



# TRANSATLANTIC VISION 2030 Renewing the partnership

Stimulating debate through thought papers

## A Transatlantic Partnership for Sustainable Development?

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### APPENDIX 1

#### Key challenges of the 21st century based on Global Scientific Assessments

A quote from GEO 6 is probably a proper base for considerations addressed in this part of our contribution: “A healthy environment is both a prerequisite and a foundation for economic prosperity, human health and wellbeing”.<sup>1</sup>

Environmental risks for humanity are increasingly perceived by the public and private sector. Each year the **World Economic Forum** publishes a **Global Risks Report**<sup>2</sup> that is based on perception of global risk amongst decision makers from the public and private sectors, academia and civil society. In 2019 five of the eight top risks in terms of both impact and likelihood include the environmental risks – extreme weather events, failure of climate change mitigation and adaptation, natural disasters, biodiversity loss and ecosystem collapse, and man-made environmental disasters. Additionally, environmental risks are seen to interact substantially with economic and conflict risks.<sup>3</sup>

Since 2018, **global science** initiated and organised by UN provided even clearer insights into the major challenges of the 21<sup>st</sup> century, in the form of complementary global assessment reports including the Global Environment Outlook 2019, the Global Resources Outlook 2019<sup>4</sup>, the IPCC 2018 special report on the impacts of global warming of 1.5°C<sup>5</sup> and the IPBES Global Assessment Report on Biodiversity and Ecosystem Services 2019<sup>6</sup>.

All global assessment reports provide detailed insights into problematic impacts and their drivers today; all reports provide some level of projection of necessary changes to achieve a more sustainable future; and all reports outline governance principles to make those changes reality. While the reports focus on different specific areas of sustainable development, **clear common conclusions can be drawn from all reports** (non-exhaustive list):

- 1) The challenge of negative environmental change has not only been **increasing** but **accelerating in the last decades**. The challenge is unprecedented in human history and

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<sup>1</sup> <https://www.unenvironment.org/resources/report/geo-6-global-environment...>

<sup>2</sup> <https://www.weforum.org/reports/the-global-risks-report-2019>

<sup>3</sup> <https://www.weforum.org/reports/the-global-risks-report-2019>

<sup>4</sup> <https://www.resourcepanel.org/reports/global-resources-outlook>

<sup>5</sup> <https://www.ipcc.ch/sr15/>

<sup>6</sup> <https://bit.ly/2yUbA7W>

- bears extreme risks for human wellbeing around the world. Impacts on human safety are already perceivable and will accelerate **to dangerous levels very soon**. Causes and impacts of environmental change are highly **unequal around the world**.
- 2) Climate change, biodiversity loss, and the unsustainable use of resources **can still be mitigated** to avoid reaching tipping points of global catastrophe; **the investment need for action is clearly lower than the cost of inaction**.
  - 3) Doing so **requires transformative change**. The solution is not found in remedying current economic systems of production and consumptions, we need to **change the fundamentals**.
  - 4) Transformative change needs to **start immediately**, and **trends must be turned around before 2030** to avoid irreversible levels of impact.
  - 5) **Innovation and investments** needed for the sustainable transition have wide co-benefits that are very likely to lead to **better economic progress** underpinned by a global innovation wave and close cooperation.
  - 6) To avoid dangers and reap the economic potential of the transition, **global governance and institutions need to improve**. Countries must cooperate more closely, and so need sectors. **“Environmental” action can no longer be a silo**, but must become a priority across health, economic, financial, industrial and technological decision makers.
  - 7) Better governance has to solve, among others, **central tasks** highlighted across all reports:
    - a. Economic governance must modernize their calculation and use of ‘prices’ and ‘costs’. **Prices of products and services** must move to **incorporate environmental and health costs**, and other so called “externalities” across value chains.
    - b. The world needs to agree a common understanding of **practicable targets and indicators for sustainable production and consumption**. The 1.5°C target for limiting global warming is an important start and similarly clear targets must be set for all those areas that crucial for **humanity’s safe operating space**. Ideally, these targets would **cover** all fundamental impacts, such as **air pollution or water stress**, as well as **link to their causes, such as material use**.
    - c. International and national governance must **reform harmful policies and subsidies** that are currently causing high adverse impacts.

**More specifically to current impacts and drivers, the reports present the following key facts** (short summary as per own selection):

**The Global Environment Outlook 2019 (GEO-6)** lays out that:

- Past and present greenhouse gas emissions have already committed the world to an extended period of climate change.
- Air pollution, currently the cause of between 6 and 7 million premature deaths per year, is projected to still cause between 4.5 million and 7 million premature deaths annually by mid-century.
- Fresh water and oceans are too often overexploited, poorly managed and polluted. Approximately 1.4 million people die annually from preventable diseases, such as diarrhoea and intestinal parasites, that are associated with pathogen-polluted drinking water.
- The harmful impact of inappropriate use of pesticides, heavy metals, plastics and other substances are of significant concern, as such compounds appear in alarmingly high levels in our food supply.
- Marine plastic litter, including microplastics, occurs at all levels of the marine ecosystem and also appears in fisheries and shellfish at alarming levels and frequency.

- Land degradation is an increasing threat for human well-being and ecosystems, especially for those in rural areas who are most dependent on land for their productivity. Land degradation hotspots cover approximately 29 per cent of land globally, where some 3.2 billion people reside.
- Biodiversity loss from land-use change, habitat fragmentation, overexploitation and illegal wildlife trade, invasive species, pollution and climate change is driving a mass extinction of species, including critical ecosystem service providers, such as pollinators.
- The social and economic costs are inequitably distributed, often being borne by the poorest and most vulnerable in society.

#### **IPCC 2018 special report on the impacts of global warming of 1.5°C:**

- Likely impacts in a 1.5°C world include more severe droughts, more heavy rain events due to tropical cyclones, and flood hazards. Although significant at 1.5°C warming, the impacts at 2°C would be much more severe.
- Another important impact is sea level rise. By 2100, global mean sea level rise is projected to be around 0.26 to 0.77 metres at 1.5°C, ca. 0.1m lower than at 2°C.
- Sea level rise will continue beyond 2100 even if global warming is limited to 1.5°C in the 21st century. Marine ice sheet instability in Antarctica and/or irreversible loss of the Greenland ice sheet could result in multi-metre rise in sea level over hundreds to thousands of years.
- Increasing warming amplifies the exposure of small islands, low-lying coastal areas and deltas to the risks associated with sea level rise for many human and ecological systems, including increased saltwater intrusion, flooding and damage to infrastructure.
- Moreover, global warming damages biodiversity and ecosystems, including species loss and extinction. Of 105,000 species studied, 9.6% of insects, 8% of plants and 4% of vertebrates are projected to lose over half of their geographic range for global warming of 1.5°C (in comparison to double the loss at 2°C).
- Global warming involves risks to health, livelihoods, food security, water supply, human security, and economic growth, again significantly more at 2°C than at 1.5°C. For example, we will see reductions in yields of maize, rice, wheat, and potentially other cereal crops, particularly in sub-Saharan Africa, Southeast Asia, and Central and South America.
- Global warming also increases in ocean temperature as well as ocean acidity and decreases in ocean oxygen levels – notable at 1.5°C but much larger at 2°C. It is also expected to drive the loss of coastal resources and reduce the productivity of fisheries and aquaculture (especially at low latitudes