined Contributions (NDCs) and nature. Furthermore, the scale of financial investment needed to achieve transformative change greatly exceeds the current capacity of public financing, highlighting the need to attract substantial private sector financing. Socially and environmentally oriented investment funds that provide low-cost financing to support on-the-ground efforts towards sustainable development can close part of the financing gap. Green and blue finance policies can help channel public and private finance for an SDG-aligned labour market recovery and reallocate scarce resources towards priority recovery measures, such as: green and decent jobs; mainstreaming biodiversity into infrastructure development; investments in ecological infrastructure; circularity to advance sustainable consumption and production; financing for climate stability and ecosystems integrity; and socially inclusive outcomes. Placing Asia and Pacific economies onto a sustainable development pathway requires an unprecedented shift in investment away from GHG, fossil fuel, and natural resource intensive industries and trade towards more resource efficient technologies and business models. The Finance Solutions Catalogue of UNEP Finance Initiative, Sustainable Stock Exchanges Initiative, UNDP's Biodiversity Finance Initiative (BIOFIN) and UNEP's work with Green Fiscal Policy Network partners (including IMF, GIZ, and others) provides a range of financing instruments, tools and strategies that are applicable to the field of climate and biodiversity finance, and in designing green fiscal reforms.⁵⁴

22. *Internalizing natural capital values and moving beyond GDP*: Member States can utilize current recovery priorities and opportunities to contribute to longer-term, national level progress in changing economic metrics to internalize natural capital values and move beyond GDP, for example, through the use of Inclusive Wealth⁵⁵ as a better measure of sustainable economic growth and transition to a green and blue economy.⁵⁶ Policy and investment decisions made in the post COVID-19 recovery process should be guided

⁴⁹ IPBES (2018) *The IPBES assessment report on land degradation and restoration*,

⁵⁰ <https://greenfiscalspolicy.org/observatory/>

⁵¹ UNEP (2021) *Are We Building Back*

Better, <https://wedocs.unep.org/bitstream/handle/20.500.11822/35281/AWBBB.pdf>

⁵² Deutz, A., et al. (2020) *Financing Nature: Closing the global biodiversity financing gap*. The Paulson Institute, The Nature Conservancy, and the Cornell Atkinson Center for Sustainability..

⁵³ OECD (2020) *A Comprehensive Overview of Global Biodiversity Finance*,

<https://www.oecd.org/environment/resources/biodiversity/report-a-comprehensive-overview-of-global-biodiversity-finance.pdf>

⁵⁴ Financing instruments in the Finance Solutions Catalogue include: 1) mechanisms that can generate or leverage additional financial resources from or for biodiversity; 2) measures that can re-orient existing financial flows towards biodiversity or away from harmful activities; 3) measure that can prevent or reduce future investment needs by reducing or amending counter-productive policies, expenditures and behaviors; and 4) measures or strategies that can enhance cost-effectiveness/efficiency, synergies and/or favor a more equitable distribution of resources (<https://www.biodiversityfinance.net/about-finance-solutions-catalogue>)

⁵⁵ Information about UNEP's Inclusive Wealth Report initiative is available at:

<https://www.unenvironment.org/resources/report/inclusive-wealth-report-2018>

⁵⁶ UNEP (2021) *Making Peace with Nature: A scientific blueprint to tackle the climate, biodiversity and pollution emergencies*, <https://www.unep.org/resources/making-peace-nature>

by Inclusive Wealth. It includes a holistic assessment of produced capital (manufacturing output or GDP), as well as human capital and natural capital. As a multipurpose indicator, it is capable of measuring not only traditional stocks of wealth but also those less tangible and unseen—such as educational levels, skill sets, health care, as well as environmental assets and the functioning of key ecosystem services that form the backbone of human well-being and ultimately set the parameters for sustainable development. Inclusive Wealth measurement can particularly assist countries in making natural capital, including biodiversity, an integral part of post-pandemic stimulus packages and in demonstrating the potential of nature positive development model in supporting jobs and economic prosperity. Ongoing work by UNEP with the University of Oxford to support policymakers in assessing natural capital impact (in addition to GHG and air pollution impacts, plus five socio-economic impact indicators) of every government spending/budget item through Green Public Finance Frameworks will bring unprecedented transparency and build an evidence-base for aligning fiscal policy with environmental and socio-economic sustainability commitments, and increase the efficiency and effectiveness of public finance.

B. Nature for Climate

23. It is critical that the climate crisis is not neglected in the response to and recovery from COVID-19. Pandemics and climate risks are similar in that both are systemic in their direct impacts and knock-on effects. The Asia and the Pacific region is highly vulnerable to the impacts of climate change, and these will become more severe in the coming decades. Regional emission rates were not significantly reduced during pandemic conditions in 2020, and emissions may even increase with the influence of non-sustainable economic recovery plans in the region. This is important because annual global emissions need to fall by 15 GtCO₂e by 2030, compared to 2020 commitments, to meet the goal of keeping global warming to 2 degrees Celsius.⁵⁷ If current national pledges to reduce GHG emissions are implemented, they are still likely to result in at least 3 degrees of global warming.⁵⁸

24. Climate change is projected to accelerate the frequency and intensity of heatwaves, storms, floods, and other extreme events in many parts of the region, with direct and indirect impacts on people, communities, economies, and nature. For example, according to new research using 2010 population data, a rising 'high tide line' could affect the homes of 51 million people in Asia; in the worst case scenario, between 43 million and 100 million people in China alone would be inundated by the end of the century. More than 70% of the total number of people worldwide currently living on land affected by sea level rise live in eight Asian countries: China, Bangladesh, India, Vietnam, Indonesia, Thailand, the Philippines, and Japan.⁵⁹ Sea level rise and related climate change impacts have been recognized as existential threats across the Pacific in particular. Glacier retreat in the Hindu-Kush Himalayas, along with increased spring and winter temperatures, are impacting upon ecosystems, and as a consequence, affecting crop production, food and water security, and biodiversity. There is also recognition of a growing risk of abrupt and irreversible changes in the climate system, called 'tipping points'. Evidence is mounting that these events could have significant impacts across different biophysical systems, potentially committing the world to long-term irreversible changes, even if average temperature changes between only 1 to 2 degrees Celsius.⁶⁰ Intensified competition over increasingly scarce resources necessary to sustain the livelihoods of millions is associated with emerging resource conflicts and new patterns of survival migration, also affected by climate change. It is estimated that by 2050, there will be some 40 million internal climate migrants in South Asia alone, if effective action is not taken.⁶¹ As always, the poorest and most vulnerable people are under the highest threat.

25. COVID-19 recovery provides opportunities to maximize solutions that both utilize and protect nature through climate-smart recovery and building back better, greener and for the future. Both climate adaptation and mitigation opportunities can be harnessed, often in synergy. Mitigating climate

⁵⁷ UNEP(2020) *Emissions Gap Report 2020: Executive Summary*, <https://www.unep.org/emissions-gap-report-2020>

Lenton et al. (2019) 'Climate tipping points – too risky to bet against'. *Nature*, Vol. 575: 592-595, <https://www.nature.com/articles/d41586-019-03595-0?fbclid=IwAR0EKm8dm1iaHv9BISORq2IsAOU573jBNVmw4CoGwvqiOhVoZRL4wP69Sko>

⁵⁹ Kulp, S, & Strauss, B (2019) 'New elevation data triple estimates of global vulnerability to sea-level rise and coastal flooding', *Nature Communications*, vol. 10, <https://www.nature.com/articles/s41467-019-12808-z>

⁶⁰ Lenton et al. (2019) 'Climate tipping points – too risky to bet against'. *Nature*, Vol. 575: 592-595, <https://www.nature.com/articles/d41586-019-03595-0?fbclid=IwAR0EKm8dm1iaHv9BISORq2IsAOU573jBNVmw4CoGwvqiOhVoZRL4wP69Sko>

⁶¹ The World Bank (2018) *Groundswell: Preparing for Internal Climate Migration*, <https://openknowledge.worldbank.org/handle/10986/29461>

change through nature requires conserving nature, avoiding further degradation, and restoring and enhancing the capacity of nature to absorb and store carbon. Recent research suggests that nature-positive solutions could provide around 30% of the cost-effective mitigation that is needed to stabilize warming to below 2 degrees Celsius. Wetland restoration alone could help us to meet 14% of mitigation needs.⁶² In addition, within agriculture, technology innovation and transfer, crop diversification, and climate-smart agricultural (CSA) practices can act as important mitigation measures. Adaptation to climate change can include restoration and management of coastal ecosystems, like mangroves, which provide protection from coastal flooding, erosion and storm surges, as well as co-benefits such as habitat for wildlife.⁶³ The Global Commission on Adaptation's flagship 2019 report established that investing USD 1.8 trillion in just five areas, including early-warning systems, climate-resilient infrastructure, improved dryland agriculture crop production, global mangrove protection, and water security could generate USD 7.1 trillion in total net benefits.⁶⁴ However, as noted earlier, the proportion of finance currently directed towards green and climate resilient solutions is falling short.

26. Nature-positive solutions can provide a range of environmental social and economic benefits that help to build long-term resilience to climate change and hydrometeorological hazards. Strategic solutions focused on ecosystem-based disaster risk reduction (Eco-DRR) and ecosystem-based adaptation (EbA) include integrated water resource management (IWRM), integrated flood risk management (IFRM), and green, blue and hybrid resilient infrastructure, all supported by tools such as environmental accounting⁶⁵. These nature-positive solutions are an effective option in many contexts for a number of reasons: they are typically low cost with comparably low initial capital expenditure and on-going operational expenses; their benefits usually increase over time, compared to grey engineered solutions which tend to deteriorate over time; they often use low-technology solutions; and they typically provide multiple social, environmental and economic benefits. Across Asia and the Pacific, Eco-DRR and EbA are increasingly being scaled-up through strategic integration into disaster risk reduction policies, adaptation planning including national adaptation plans (NAPs), and SDG-aligned national development plans.

27. 2021 is providing important opportunities to increase global and regional ambition on climate change and to promote nature positive policies and investments, including through the Conferences of the Parties to the CBD and the UNFCCC, the UN Food Systems Summit, and the launch of the UN Decade on Ecosystem Restoration. However, current efforts are limited in scale and tend to focus on certain sectors and stand-alone plans. Challenges include a lack of skills and knowledge in planning and selecting appropriate mitigation and adaptation measures, and limited evidence on the costs and benefits of different solutions in different contexts. Significant deployment of nature-positive solutions will require integration into national and local development frameworks, as well as technical and financial resources, notably policy support, pilot interventions to build the evidence base, and knowledge and technical guidance. This includes green fiscal reforms – particularly in the agriculture sector – to remove/reduce subsidies for emission-intensive commodities (e.g. rice, beef) and to instead incentivize the adoption of nature-positive climate mitigation and adaptation practices. Facilitating access to these resources can build the enabling environment needed to ensure that nature-based solutions address climate change, support recovery, and build resilience as part of a transformational pathway for achieving the SDGs.

Opportunities and Future Actions

28. *Nature-positive solutions in urban and rural contexts:* Countries in the region are piloting and implementing a range of solutions to climate change that actively utilize nature in urban settings. Large-scale deployment of nature-positive solutions as part of urban spatial and development planning requires institutional and technical capacity, mobilization of finance, and sharing lessons from successful approaches; learning from these experiences can support the transfer of relevant knowledge and technologies across the region for addressing climate change impacts and other challenges in urban areas. Ecologically friendly options like agroforestry can provide multiple benefits for climate change mitigation and adaptation, as well as social and economic benefits for farmers and rural communities. Cost-benefit

⁶² UNEP & FAO (2020) *Factsheet: The UN Decade on Ecosystem Restoration 2021-2030*. <https://wedocs.unep.org/bitstream/handle/20.500.11822/30919/UNDecade.pdf>

⁶³ UNEP-WCMC (2019) *The Role of the Natural Environment in Adaptation; Background Paper for the GCA*, <https://gca.org/reports/the-role-of-the-natural-environment-in-adaptation/>

⁶⁴ Global Center on Adaptation (2020) *State and Trends in Adaptation Report 2020. Building Forward Better from Covid 19: Accelerating Action on Climate Adaptation*, <https://gca.org/reports/state-and-trends-in-adaptation-report-2020/>

⁶⁵ See for example: <https://seea.un.org/>

analysis of 30-year scenarios (up to 2048) in a pilot site for agroforestry in Nepal shows that expanding agroforestry interventions could provide 36% more benefits than 'business-as-usual', while an expanding further with EbA could deliver 39% more benefits.⁶⁶ Trade and trade related policies including the uptake of sustainability standards and certification in agricultural supply chains could be instrumental in expediting these efforts.

29. *Role of private sector and financial institutions:* Private sector engagement should continue to shift from 'corporate social responsibility' schemes to a greater recognition of the operational value of solutions to climate change that actively utilize nature. Businesses can and do turn to nature to reduce their emissions and enhance the climate resilience of their assets, operations, and supply chains, yielding multiple benefits for themselves, people and nature. Adjustments to policies and procedures can help support this transition, for example through fiscal incentives which level the playing field for green investments. Furthermore, actions for nature can be eligible and attractive for cost-sharing, investment pooling, and innovative financial mechanisms such as resilience bonds. A form of Catastrophe Bond, resilience bonds link insurance premiums to the resilience of projects and therefore provide a way to monetize avoided losses through a rebate structure. The resulting dividends can be used for other resilience activities, such as training operators on nature-positive solutions maintenance or other capacity building. The European Bank for Reconstruction and Development recently issued the first climate resilience bond, which raised USD 700 million. These funds can be used towards developing climate-resilient infrastructure and help support actions on nature for climate change.⁶⁷ Governments also have a key role to play, as fiscal and trade policy design sets the incentive and regulatory foundation and structure for private sector investments in socio-economic and environmental priority sectors and activities. Greening fiscal and trade policy is thus a priority not for building an enabling environment for crowding in private sector finance for scaling up a green economy transition.

30. *Increased ambition on climate change through Nationally Determined Contributions (NDCs):* As countries revise or prepare new NDCs, there is a major opportunity to increase global ambition on climate change and to strengthen nature-positive solutions, including support for the 'Nature-Based Solutions for Climate Manifesto'⁶⁸ and drawing from existing best practice for climate initiatives, as listed on the 'NbS Contributions Platform'.⁶⁹ All countries from the Asia and the Pacific Region have submitted their NDCs and highlighted their determination to strengthen efforts to reduce GHG emissions and to develop NAPs. More than 70% of NDCs to date include agricultural, land use change and forestry options to reduce GHG emissions, for example by: reducing deforestation and forest degradation; conservation and enhancement of forest carbon stocks; sustainable management of forests; climate-smart agriculture; and restoration of other ecosystems such as wetlands. NDCs also address the adverse impacts of climate-induced disasters, with flooding, higher temperatures and heatwaves, sea level rise, drought, and storms as the top five climatic hazards identified. Proposed measures to address these hazards include the protection and restoration of forests, mangroves and wetlands, and other coastal and marine ecosystems, and improved conservation of species. Despite the significant progress to date, however, more concrete, evidence-based targets for nature-positive solutions are urgently needed. The prominence of nature-positive solutions in NDCs generally does not translate into specific targets; only around 17% of NDCs that include nature-based solutions also set quantifiable and robust targets. Similarly, although over 70% of NDCs refer to efforts in the forest sector, only 20% of these include quantifiable targets, and only 8% include targets expressed in tons of carbon dioxide equivalent. Considerable potential remains for countries to strengthen the role and monitoring of nature-positive solutions in future NDCs. The targets of NDCs should also be integrated in thematic, sectoral plans and policies of the public and private sector, as well as into related monitoring and evaluation frameworks.

C. Nature for Human and Ecosystem Health

31. Environmental damage is putting human well-being at risk and undermining hard-won development gains, by causing economic losses and millions of premature deaths annually. The well-being

⁶⁶ Mander, M (2018) *Ecosystem Services Supply, Demand and Values at Chiti, Nepal' Ecosystem-based Adaptation through South-South Cooperation (EbA South) Final Report*. Nairobi: UNEP.

⁶⁷ EBRD (2019) 'World's first dedicated climate resilience bond, for US\$ 700m, is issued by EBRD', <https://www.ebrd.com/news/2019/worlds-first-dedicated-climate-resilience-bond-for-us-700m-is-issued-by-ebrd-.html>

⁶⁸ See: 'Compendium of Contributions Nature-Based Solutions' at https://wedocs.unep.org/bitstream/handle/20.500.11822/29988/Compendium_NBS.pdf

⁶⁹ See: <https://www.unenvironment.org/nbs-contributions-platform>

of today's youth and future generations depends on an urgent and clear break with current trends of environmental decline, and in this regard, there is urgent need to transform humankind's relationship with nature.⁷⁰ Globally, unhealthy environments are linked to at least 23% of all deaths and 26% of deaths of children under age five.⁷¹ Political commitments to actions that recognize 'Nature for Health' are urgently needed and are slowly emerging. More than ever, Member States realize that human health and well-being are dependent upon nature. The initial online session of the UN Environment Assembly (UNEA-5) in February 2021 highlighted the devastating global effects of the COVID-19 pandemic, creating new and compounding existing health, socio-economic and environmental challenges. States expressed deep concern that our environment and sustainable development are put in jeopardy by the continuing loss of biodiversity, the degradation and fragmentation of ecosystems and habitats for wildlife, the threats to lives and livelihoods from climate change, and by pollution and poor management of waste and chemicals.

32. The current COVID-19 pandemic is a reminder that there are close connections between the health of people and the health of our planet. Some 60% of known infectious diseases and up to 75% of emerging infectious diseases are zoonotic (with the transmission of disease vectors such as viruses from host animals to humans).⁷² It is estimated that 700,000 of the 1.6 million potential viruses in mammals and birds could pose a risk to human health.⁷³ IPBES has highlighted that pandemics can be caused by activities that bring increasing numbers of people into direct contact, and often conflict, with the animals carrying pathogens. Habitat destruction and rampant deforestation, changes in wildlife populations due to climate change, ecosystem degradation, uncontrolled expansion of agriculture, industrial-scale and intensive farming (including factory farming), mining and infrastructure development, as well as the exploitation of wild species, have contributed significantly to the crossover of diseases from wildlife to people, or from wildlife to domesticated livestock. IPBES has also warned that as many as 1.7 million unidentified viruses of the type known to infect people exist in mammals and water birds, and pandemics like COVID-19 could occur more frequently unless we scale up efforts to stop destroying nature.⁷⁴ To minimize such risks in the future, urgent actions are also needed to ensure that the post COVID-19 recovery process will not augment environmental externalities such as GHG emissions and pressure on biodiversity and ecosystems.

33. Pollution is another major environmental challenge in the region, linked to natural resource use, and with implications for human health and well-being. Air pollution is the most pressing environmental health crisis in the world currently and is responsible for more than 6.5 million deaths annually, 70% of which occur in the Asia and the Pacific.⁷⁵ Air pollution also reduces resilience to disease, with recent research showing that an increase of only 1 µg/m³ in long term exposure to pollutants of PM2.5 is associated with a 15% increase in the COVID-19 death rate.⁷⁶ An increasing number of national governments – Thailand among the recent additions - recognize air pollution as a leading cause of non-communicable diseases (NCDs). Dominant sources of air pollution are industrial processes, transport, intensive agriculture, and land use change. Air pollution and haze, caused in part by the burning of agricultural residues, forest areas and peatlands, affects human health and tourism revenues across the Asia and the Pacific region.⁷⁷ In Southeast Asia, the seasonal transboundary haze due to clearing and burning of forests - including for the development of palm oil and paper pulp sectors and the cultivation of animal feed crops to meet the growing demand for meat - has become a widely recognized, recurrent and significant public health concern. According to the World Bank (2015), up to 90% of the smoke which creates the recurring haze in Southeast Asia comes from peatland fires.⁷⁸ Although there are limited data available, studies in some affected countries suggest that there are consistent deleterious effects on human psychological, respiratory, cardiovascular and

⁷⁰ UNEP (2021) *Making Peace with Nature: A scientific blueprint to tackle the climate, biodiversity and pollution emergencies*, <https://www.unep.org/resources/making-peace-nature>

⁷¹ WHO (2016) *Preventing Disease Through Healthy Environments*, https://www.who.int/quantifying_ehimpacts/publications/preventing-disease/en/

⁷² UNEP & ILRI (2020) *Preventing the Next Pandemic: Zoonotic diseases and how to break the chain of transmission*, <https://www.unep.org/resources/report/preventing-future-zoonotic-disease-outbreaks-protecting-environment-animals-and>

⁷³ UNEP (2021) *Making Peace With Nature: A scientific blueprint to tackle the climate, biodiversity and pollution emergencies*, <https://www.unep.org/resources/making-peace-nature>

⁷⁴ Settele, J., Diaz, S., and Brondizio, E. (2020) *IPBES Expert Guest Article – COVID-19 Stimulus Measures Must Save Lives, Protect Livelihoods, and Safeguard Nature to Reduce the Risk of Future Pandemics*, <https://ipbes.net/covid19stimulus>

⁷⁵ UNEP (2021) *Restoring clean air*, <https://www.unenvironment.org/regions/asia-and-pacific/regional-initiatives/restoring-clean-air>

⁷⁶ Wu, X., et al. (2020). 'Air pollution and COVID-19 mortality in the United States: Strengths and limitations of an ecological regression analysis'. *Science Advances*, 6(45), <https://projects.iq.harvard.edu/covid-pm>

⁷⁷ Balakrishnan, K., et al. (2019). *Air Pollution in Asia and the Pacific: Science-based Solutions*.

⁷⁸ World Bank (2015) *Indonesia's Fire and Haze Crisis*, <https://www.worldbank.org/en/news/feature/2015/12/01/indonesias-fire-and-haze-crisis>

neurological morbidities and mortality rates.⁷⁹

34. Access to clean water is another area where the region faces challenges and further efforts and innovations are needed, including nature-based solutions. The Asia and Pacific region has made good progress in improving access to safe drinking water in the past decade. Although data are scarce, an estimated 89% of the population are using safely managed water.⁸⁰ However, this value ranges from more than 99% coverage in countries like Singapore and New Zealand, down to 16% in Lao PDR, and to zero reported safely managed water sources in Afghanistan, indicating ongoing water quality issues in many parts of the region.⁸¹ Increasingly, poor water quality is combining with a lack of adequate wastewater infrastructure, which can lead to severe water and land pollution and significant challenges in delivering safely managed water.

35. The quality of freshwater ultimately depends on the continued, healthy functioning of ecosystems. The water-related services provided by forests and wetlands include the regulation of water flows, water filtering and purification, and erosion control. Globally, in forests, these services collectively account for up to USD 7,236 per hectare per year, representing more than 44% of the total value of forests, and exceeding the values of carbon storage, food, timber, and recreation and tourism services combined.⁸² However, major changes have occurred in nutrient loading in freshwater worldwide, as a result of unsustainable development – particularly, the expansion and intensification of agriculture – which has been facilitated by government support for chemical fertilizers and pesticides has caused major changes in nutrient loading in freshwater worldwide. It is estimated that high risks to water quality due to excessive biochemical oxygen demand (BOD) will affect one-fifth of the global population in 2050, while excessive nitrogen and phosphorous will increase to affect one-third of the global population over the same period.⁸³ Untreated nutrient inputs also contribute to increases in harmful algal blooms, leading to serious health effects, such as skin irritation, respiratory ailments, and neurotoxic and carcinogenic risks. In addition, sea level rise and ecosystem degradation are leading to groundwater salinization, a key factor in predictions that low-lying atoll islands across the Pacific will be increasingly difficult for human habitation by 2030-2060.⁸⁴

36. In addition to water quality, water quantity – specifically water scarcity - can impact on people's health and well-being. It is estimated that up to 3.4 billion people will be living in water-stressed areas of Asia by 2050,⁸⁵ and climate change impacts could increase this estimate in many parts of the region at different seasons, including in unplanned urban areas, which are growing exponentially. Water scarcity also has implications for food security, through impacts on agricultural production (the largest user of freshwater⁸⁶). In the least developed countries in the region, women and girls generally have primary responsibility for collecting and managing water, spending up to five hours per day traveling as far as six kilometers to collect water. Increased water scarcity will have profound impact on gender equality and women's and girl's ability to engage in income generating activities and education.⁸⁷

37. The mining sector is another field where ecosystem health and human health are intertwined. Artisanal and small-scale gold mining (ASGM) is the world's largest employer in the extractives sector, with up to 15 million miners in 70 countries, including four to five million women and children. The Asian region supplies up to 20% of the world's gold.⁸⁸ Use of mercury in ASGM, as well as deforestation in

⁷⁹ Cheong, K.H. et al. (2019) 'Acute Health Impacts of the Southeast Asian Transboundary Haze Problem - A Review'. *International Journal of Environmental Research and Public Health*. 2019 Sept; 16(18): 3286.

⁸⁰ Only 21 countries in the Asia and the Pacific region officially report on this statistic to the JMP: <https://washdata.org/data/household#!/>

⁸¹ UN ESCAP (2020) *Asia and the Pacific SDG Progress Report 2020*, <https://www.unescap.org/publications/asia-and-pacific-sdg-progress-report-2020>

⁸² TEEB (The Economics of Ecosystems & Biodiversity) (2009) *TEEB Climate Issues Update*, <http://www.teebweb.org/publication/climate-issues-update/>

⁸³ Veolia and IFPRI (International Food Policy Research Institute) (2015) *The Murky Future of Global Water Quality. A White Paper*, <http://www.ifpri.org/publication/murky-future-global-water-quality-new-global-study-projects-rapid-deterioration-water>

⁸⁴ Storlazzi et al. (2018) 'Most atolls will be uninhabitable by the mid-21st century because of sea-level rise exacerbating wave-driven flooding', *Science Advances*, Vol. 4, no. 4, <https://advances.sciencemag.org/content/4/4/eaap9741>

⁸⁵ International Institute for Applied Systems Analysis (2016) *Water Futures and Solutions: Asia 2050*, Laxenburg, Austria.

⁸⁶ FAO & WWC (2015) *Towards a water and food secure future: Critical perspectives for policy makers*, <http://www.fao.org/3/a-i4560e.pdf>

⁸⁷ UN ESCAP (2017) *Gender, the Environment and Sustainable Development in Asia and the Pacific*, <https://www.unescap.org/sites/default/files/publications/SDD-Gender-Environment-report.pdf>

⁸⁸ UNEP (2016) *A new shine to gold: Reducing health hazards of artisanal and small-scale gold mining*, <https://www.unenvironment.org/news-and-stories/story/new-shine-gold-reducing-health-hazards-artisanal-and-small-scale-gold->

and around mining sites, and poor working conditions, brings about significant negative impacts on people's health, as well as negatively affecting the natural environment.

38. Coastal and marine areas play an important role in the health and well-being of communities in Asia and the Pacific region. They often host highly concentrated areas of human activity, such as coastal cities and towns, with high population densities, infrastructure and tourist developments, ports, fisheries, and aquaculture. As a result, coastal and marine ecosystems in the region are being increasingly modified and degraded. These trends entail particular risks for human health and well-being, such as impacts on food security and loss of the protective ecosystem services that help to mitigate the impacts of natural disasters. More than 1.5 billion people, mostly in Asia, depend on fish for approximately 20% of their animal protein intake.⁸⁹ The conservation and restoration of marine and coastal ecosystems, including coastal forests, dunes, estuaries, marine fisheries, coral reefs and others, can thus provide opportunities for actions for nature that support human health and well-being.

39. Marine pollution including plastic is degrading marine and coastal ecosystems and injuring marine organisms and wildlife. Between 4.8 and 12.7 metric tons of plastic is estimated to annually enter the world's oceans from land-based sources and plastic comprises three-quarters of marine litter.⁹⁰ Furthermore, one of the consequences of the COVID-19 pandemic has been a sudden surge in the volume of plastic waste, particularly for products used for personal protection and healthcare purposes. Such single-use products are difficult to recycle and may overwhelm already inadequate waste management systems. They are being found in increasing numbers on coastlines, in rivers and on landfills. Marine litter is directly linked to public health as humans are physically vulnerable to fragments of plastic materials as well as to chemical substances from plastic litter.⁹¹ Informal waste workers are a particularly vulnerable group, while workers in the plastic industry face exposure to hazardous chemicals, and emerging evidence indicates that women's reproductive health can be put at risk in such settings. Plastic litter can also serve as breeding grounds for the vectors of viruses such as Zika and dengue.⁹² Research also suggests that fish contaminated by microplastics can affect human health through food chain accumulation.⁹³

Opportunities and Future Actions

40. *Strengthen biosecurity and scale up the efforts towards protecting and restoring nature:* In order to reduce the risks of future outbreaks of zoonotic diseases, there is urgent need to strengthen biosecurity systems and measures. Such systems and measures help detect, prevent, control, and manage zoonotic pathogens through the improved identification pathways for all novel biological introductions. Furthermore, scaling up efforts towards protecting and restoring nature is essential, firstly through enhanced knowledge base on the connections between zoonotic diseases and environmental integrity, including mapping of environmental factors that create risk for future pathogen transmission. Scaled-up investment is needed in protecting and restoring nature, such as through measures to reduce illegal wildlife trade and markets, and to protect and restore wildlife habitat, while helping to protect communities that depend on wildlife for their food supply and livelihoods.

41. *Capacity development, knowledge and policy approaches for One Health and Planetary Health:* Adopting a 'One Health' approach at all levels of decision-making – from the global to the local – recognizing the complex interconnections among the health of people, animals, plants and our shared environment, and fostering cross-sectoral collaboration is essential for reducing the risks of future outbreaks of zoonotic diseases and ensuring a coordinated approach towards health and environment. It will be important to identify and adopt policies and approaches that can help achieve improved human health while maintaining biodiversity and ecosystems simultaneously. For example, trade in species of wild fauna requires close contact between humans, animals and animal products during the extraction and exchange process, elevating the risk of a zoonotic pathogen crossing species lines. An amendment of wildlife trade laws to build public and animal health criteria into decision making is an example of a One

mining

⁸⁹ Griggs, G. (2017) *Coasts in Crisis, A Global Challenge*, University of California Press

⁹⁰ Jambeck, J.R. et al (2015) 'Plastic Waste Inputs from Land into the Ocean', *Science* 347, no. 6223: 768–71.

⁹¹ UNEP, COBSEA and SEI (2019) *Marine plastic litter in East Asian Seas: Gender, human rights and economic dimensions*, Bangkok, Thailand.

⁹² UNEP, COBSEA and SEI (2019) *Marine plastic litter in East Asian Seas: Gender, human rights and economic dimensions*, Bangkok, Thailand.

⁹³ Ryan, P.G. (2015) 'A Brief History of Marine Litter Research', in *Marine Anthropogenic Litter*, ed. Melanie Bergmann, Lars Gutow, and Michael Klages (Cham: Springer International Publishing), pp. 1–25.

Health approach to wildlife trade. These policies should focus on the improved generation and use of linked environment and health data and decision-support tools, and the monitoring of both health and environmental outcomes.

42. *Addressing air pollution through enhanced actions on nature:* In order to address air pollution issues, there is urgent need to support strategies to reduce and control forest and peat fires, such as the ASEAN Peatland Management Strategy, setting and attaining national targets on the reduction of forest fires, and developing and implementing sustainable forest management protocols. In addition, countries should incentivize the adoption of more sustainable agriculture and land use practices and invest in forest conservation and management as part of a transition towards a green economy. Establishing and extending the coverage of monitoring and surveillance systems to detect pollutants with high health risks and promoting citizen-centred dissemination of air quality information and disclosure of information by the private sector is also needed.

43. *Promoting integrated water resource management (IWRM):* To improve water quality and availability, IWRM needs to be adopted in more countries. IWRM incorporates ecosystem and landscape approaches as well as nature-positive solutions such as: green and natural infrastructure for wastewater treatment; the promotion of greenbelts along riverbanks, agricultural fields and coastlines; less harmful agricultural practices; and enforcement of regulations that protect critical water-reliant and riparian ecosystems and biodiversity.

44. *Collective response towards land-based marine pollution:* In order to address land-based marine pollution, there is urgent need to strengthen a collective response through regional and global mechanisms such as the Regional Seas Programme, as well as through cross-sectoral cooperation including private and public sectors, civil society and academic institutions. Enhanced data collection, monitoring and planning through regional and global mechanisms is also essential to provide the data necessary to make qualified, targeted and evidence-based decisions in the region. Designing science-based, integrated and coherent regulatory frameworks and policies, including regional, national and local action plans and roadmaps, can help to accelerate the sound management of chemicals and waste including plastic waste in order significantly reduce the harmful effects of chemicals of major public health concern.⁹⁴

45. *Apply economic policies and fiscal instruments to reduce pollution:* There has been limited focus on the important role that economic policies, e.g. on trade, investment and finance, should play in global frameworks to reduce plastic pollution, including phasing out plastic production and consumption that is unnecessary, excessive and harmful, and providing incentives for greener alternatives and substitutes. A range of trade-related policy options could be harnessed to help transform the global plastics economy and reduce plastic pollution. Some examples include import tariffs, bans and restrictions on certain types of plastic waste and plastic products, removal of subsidies that promote plastic production and trade, among others.⁹⁵ Furthermore, production, use and disposal of additional chemicals and waste that have resulted due to the COVID-19 pandemic must be addressed in during policy formulation and implementation. Taxes and charges on polluting activities and substances as well as targeted subsidies can create incentives to discourage polluting activities or the use of polluting products and encourage the uptake of less polluting alternatives in a cost-effective way. At the same time, reforming perverse fiscal incentives that drive the use of certain pollutants, such as chemical fertilizers and pesticides, can trigger a shift in behaviour and help reduce pollution.⁹⁶ Fiscal instruments are among the most cost-effective and efficient tools available to reduce pollution and should be considered alongside other policies, including regulatory measures such as emission standards, information tools and awareness raising.

46. *Utilize existing international frameworks and agreements to guide national actions on chemicals and waste:* It is essential to utilize existing chemicals and waste-related multilateral environmental agreements as frameworks that could guide a preparation of comprehensive sets of national policy and legal instruments to achieve sound management of chemicals and waste and to protect biodiversity and human health from pollution. More engagement in International Conference on Chemicals

⁹⁴ See WHO, *Ten chemicals of major public health concern*, https://www.who.int/ipcs/assessment/public_health/chemicals_phc/en/

⁹⁵ Birkbeck, C.D. (2020) *Strengthening international cooperation to tackle plastic pollution: Options for the WTO*, Graduate Institute: Geneva

⁹⁶ UNEP (2020) *Working Paper – Reducing pollution and health impacts through fiscal policies: A selection of good practices*, <https://greenfiscalpolicy.org/reports/unep-study-on-reducing-pollution-and-health-impacts-through-fiscal-policies-a-selection-of-good-practices/>

Management (ICCM) and the sound management of chemicals and waste beyond 2020 will be needed, since very few countries from the region take part in these processes actively. Chemicals-producing countries and manufacturing and trading hubs of products using chemicals, and many countries in this region have technical capacity, knowledge to promote sound management of chemicals and waste without pollution within the region and beyond. Additionally, a number of concrete options exist for WTO Members to work multilaterally to align trade policies to support international efforts to tackle chemicals and plastic pollution.

47. *Leave no one behind through rights-based approaches that address vulnerabilities:* As prerequisites for human health and resilience, it is important for Member States to adopt policy measures which respect, protect and fulfil human rights to a safe, clean, healthy and sustainable environment, including rights to a safe climate, water, clean air, healthy and sustainably produced food, non-toxic environments, and healthy ecosystems and biodiversity. It is key to introduce measures that address inequalities and focus on the protection of the most vulnerable to environmental hazards, such as pollution, which directly threatens rights to clean air and clean water and disproportionately impacts people already living in vulnerable situations. Furthermore, women and girls are often disproportionately affected by the impacts of climate change and other environmental issues, including deforestation, the loss of biodiversity, desertification, pollution, and natural disasters, owing to existing gender inequalities. We must consider these inequalities and recognize the active and meaningful role of women as key agents of change in developing innovative solutions to climate change, clean energy technologies and promoting sustainable and inclusive consumption and production.

D. Nature for Sustainable Food Systems

48. Sustainable food systems⁹⁷ are at the heart of the 2030 Agenda for Sustainable Development, the global commitment to eradicate poverty and hunger while ensuring healthy, prosperous, and fulfilling lives. The UN Secretary-General has identified “making peace with nature” as the defining task of the 21st century and has called for collective action to radically change the way we produce, process, and consume food. In 2021, the UN will convene a Food Systems Summit to raise global awareness and seek global commitments to action to transform food systems that resolve not only hunger but reduce diet-related disease and heal the planet. The Summit will explore ways to boost nature-positive production at scale to meet the needs for healthy and nutritious food while operating within planetary boundaries.

49. The major environmental challenges of climate change, biodiversity loss, and pollution facing Asia and the Pacific and the world, are integrally related with our food systems. We all depend on nature for the production of our food. The wild and cultivated harvests that underpin our food supply and dietary diversity are products of complex interactions and processes of nature, collectively referred to as ecosystem services. These include the natural processes that directly and indirectly bring about genetic diversity, ensure pests are kept in check and crops are resilient to disease, as well as the cycling and fixing of nutrients in agricultural soils, the filtration, circulation and retention of water systems, the break-down of pollutants, and release or sequestration of carbon, and the regulation of weather patterns and climate. The services nature provides are of immense value to our food systems and therefore to the health of our populations, society and to the economy.⁹⁸

50. Ecosystem services cannot be taken for granted. The natural resource base is becoming more fragile and critical natural resources are being lost at an unprecedented rate. As we exploit natural resources beyond sustainable limits, the systems that feed billions of people in the region and around the world are at risk. Climate change is expected to increase the stresses on land and in the oceans, exacerbating existing risks to livelihoods, biodiversity, human and ecosystem health, infrastructure, and food systems. Food supply is projected to become more unstable as the magnitude and frequency of extreme weather events increase.⁹⁹

⁹⁷ A food system incorporates all the elements (environment, people, inputs, processes, infrastructures, institutions, etc.) and activities that relate to the production, processing, distribution, preparation and consumption of food, and the outputs of these activities, including socio-economic and environmental outcomes. See HLPE (2014) *Food losses and waste in the context of sustainable food systems*. A report by the High-Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome 2014.

⁹⁸ The contribution of insect pollinators to agricultural and food supply for example has been valued at around USD 190 billion per year. TEEB (2010) *The Economics of Ecosystems and Biodiversity Ecological and Economic Foundations*. Edited by Pushpam Kumar. Earthscan, London and Washington.

⁹⁹ IPCC (2019; updated Jan. 2020) *Summary for Policymakers - Climate Change and Land: An IPCC Special Report on climate change,*

51. Agrifood systems are major drivers of environmental damage, including an estimated 60% of global terrestrial biodiversity loss, and up to 37% of GHG emissions.¹⁰⁰ The conversion of natural ecosystems to expand agricultural production has led to devastating losses of forests, peatlands, wetlands and mangroves.¹⁰¹ Habitat loss, along with illegal or unregulated trade of wildlife, has increased the probability of viruses leaping from non-human species to humans. A third of agricultural soils are moderately to highly degraded due to erosion, nutrient depletion, acidification, salination, compaction and chemical pollution.¹⁰²

52. A massive shift in agricultural land use patterns has occurred in the Asia and Pacific region as mixed croplands and swidden fields have been converted into monocultures, such as rubber, oil palm, sugar cane and maize, contributing to the degradation of agrobiodiversity and replacing traditionally species-rich agroforestry systems. There has been a dramatic loss of crop genetic diversity as robust landraces have been replaced by relatively few crop varieties.¹⁰³ The use of chemical pesticides has become widespread and is often facilitated through government subsidies.¹⁰⁴ The over- and mis-use of hazardous pesticides risks contamination of water resources and soils, and acute or chronic toxicity to non-target organisms, that can affect the health of farmworkers and consumers, and disrupt pollinators or suppress natural enemies of pests.¹⁰⁵ Declines in the diversity and numbers of pollinator species, such as bees, have significant implications for food security and nutrition, particularly the production of fruits and vegetables.^{106, 107}

53. In Asia and the Pacific, where the majority of the world's smallholder farmers live, women and girls currently produce 60-80% of the food in most developing countries. However, they often do not have equal rights to own, use and control land and natural resources, and have limited access to training and finance, while relying heavily on informal sector work. Climate change and declines in biodiversity, including agrobiodiversity, poses major challenges in food security and livelihoods of women and disadvantaged groups, because they are heavily dependent on biodiversity and natural resources and have limited choices and opportunities. COVID-19 has further exacerbated these vulnerabilities.

54. The Asia and the Pacific region heavily depends on fisheries for food and income.¹⁰⁸ Asia accounts for two-thirds of the total consumption of fish¹⁰⁹ and Oceania has the highest consumption per capita.¹¹⁰ Unsustainable fishing and aquaculture practices lead to a reduction of biomass of both target and by-catch species and destruction of marine and coastal ecosystems, including important nursery and reproductive areas, such as mangroves and coral reefs.¹¹¹ In oceans worldwide, 61% of commercial fish

desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems', <https://www.ipcc.ch/srccl/chapter/summary-for-policymakers/>

¹⁰⁰ IPCC (2019; updated Jan. 2020) *Summary for Policymakers - Climate Change and Land: An IPCC Special Report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems'*, <https://www.ipcc.ch/srccl/chapter/summary-for-policymakers/>

¹⁰¹ It was estimated that in the year 2018 alone 24.6 million hectares of tree cover were lost globally and that 40% of total deforestation has been commodity driven. See: <https://www.globalforestwatch.org/topics/commodities>

¹⁰² FAO (2017) *The future of food and agriculture – Trends and challenges. Annual Report*, <http://www.fao.org/3/i6583e/i6583e.pdf>

¹⁰³ A steady decline of up to 70% in native varieties of plants and crop genetic resources has been observed in the Asia-Pacific region. Loss of diversity increases the risk of losing genetic materials that serve as insurance policies for sustaining food supply and human health. See: IPBES (2018) *Regional Assessment of Biodiversity and Ecosystem Services for Asia and the Pacific*, <https://ipbes.net/assessment-reports/asia-pacific>

¹⁰⁴ UNEP (2019) *Study on the effects of taxes and subsidies on pesticides and fertilizers*, <https://greenfiscalpolicy.org/wp-content/uploads/2020/09/Study-on-the-Effects-of-Pesticide-and-Fertilizer-Subsidies-and-Taxes-Final-17.7.2020.pdf>

¹⁰⁵ WHO & FAO (2016) *International code of conduct on pesticide management: Guidelines on highly hazardous pesticides*, <http://www.fao.org/publications/card/en/c/a5347a39-c961-41bf-86a4-975cdf2fd063/>

¹⁰⁶ Agricultural pesticides with high acute toxicity can affect farm workers preparing, mixing or using pesticides and also by-standers, people entering treated fields, and consumers eating produce too soon after application. Repeated or long-term exposure to highly hazardous pesticides can cause adverse long-term health effects including cancers or developmental disorders. Source: FAO & WHO, (2016) *International code of conduct on pesticide management: Guidelines on highly hazardous pesticides*, <http://www.fao.org/publications/card/en/c/a5347a39-c961-41bf-86a4-975cdf2fd063/>

¹⁰⁷ Risks to human health from agricultural pesticides affect not only farm workers and consumers, their families and communities, but also present a high cost to society and public health care systems. See: UNEP (2013) *Report on the Costs of Inaction on the Sound Management of Chemicals*, <https://wedocs.unep.org/handle/20.500.11822/8412>

¹⁰⁸ FAO, *Contributions of fisheries and aquaculture in the Asia-Pacific region*, <http://www.fao.org/3/ad514e/ad514e04.htm>

¹⁰⁹ UN (2016) 'The Oceans as a Source of Food', Chapter 10 in *First Global Integrated Marine Assessment – World Ocean Assessment I*, <https://www.unep.org/resources/report/first-global-integrated-marine-assessment-world-ocean-assessment-i>

¹¹⁰ FAO, *Contributions of fisheries and aquaculture in the Asia-Pacific region*, <http://www.fao.org/3/ad514e/ad514e04.htm>

¹¹¹ Wilkinson, C. (2008) *Status of Coral Reefs of the World: 2008*. Global Coral Reef Monitoring Network and Reef and Rainforest Research Centre, Townsville, Australia.

stocks are depleted, with 29% overfished.¹¹² In rivers and lakes across Asia and the Pacific, 37% of freshwater species are threatened by overfishing, pollution, infrastructure development and invasive alien species.¹¹³ Furthermore, intensifying coastal development and marine pollution compromises marine and coastal ecosystem services and migratory patterns, echolocation systems and local food chains.

55. Current livestock production practices have a significant environmental impact, including contributing to the conversion to forests and other ecosystems to pasture and to GHG emissions. Intensive livestock production amplifies the risks of diseases emerging and spreading, through the confinement of large numbers of animals in small spaces, narrowed genetic diversity, fast animal turnover and the extensive use of antibiotics in animal feed, which contributes to the emergence of antibiotic-resistant bacteria.¹¹⁴

56. Environmental concerns also extend along the value chain. Food is often processed, packaged, and transported using non-renewable resources.¹¹⁵ Despite the enormous resources that are put into producing food, every year the world wastes about a third of the food it produces. The production of this wasted food globally consumes an estimated 250 km³ of surface and groundwater¹¹⁶, and generates 4.4 billion tonnes of CO₂ equivalent each year.¹¹⁷ Our economic and policy systems are ill-equipped to internalize the damage that is being done to the environment and biodiversity as a result of our unsustainable food systems. A holistic approach is needed that looks beyond the classic focus on production to connect all activities concerned with the food we eat and the various socio-economic and environmental outcomes of these activities.

57. Industrialization and concentration of market share in various global food sectors generate significant corporate lobbying power, which can unduly influence public sector decisions on agricultural and fisheries subsidies, laws regulating food standards, pesticides and genetically modified seeds, as well as trade agreements and the public research agenda. By contrast, the voices of smallholder farmers, the men and women who produce 80% of food in Asia,¹¹⁸ are underrepresented in these policy processes. Many small-scale producers remain poor and food-insecure, curtailing their options in both investment and negotiation to increase returns from their labour. Women farmers' participation in parts of the value chain, such as in producer organizations, is often limited by lack of tenure rights or lack of equal access to education and extension services.¹¹⁹ Indigenous peoples in the region are often marginalized in decision-making processes relating to the farmlands and forests on which they depend for their food. Disadvantaged groups and communities are the most likely to be harmed by current unsustainable practices in food production.¹²⁰

Opportunities and Future Actions

58. *Shift to nature-positive and equitable production systems:* Nature-positive food production systems build resilience through biodiversity, and promote synergies with natural processes to regenerate soils, fertilize crops, fight pests, control erosion, store carbon and provide multiple social benefits. Growing consumer demand for environmentally sustainable and healthier foods are opening market opportunities for organic farming, agroecological approaches, zero-budget natural farming, and agroforestry systems, amongst others. In preparation for the UN Food Systems Summit, dozens of "game-changing" propositions¹²¹ have been put forward by multi-stakeholder platforms for transformative action towards nature-positive food production systems.¹²² These represent initiatives have potential impact at scale, that

¹¹² UNEP (2016) *Food Systems and Natural Resources*. A Report of the Working Group on Food Systems of the International Resource Panel.

¹¹³ IUCN (2009) *The IUCN Red List of Threatened Species*, TM 2009; update Freshwater Fish Facts. Water (Vol. 104).

¹¹⁴ UNEP (2020) *UNEP Foresight brief: Growing popularity of alternate food systems for environment and health*, <https://wedocs.unep.org/bitstream/handle/20.500.11822/32312/FRS15.pdf?sequence=1&isAllowed=y>

¹¹⁵ Grauerholz and Owens (2015), cited in UNEP (2020) *UNEP Foresight brief: Growing popularity of alternate food systems for environment and health*, <https://wedocs.unep.org/bitstream/handle/20.500.11822/32312/FRS15.pdf?sequence=1&isAllowed=y>

¹¹⁶ FAO (2013) *Food Wastage Footprint: Impacts on natural resources. Summary Report*, <http://www.fao.org/3/i3347e/i3347e.pdf>

¹¹⁷ FAO (2017) *Save Food for a Better Climate: Converting the Food Loss and Waste Challenge into Climate Action*. FAO, Rome.

¹¹⁸ FAO (2012) *Smallholders and Family Farmers*,

http://www.fao.org/fileadmin/templates/nr/sustainability_pathways/docs/Factsheet_SMALLHOLDERS.pdf

¹¹⁹ FAO (2018) *Developing gender-sensitive value chains – Guidelines for practitioners*, <http://www.fao.org/3/i9212en/i9212en.pdf>

¹²⁰ Masson-Delmotte, V., et al. (2018) *Global warming of 1.5 C. An IPCC Special Report on the impacts of global warming*, <https://www.ipcc.ch/sr15/>

¹²¹ A 'game changing and systemic solution' is a feasible action, existing or new, based on evidence, best practice, or a thorough conceptual framework that would shift operational models or underlying rules, incentives, and structures that shape food systems, acting on multiple parts of – or across – the food system, to advance global goals which can be sustained over time. UN Food Systems Summit preparatory document https://www.un.org/sites/un2.un.org/files/unfss_at3_synthesis_propositions_round1.pdf.

¹²² These propositions are listed in Annex 1 and outlined on the UN Food Systems website for public discussion:

could provide significant return on investment, and are actionable and sustainable. Furthermore, gender equality and women's empowerment should be promoted, which could simultaneously contribute to environmental protection and biodiversity conservation, people's well-being and health while making a business case for investment in sustainable food systems.

59. *Repurpose agricultural subsidies*: The world spends about USD 700 billion on agricultural subsidies of which USD 530 billion is in the form of direct payment to farmers¹²³ yet only around 15% of this support is for public goods.¹²⁴ In many cases, the support provided by the sector has incentivized farming practices, production systems and commodities that are potentially harmful to the environment, nutrition and health, thereby working against efforts towards a sustainable, resilient and inclusive food system. For instance, GHG emission-intensive commodities (e.g. beef, milk and rice) have received most support worldwide, mostly through price support and coupled subsidies.¹²⁵ Repurposing this support can simultaneously improve the affordability of nutritious diets and equity, strengthen ecosystem services, reduce GHG emissions and deliver economic growth in synergy with other development goals.

60. *Reinvest in nature and shift economic priorities*: Investing in nature is investing in people - in stronger economies and in the futures of our children. Recognizing and valuing in economic terms the often-invisible contributions that nature makes to food systems, and the hidden environmental costs of current food production, as promoted by UNEP's Economics of Ecosystems and Biodiversity (TEEB) Initiative, helps to decision makers reveal where and how agrifood sector goals can be adjusted to maximize environmental and health benefits, and minimize negative impacts. Incentivizing banks, impact investors or others to invest in deforestation-free commodity production and restoration of degraded land is essential, as demonstrated by investment vehicles initiated and supported by UNEP, including the Agri3 Fund and the Restoration Seed Capital Facility.

61. *Promote sustainable consumption*: Promoting healthy dietary diversification and shifting away from resource-intensive, inefficient, and out-of-season foods is another key element for sustainable food systems. There is urgent need to promote awareness amongst consumers, including school children, about food production and supply chains, nutrition, and health, and engage them in reducing food waste. Furthermore, commodity certification and other tools can stimulate innovation by agri-business to move away from practices that drive unsustainable land use change and habitat loss, and towards resource-smart food systems and sustainable practices. Governments also need to design and implement policies that promote the transition to sustainable consumption and production, helping key actors recognize the environmental and climate impact of their decisions. Big data can be leveraged to measure the environmental footprint of consumer choices and spur changes in behaviour.

https://www.un.org/sites/un2.un.org/files/unfss_at3_synthesis_propositions_round1.pdf

¹²³ OECD (2019) Agricultural Policy Monitoring and Evaluation 2019. Paris: OECD Publishing. <https://doi.org/10.1787/39bfe6f3-en>.

¹²⁴ Laborde, D. Mamun, A., Martin, W. and Vos, R. (2019). *Modeling the Impacts of Agricultural Support Policies on Emissions from Agriculture*. International Food Policy Research Institute (IFPRI).

¹²⁵ FAO, IFAD, UNICEF, WFP & WHO (2020) *The State of Food Security and Nutrition in the World 2020. Transforming food systems for affordable healthy diets*. Rome, FAO. <https://doi.org/10.4060/ca9692en>

IV. Nexus Needs

62. The SDGs have often been described as 'indivisible'. For example, section II noted that negative trends in biodiversity and ecosystem health will undermine approximately 80% of the assessed targets related to SDGs 1, 2, 3, 6, 11, 13, 14, and 15.¹²⁶ If linkages and interdependencies between different goals, targets and indicators are not well-considered then there could be unintended negative consequences, and opportunities for synergies and new collaborations may be missed. An integrated, or nexus, approach is therefore promoted by many international organizations, including UNEP. In the context of actions on nature for sustainable development, there is a need for policy makers and planners in sectors as diverse as health, food production, tourism, waste management, water supply, energy use, infrastructure development, gender equality and poverty reduction to first map positive and negative links between different SDGs and then to consider how nature-positive solutions can address not just one problem, but the nexus of systemic challenges.

63. An SDG nexus approach is intrinsically suited to actions on nature for sustainable development, which have long been recognized as typically having multiple benefits that improve over time, as opposed to grey solutions which often address one problem, potentially cause others, and decrease in functionality or value over time without adequate maintenance.

64. As yet, SDG nexuses in relation to environmental stressors and crises, natural functions, and nature-positive solutions are often not well understood. For example, wetlands can provide a range of services to society, such as [carbon sequestration](#), water quality protection, coastal protection, groundwater and [soil moisture](#) regulation, flood regulation and biodiversity support. However, best practice knowledge on how to use a wetland system as a nature-based solution while keeping the wetland healthy over the long term is lacking. Barriers include a gap in understanding on how to assess and mitigate the impacts of climate, demographic and land use changes on natural functions and associated nature-based services.¹²⁷

65. Despite these challenges, emerging research and practice emphasize that nature-positive solutions should be a critical component of integrated SDG achievement and more cost-effective, climate-smart COVID-19 recovery and building back better. This is critical; as discussed previously, there is an environmental component to the majority of social and economic challenges impacting the region in the current pandemic context.

66. For example, in the context of the current health crisis (SDG 3), it has been established that in some contexts, habitat loss and environmental degradation can increase the risk of zoonotic pathogens crossing over from wild animals to humans. Habitat loss can be driven by many factors, including urbanization (SDG 11), agricultural expansion or intensification (SDG 2), unsustainable consumption and production (SDG 12), climate change (SDG 13) and industrialization and pollution (SDG 9). Human-animal pathogen cross-over risks are also present in the livestock and animal husbandry sector, compounded by as the risk of environmental degradation caused by the expansion of pasture lands (SDG 2). Livestock management, in turn, has been linked both positively and negatively to several SDGs including climate change (SDG 13), life on land (SDG 15) and life below water (SDG 14),¹²⁸ again suggesting that nature-based approaches could effectively reduce inter-SDG risks. Utilizing nature-based solutions through each of these different SDGs could mean a more effective approach to reducing zoonotic diseases in the future.

67. At a strategic level, many of the foundations needed to move nexus approaches forward have been laid. In 2016 the Government of Japan committed to an integrated SDG approach that emphasized policy coherence, leaving no-one behind, and eight themes under the 5Ps - people, prosperity, planet, peace, and partnerships. Japan acknowledges that this national development vision will not be

¹²⁶ IPBES (2018) *Regional Assessment Report on Biodiversity and Ecosystem Services for Asia and the Pacific*, <https://ipbes.net/assessment-reports/asia-pacific>

¹²⁷ <https://www.sciencedirect.com/science/article/pii/S0925857417304093>

¹²⁸ <http://www.fao.org/3/CA1201EN/ca1201en.pdf>

achieved if any one of the priority issues is not successfully addressed, requiring SDG measures be implemented in an integrated manner.¹²⁹ UN Sustainable Development Cooperation Frameworks across the region also link development goals under the 5Ps – for example, the Philippines¹³⁰ and Afghanistan – sending the message that SDG coherence is a strong priority in agreements between the UN and Member States.

68. Tools are available that allow Governments and their partners to analyze links between different SDGs, as is research highlighting which links are important in different contexts. However, in Asia and the Pacific, opportunities arising from recognizing SDG nexuses, as well as designing nature-based solutions for integrated or cross-sectoral challenges, are often not yet fully exploited systematically or collaboratively. Once links between SDGs are identified and analyzed, then synergistic policies and actions at the linkages need to be developed and implemented. To develop and implement coherent policies and actions for SDG linkages, governments need all ministries and relevant sectors to participate. This participation will require coordination between all sectors, including but not limited to finance, economy, environment, etc. Similarly, organizations need to cooperate across sectors for planning and progress towards achieving all SDGs, especially the linkages across SDGs.

V. Conclusion

69. Lessons learned from the management of the COVID-19 crisis provide an opportunity to both revisit our interaction with biodiversity and ecosystems, and ‘build back better’ to a more environmentally responsible and equitable world. The crisis has brought about an unprecedented pause to many human activities, including some that have caused significant damage to the natural world and to human health. It has forced us to rethink how societies work; it has also touched our values, including on the need to cooperate more closely across national borders.

70. ‘Greening and bluing’ COVID-19 recovery efforts can increase resilience to future crises by ensuring a healthy environment that supports healthy people. Linking recovery efforts with a clean energy transition, nature-based solutions and the Paris Agreement can show how investments in climate-smart actions for nature will stimulate economic regrowth, create employment opportunities, and increase resilience to a recurrent zoonotic threat. This requires connecting multiple agendas early in planning cycles. Though some promising green recovery policy examples do exist, they have been overwhelmingly implemented by a small group of countries. However, as vaccines continue to be deployed and the need for urgent rescue-type spending diminishes, the impetus for recovery-type spending will rise. This presents perhaps the greatest chance we have had so far to redirect the course of human GHG emissions and align spending with the goals of the 2030 Agenda.

71. The Fourth Forum of Ministers and Environment Authorities of Asia Pacific, with governments, intergovernmental organizations, and other stakeholders including local governments, private sector and civil society, is expected to develop a shared and common vision and recommend options to collaborate towards urgent, transformative, equitable and sustained actions that effectively reshape humanity’s interaction with nature. Policy reforms and investments over the next decade must embrace sustainable consumption and production patterns to simultaneously re-build our economies and address the systemic threats to biodiversity, ecosystem services and human health. The Forum is a unique opportunity to share successful actions, best practices and lessons learnt at the regional level, and to create the basis for future collaboration.

¹²⁹ <https://www.mofa.go.jp/policy/oda/sdgs/effort/index.html>

¹³⁰ <https://philippines.un.org/en/42381-partnership-framework-sustainable-development-pfsd-2019-2023>

**Annex 1: Supplementary information for the background document on
“Strengthening Actions for Nature to Achieve the Sustainable Development Goals in Asia and the Pacific”**

This information document provides examples of existing initiatives in the region, relating to the following action areas:

- A. Nature for Poverty Eradication, Jobs and Economic Prosperity
- B. Nature for Climate
- C. Nature for Human and Ecosystem Health
- D. Nature for Sustainable Food Systems

The initiatives summarized in this document are selected examples from the region. The document is not intended to provide a comprehensive summary of existing initiatives.

A. Selected Examples of Actions on Nature for Poverty Eradication, Jobs and Economic Prosperity	
Geographical Scope	Initiative
Pakistan	In May 2020, the Prime Minister of Pakistan approved a “Green Stimulus” package, focused on: 1) job creation; and 2) ecosystem restoration. Interventions include planting trees, reviving protected areas and improving water and sanitation, targeting unemployed youth, women and daily wage earners who are out of jobs and migrating to rural areas. The initiative has already led to 65,000 daily wage jobs across the country in nurseries, plant care, protection of natural forests, honeybee farming and fire-fighting activities. Additionally, the initiative includes the establishment of a National Parks Service and support to stormwater management, rainwater harvesting, and solid and liquid waste management and hospital waste disposal, with more potential to create employment opportunities. This is supported by “Debt for Nature” swaps, where Pakistan’s burgeoning debts with other countries are renegotiated on the basis of this ongoing initiative. This nature-positive Green Stimulus to rebuild the economy and stimulate sustainable growth while employing youth and will allow Pakistan to not only come out of the economic recession but also build back better and greener. ⁱ
New Zealand	In May 2020, the Government of New Zealand launched NZD 1.1 billion investment to create 11,000 environment jobs, including jobs in environmental projects, biosecurity, enhancing biodiversity on public and private land, and a contribution to the Department of Conservation’s Jobs for Nature Fund. The initiative, in partnership with local governments and farmers, is designed specifically to respond to the impacts of COVID-19, and the investment made will contribute to improving the health of the country’s waterways and support economic recovery. The package allows businesses considering redundancies and downscaling to redeploy their staff on environmentally focused activities. ⁱⁱ
Republic of Korea	Current recovery efforts can build on existing innovations. Republic of Korea has issued a sovereign sustainable bond of USD 500 million, aimed at supporting the green agenda and social development. Korea’s corporates and financial institutions are followed suit, aiming to tap Environmental, Social and Governance (ESG) capital globally. In 2019, Korean’s sustainable bonds in USD and Euro reached a total USD 5.54 billion.

Singapore, Malaysia, Indonesia	The Monetary Authority of Singapore (MAS) has included banks' sustainability practices in its supervisory assessment. It has encouraged local banks to adopt industry standards and to enhance ESG disclosure, including completing ESG assessments for their corporate clients. Malaysia's central bank, Bank Negara Malaysia (BNM), has plans for a 'principle-based' green taxonomy for banks and insurers, to identify and label economic activities that could contribute to climate change objectives. Indonesia has taken green bonds to its heart, with two landmark green sukuk transactions in 2018 and 2019 respectively, with IDR 27.4 trillion (USD 2 billion) outstanding. ⁱⁱⁱ
Viet Nam	Restoring degraded watersheds can greatly increase supplies of fresh water globally, and the restoration of forests and seagrass meadows can capture carbon to mitigate climate change. Red Cross investments in mangrove restoration in Viet Nam were estimated to absorb carbon worth USD 218 million, assuming a price of USD 20/ton CO ₂ e. Additional income for coastal communities through an increase in yields of aquaculture products was estimated at USD 344,000 – USD 6.7 million. ^{iv}
China	Recognizing the need to move beyond conventional economic measures like GDP, China is working to develop and report a measure of Gross Ecosystem Product (GEP), a measure that summarizes the value of the contributions of nature to economic activity. The calculation of GEP, applied in Qinghai Province (which is part of the 'water tower' of Asia, being the source of the Mekong, Yangtze and Yellow Rivers) indicated that nearly two-thirds of GEP derives from water-related values. GEP was greater than GDP in Qinghai in 2000 and was three-fourths as large as GDP in 2015, as its market economy grew. Large-scale investment in restoration resulted in improvements in the flows of ecosystem services measured in GEP (127.5%) over this period. China is using GEP to guide investments in ecosystem conservation and restoration efforts, and achieve transformation to inclusive, green growth. ^v
China, India	As part of the Natural Capital and Accounting and Valuation of Ecosystem Services (NCAVES) project, work is underway to align measurement of GEP with the System of Environmental-Economic Accounting Experimental Ecosystem Accounting (SEEA-EEA). The NCAVES project operates inter alia in China and India to advance the knowledge agenda on ecosystem accounting with a view to: improving the measurement of ecosystems and their services (both in physical and monetary terms) at the (sub)national level; mainstreaming biodiversity and ecosystems at (sub)national level policy planning and implementation; and contributing to the development of internationally agreed methodology. The provision of these data can be informative for decision-making in that it reveals trends in ecosystem extents, their condition, supply and use of ecosystem services, which can signal to decision-makers the target and impact of proposed policy interventions. In China, the development of accounts by National Bureau of Statistics and Guangxi Bureau of Statistics is being used, in collaboration with the Chinese Academy of Sciences to inform calibration of eco-compensation schemes in the Xijiang River Basin. In India, the focal Ministry of Statistics and Programme Implementation is leading development of accounts at the national scale, and a pilot is underway in Karnataka to develop a suite of ecosystem service accounts to inform land-use planning decisions.
India	To expedite the transition of the country from a linear to a circular economy, the Government of India has formed 11 committees which will prepare comprehensive action plans and ensure its implementation for transitioning from a linear to a circular economy in their respective focus areas. The 11 focus areas include end-of-life products, recyclable materials and wastes that either continue to pose considerable challenges or are emerging as new challenge areas that must be addressed in a holistic manner. The focus areas are municipal solid waste and liquid waste, scrap metal (ferrous and non-ferrous), electronic waste, lithium ion (li-ion) batteries, solar panels, gypsum, toxic and hazardous industrial waste, used oil waste, agriculture waste, tyre and rubber recycling, and End-of-life Vehicles (ELVs).
India	The National Biodiversity Finance Plan of India has identified 12 country specific financial solution to bridge the national biodiversity finance gap. Recognizing that the public finance is going to be the mainstay for biodiversity financing, mainstreaming biodiversity in public finance (agriculture sector) is one of key solutions identified. India has also developed a draft policy framework on India's Blue Economy which envisages the optimal utilization of all sectors of the maritime domain, (living, non-living resources, tourism, ocean energy, security etc.) for sustainable development of coastal areas.

India	The Government of India has developed the SDG India Index which is intended to provide a holistic view on the social, economic and environmental status of the country and its States and Union Territories (UTs). It has been designed to provide an aggregate assessment of the performance of all Indian States and UTs, and to help leaders and change makers evaluate their performance on social, economic and environmental parameters.
Bangladesh, Lao PDR, Myanmar, Nepal, Indonesia	The Poverty Environment Action for the SDGs initiative (PEA) ^{vi} , a joint European Union (EU), Austrian Development Agency (ADA), Norwegian Ministry of Foreign Affairs, Swedish International Development Cooperation Agency (SIDA), UNDP and UNEP undertaking, has aimed at aligning finance and investment with poverty, environment and climate objectives to accelerate SDG implementation. In Asia and the Pacific, the programme is working with Bangladesh, Lao PDR, Myanmar, Nepal, and Indonesia to develop tools and methodologies to integrate poverty and the environment into national and provincial planning and budgeting processes, and to mobilise and align private financing for the SDGs. Recent work and tools include, among others: support to establishing a National Environment Management Fund (EMF) in Myanmar; a Guidance book on Climate Change Budget Tagging at Sub-National Level and Study on Gender Responsive Climate Change Budgeting working with the Ministry of Finance in Indonesia; and an assessment report on instituting blue bonds in Bangladesh working with the National Planning Commission. In addition, a study is being undertaken by PEA and the Asian Development Bank (ADB) to identify opportunities and challenges for investment towards a sustainable blue economy in Asia and the Pacific.
Bangladesh, Cambodia, Viet Nam	The project 'EmPower: Women for Climate Resilient Societies' ^{vii} of UNEP and UN Women, funded by the Swedish International Development Cooperation Agency (Sida), accelerates the transition from fossil fuels towards clean energy sources by supporting women entrepreneurs and enterprises using renewable energy for income generating activities in Bangladesh, Cambodia and Viet Nam. The initiative works simultaneously with actions on policy (gender responsive energy policies, provincial action plans, approach papers), on-the-ground projects (capacity building and access to financial instruments), and sharing knowledge locally, nationally and regionally making the business case for women's leadership in renewable energy. Establishing climate-resilient livelihood options for women and vulnerable communities address the severe impact of COVID-19 while contributing to climate resilient development. The project also facilitates the collection of data gender and environment disaggregated by inter alia, sex, age, and disability and lessons learned from Member States and stakeholders in Asia Pacific, in line with the UNEA Resolution UNEP/EA.4/L.21.
Global	Through the Partnership for Action on Green Economy (PAGE), together with ILO, UNDP, UNIDO and UNITAR, UNEP is supporting countries to develop integrated policies that address the immediate challenges of creating jobs and long-term prosperity as envisioned in the Agenda 2030. To support policymakers around the world, PAGE has produced a Green Jobs Training Guidebook, focusing on how to measure and model social and employment outcomes of climate and sustainable development policies ^{viii} . Further, UNEP supports countries on green fiscal policy reform through PAGE and through the Green Fiscal Policy Network, a collaboration between UNEP, the IMF and GIZ for knowledge exchange and country dialogue on green fiscal policy experiences and best practices. This work is supported through UNEP Finance Initiative's Responsible Banking and Positive Impact Finance. ^{ix} In addition, through the One Planet Network, a multi-stakeholder partnership for sustainable development has been formed to implement the commitment of the 10 Year Framework of Programmes on Sustainable Consumption and Production Patterns. It generates collective impact through its 6 programmes in tourism, food systems, buildings and construction, consumer information, lifestyles and education, and public procurement. ^x

B. Selected Examples of Actions on Nature for Climate

Geographical Scope	Initiative
China, Singapore	Countries in the region are piloting a range of ecosystem-based approaches aimed at tackling climate change hazards in urban settings. The “sponge city” approach uses green infrastructure such as systemically designed wetlands, trees and parks to enhance the retention of water and reduce both flooding and drought risks. China and Thailand are piloting this sponge city approach as an ecologically friendly alternative to traditional flood defenses and drainage systems. In China, Wuhan was one of the country’s first 16 sponge cities. Similarly, the Singapore Active, Beautiful, Clean Waters (ABC Waters) Programme aims to transform canals, drains, and reservoirs into clean flowing rivers, streams, and lakes that blend naturally into the urban environment and help to reduce climate hazards, such as flooding. Following the first 5 year period (2007-2011), the programme has led to a range of benefits: the flood-prone area has been reduced from 3200 ha to 32 hectares, the public are willing to pay higher prices for properties in precincts with ‘green infrastructure’, water costs have been reduced by USD 390.68 million annually, and communities are encouraged to take ownership of Singapore’s waterways and waterbodies. ^{xi}
India	In Kerala, India, an ecosystem-based disaster risk reduction (DRR) programme is focused on developing capacity to undertake ecosystem restoration for DRR as part of the Mahatma Gandhi Rural Employment Guaranteed Scheme, a nationwide programme which employs 2.6 million women. The project entails developing a handbook and undertaking training on ecosystem restoration at local level for significant disaster risk reduction interventions at scale, that also work to alleviate poverty, build climate resilience, and mitigate GHG emissions.
India	UNEP is supporting countries in implementing increasingly more ambitious Nationally Determined Contributions (NDCs) to the Paris Agreement that cover both mitigation and adaptation, are aligned with the goals agreed under the UNFCCC, and are compatible with and supportive of national development priorities. The State of Bihar recognizes the need to play a more proactive role in supporting India’s NDC targets and global efforts in GHG mitigation. Bihar has embarked on an ambitious journey to move to a climate resilient and low carbon development pathway in partnership with UNEP. Minimizing carbon emissions must be further and better embedded with the socio-economic dynamic of the state, in which UNEP will provide critical support. Invoking sustainability in the developmental prerogatives of the state can not only increase the local wellbeing but also strengthen long-term economic growth prospects.
Bhutan, Cambodia, Lao PDR, Myanmar	UNEP is implementing a project entitled, ‘Building climate resilience of urban systems through EbA in Asia and the Pacific region’, through which Bhutan, Cambodia, Lao PDR and Myanmar are being supported in implementing ecosystem-based approaches to adaptation (EbA) as a cost-effective approach to reduce the vulnerability of urban and peri-urban communities to climate change. The vulnerability of these communities is reduced by protecting, maintaining and rehabilitating priority ecosystems such as wetlands, forests and agroecological systems. ^{xii}
Tuvalu	With support from the Green Climate Fund and UNDP, Tuvalu is building coastal resilience in three of the country’s nine inhabited islands. ^{xiii} The Tuvalu Coastal Adaptation Project (TCAP) is aiming to protect reduce the impact of increasingly intensive wave action on key infrastructure, building on upon existing initiatives and using a range of measures, such as ecosystem initiatives, beach nourishment, and grey infrastructure options. National capacity for resilient coastal management will also be developed, and additional coastal adaptation finance catalyzed.
Global	Since 2010, UNEP has accessed financing for 42 EbA projects for 39 countries globally, securing US\$240 million in grant finance. In 2021, UNEP and the International Union for Conservation of Nature (IUCN) launched the International Climate Initiative (IKI)-supported Global Fund for Ecosystem-based Adaptation, which provides seed capital for innovative EbA ^{xiv} and is worth €20 million over 2020-2024. The Fund aims to encourage ‘catalytic’ initiatives to help overcome barriers for upscaling EbA, address the gaps in knowledge and planning for EbA, and to increase access to public and private funding for interventions.

Global	UNEP and the UN-REDD Programme are launching the 1 Green Gigaton Challenge at UNEA-5. ^{xv} The short-term goal is to secure the equivalent of a gigaton in GHG emission reductions through private and public sector investments in nature, with sustainable forest management, forest conservation and landscape restoration as priorities. The 1 Green Gigaton Challenge already includes 20 founding partners, including leading private sector companies, national governments, and civil society. By 2025, the aim is to expand the partnership to 60 members and secure the equivalent of 5 gigatons in investments.
Global	The Global Peatlands Initiative ^{xvi} , led by 13 founding members, was established at the UNFCCC COP in Morocco in 2016 to save peatlands as the world's largest terrestrial organic carbon stock. The current GHG emissions from drained or burned peatlands are estimated to amount up to 5 percent of the global carbon budget. GPI partners are working together within their respective areas of expertise to improve the conservation, restoration, and sustainable management of peatlands, including in Indonesia and other countries with peatlands. One of the first outputs of the Global Peatlands Initiative will be a global assessment, which will focus on the status of peatlands and their importance in the global carbon cycle. It will also examine the importance of peatlands for national economies.

C. Selected Examples of Actions Nature for Human and Ecosystem Health

Geographical Scope	Initiative
India	Environment and Health Initiative in India is a collaborative effort of the Government of India, WHO and UNEP and is supported by leading expert organizations from India. In partnership with WHO and UNEP, this initiative is led by two key ministries namely the Ministry of Environment, Forest and Climate Change and the Ministry of Health and Family Welfare, and it will delve on issues related to impacts of environmental factors on human health. In the first meeting of the cross-sectoral steering committee held in December 2020, four action areas identified for implementing actions: i) awareness raising; ii) evidence generation; iii) capacity building; and iv) mitigation action.
India	In alignment with the National Clean Air Programme (NCAP), UNEP is closely working with the Indian Institute of Technology (IIT) Kanpur and other partners in the Agra city of Uttar Pradesh to aid in achieving the overarching goals under the NCAP. These goals focus on: Knowledge and Database Augmentation; Knowledge Strengthening; and Mitigation Actions. This UNEP- Climate and Clean Air Coalition (CCAC)-led partnership contributes to multiple measures in Agra's Action Plan including tackling emissions from combustion of biomass, crop residues and garbage, municipal solid waste, wastewater, industrial emissions, and taking steps to control air pollution including monitoring, modelling, management, and awareness raising. UNEP, together with CCAC, is developing a regular assessment product (the Air Quality Progress Report), in close collaboration with the Central Pollution Control Board (CPCB). The Report will provide effective communication on drivers, pressures, status, impacts and policy response, and coordination among actors to improve air quality, targeting policy and decision makers, in direct support of India's NCAP implementation.
Cambodia, Lao PDR	The World Conservation Society (WCS), through the WCS Health Programme is working with countries in Southeast Asia in addressing health concerns related to the spread of disease from the movement of wildlife in the illegal trade chains across the region. With support from the Programme, the first surveillance systems for wildlife mortality and diseases have been established in Cambodia and Lao PDR, and research is being conducted on the risk of zoonotic disease transmission from bushmeat consumption.
China, India	One Health is an approach that proactively engages different disciplines, such as human medicine, veterinary medicine, and environmental health sciences, to attain optimal health for people, animals and the environment. Current COVID-19 initiatives that feature One Health responses include the India COVID-19 Emergency Response and Health Systems Preparedness Project ^{xvii} and the Emerging Infectious Diseases Prevention, Preparedness and Response Project in China. ^{xviii}
Regional	Countries have recognized the need to focus on land-based marine pollution, addressing both nutrients as well as marine litter, through regional and global mechanisms such as the Coordinating Body on the Seas of East Asia (COBSEA) ^{xix} , Northwest Pacific Action Plan

	(NOWPAP) and the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA). In particular, the Regional Seas programmes, such as COBSEA and NOWPAP, play an essential role in facilitating concerted actions among Member States at the regional level. COBSEA has organized capacity building workshops targeted for government officials for improved national monitoring and assessment programmes on marine plastic litter and microplastic, in line with UNEA Resolutions ^{xx} , in partnership with the Global Partnership on Marine Litter (GPML) and the GPA.
Regional	As chair of the Asia-Pacific Regional Forum on Health and Environment for 2020-2024, Indonesia, with co-chairs from the Ministry of Health and Ministry of Environment and Forestry, contributed to the United Nations Environment Assembly 3 Resolution 3/4 on Environmental Health. Indonesia, with the support of WHO SEARO, WHO WPRO and UNEP, will also host the 5 th Regional Forum in 2022. The former chair country, the Philippines, led the signing of the Manila Declaration, which forms the basis of the Asia Pacific contribution to the above UNEA resolution on environmental and health. ^{xxi} The Manila Declaration, including the commitment from Member States on emerging policy priorities relevant to the Sustainable Development Goals, highlights key issues such as antimicrobial resistance (AMR) and the need to address through a One Health approach the unsafe management of healthcare wastes and wastewater which could be sources of antimicrobial resistant organisms and antimicrobial resistant genes.
India, Sri Lanka and Mekong region	Plastic pollution has drawn much attention, and numerous initiatives have emerged in last few years to reduce it. The project 'Promotion of action against marine plastic litter in Asia and the Pacific (CounterMEASURE II)' is led by UNEP and intends to generate scientific knowledge on plastic pollution in the Ganges, Mekong and selected rivers in Sri Lanka, in order to inform policy and decision-making processes at local, national, regional and global levels. With the Convention on Migratory Species (CMS) Secretariat, the project has also launched efforts to understand impacts of plastic pollution on freshwater migratory species such as Ganges river dolphin and Mekong Giant Catfish.
Southeast Asia, India	The project, 'Reducing marine litter by addressing the management of the plastic value chain in South-East Asia' (SEA Circular), coordinated by UNEP and COBSEA, focuses on the following: promoting market-based solutions and appropriate regulatory and fiscal incentives; strengthening the scientific -basis for decision making; creating outreach and public awareness for behaviour change; and regional networking for coherent action and knowledge exchange. UNEP also supports India to engage globally on this issue of marine pollution under the 'Indo-Norway Marine Pollution Initiative'.
Global	The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), as part of its work programme for 2019-2030, will undertake a thematic assessment of the interlinkages among biodiversity, water, food and health (known as a nexus assessment) ^{xxii} , which will examine the interlinkages among the SDGs related to food and water security, health for all, protecting biodiversity on land and in the oceans and combating climate change. The assessment will use a nexus approach to examine interlinkages between biodiversity and issues such as agricultural productivity, nutrition, pest control, water quality, infectious diseases, mental and physical health and climate mitigation and adaptation, with a view to providing policy-relevant and useful information to users and managers regarding the development of policies and actions in relevant sectors.
Cambodia, Thailand, Vietnam	National ecosystem assessments (NEAs) provide countries with an up-to-date, comprehensive and critical synthesis of knowledge on biodiversity and ecosystem services framed around key policy questions. Ongoing National Ecosystem Assessments are being carried out by Viet Nam, Cambodia, Thailand, and other countries around the world and include exploration of links between ecosystems and human health and well-being. The UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) hosts the National Ecosystem Assessment Initiative (NEA Initiative) which currently supports 12 countries conducting NEAs by building capacity, facilitating knowledge exchange and compiling lesson learned,
Global	Member States supported by UNEP are considering a global response to the threat of marine litter and microplastics, a need identified by the third and fourth sessions of the United Nations Environment Assembly. These calls for a global response were echoed by the 187

	Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal which, in 2019 and among other measures , added new plastic waste entries to the Convention with the objectives of enhancing the control of the transboundary movements of plastic waste and strengthening their environmentally sound management. Partnerships such as the Global Partnership on Marine Litter (GPML), using evidence-based approaches, can contribute towards the creation of targets for reducing pollutants from source to sea.
Global	To reduce the impact that many chemicals and waste have on biodiversity and ecosystem loss, the effective implementation of existing chemicals and waste multilateral environmental agreements is crucial. This by extension includes future arrangements of the Strategic Approach to International Chemicals Management (SAICM) and the sound management of chemicals and waste beyond 2020, informed by lessons learned since 2006. SAICM’s strength lies in its unique and inclusive voluntary multi-stakeholder and multi-sectoral nature. This structure has provided a valuable platform for government and non-government actors to openly discuss the sustainable management of chemicals and waste. The COVID-19 pandemic has highlighted the need for continued efforts to implement legally binding agreements and for a strong policy framework for beyond 2020 to protect human health and the environment from chemicals and waste, while taking public health pandemics into greater consideration.
D. Selected Examples of Actions Nature for Sustainable Food Systems	
Geographical Scope	Initiative
China, India, Indonesia, Malaysia, Thailand	In order to support efforts towards making the economic case for a shift towards sustainable food systems, UNEP, through the TEEBAgrifood programme ^{xxiii} , is working with governments and businesses in China, India, Indonesia, Malaysia and Thailand to reveal the economic value of ecosystem services and biodiversity in agri-food sectors and evaluate the pathways for change.
Philippines	Efforts have been made to build resilient agroecological food systems in the Philippines. For example, after Typhoon Haiyan an estimated 44 million trees were damaged or destroyed, affecting around 1 million coconut farmers. FAO with partners and communities provided support to coconut agroforestry systems following the typhoon, including measures such as diversification of coconut areas, establishment of community seed production and nurseries, contour farming on slopes, and climate-smart farmer field schools. ^{xxiv} These coconut-based farming systems (CBFS) projects have helped more than 35,000 households to restore their farms, improve their productivity, and reduce the risks of pests and disasters.
Regional	The Sustainable Rice Landscapes Initiative, launched in 2018, is a consortium of public, private and civil society partners, bringing together technological, ecological, policy and market-led approaches to the challenges of rice sustainability. The initiative aims to harness multiple opportunities to meet the growing global demand for sustainable rice, using a public-private partnership approach towards achieving SDGs. Building on the efforts of the Sustainable Rice Platform to drive transformative change in the rice sector, new projects are being developed in Asia for funding under the GEF-7 Global Impact Programme on Food Systems, Land-use and Restoration. The projects will support national level efforts towards sustainable management of rice-based production landscapes through collaborative action by governments, value chain actors and multilateral organizations and mainstreaming of sustainable best practice at farm and policy levels.
Regional	To safeguard habitats that are critical to the life cycles of important fisheries resources, a UNEP/GEF project has established a system of fisheries refugia in the South China Sea and Gulf of Thailand that focuses on critical links between fish stocks and their habitats. Along with enhancing and securing important biodiversity in the region, the project has improved community-based management of fisheries and critical marine habitats, building upon cross-sectoral coordination for integrated fisheries and environmental management.

Global	Some companies are leading a transition to more sustainable food systems. There is a growth in demand for eco-certified food products, and consumers are increasingly engaged in the public debate around food systems. This is helping to shape a business response. In relation to forests, 484 companies have sustainable commodity commitments to invest in deforestation-free agricultural commodity production and supply chains. ^{xxv} Pilot projects in Viet Nam are promoting organic certification and ‘payments for ecosystem services’ (PES) to incentivize farmers to conserve and restore mangroves, and practice integrated mangrove-shrimp farming, with the potential to increase farmer incomes, product diversity, and disease resilience. ^{xxvi}
Global	Furthermore, new financial mechanisms such as land-use securities, green bonds, green stocks are being developed including facilities like the &Green Fund, established by UNEP, IDH Sustainable Trade Initiative and Norway's International Climate and Forest Initiative (NICFI) in 2017. It aims to catalyze more than USD 2 billion in investments to protect, conserve and restore 5 million hectares of tropical forests using a landscape approach, and in June 2020 agreed a combined USD 40 million in loans to support sustainable palm oil production and low emissions agricultural practices. ^{xxvii}

ⁱ <https://www.thethirdpole.net/2020/05/04/pakistans-green-stimulus-to-combat-COVID-19-protect-nature/>

ⁱⁱ <https://www.beehive.govt.nz/release/11-billion-investment-create-11000-environment-jobs-our-regions>

ⁱⁱⁱ https://cib.bnpparibas.com/sustain/green-finance-what-about-asia_a-3-3370.html

^{iv} https://cdn.gca.org/assets/2019-12/RoleofNaturalEnvironmentinAdaptation_V2.pdf

^v <https://www.pnas.org/content/117/25/14593>

^{vi} <https://pea4sdgs.org/>

^{vii} <https://www.empowerforclimate.org/en>

^{viii} <https://www.un-page.org/resources/green-jobs/green-jobs-training-guidebook>

^{ix} <https://www.unepfi.org/banking/bankingprinciples/>; <https://www.unepfi.org/positive-impact/positive-impact/>

^x <https://www.oneplanetnetwork.org>

^{xi} https://cdn.gca.org/assets/2019-12/RoleofNaturalEnvironmentinAdaptation_V2.pdf

^{xii} <https://www.unenvironment.org/explore-topics/climate-change/what-we-do/climate-adaptation/ecosystem-based-adaptation/urban>

^{xiii} <https://www.greenclimate.fund/project/fp015>

^{xiv} <https://www.unenvironment.org/news-and-stories/press-release/unep-iucn-launch-new-eu20m-programme-ecosystem-based-adaptation>

^{xv} <https://www.unep.org/explore-topics/forests/what-we-do/green-gigaton-challenge>

^{xvi} <https://www.globalpeatlands.org/>

^{xvii} <https://projects.worldbank.org/en/projects-operations/project-detail/P173836>

^{xviii} <https://projects.worldbank.org/en/projects-operations/project-detail/P173746>

^{xix} <https://www.unep.org/cobsea/resources/policy-and-strategy/cobsea-strategic-directions-2018-2022>

^{xx} UNEA Resolution 4/12, UNEA Resolution 4/7, UNEA Resolution 3/7, UNEA Resolution 2/11 and UNEA Resolution 1/6

^{xxi} <https://emb.gov.ph/wp-content/uploads/2021/02/Phil.-International-Commitments-on-Environment-and-Natural-Resources-Roadmaps-and-Updates.pdf>

^{xxii} <https://ipbes.net/nexus>

^{xxiii} <http://teebweb.org/our-work/agrifood/>

^{xxiv} <http://www.fao.org/3/i5177e/i5177e.pdf>

^{xxvi} <https://panorama.solutions/en/solution/shrimping-horizons-how-shrimp-farmers-are-saving-thousands-miles-mangrove-vietnam>

^{xxvii} <https://www.andgreen.fund/news/>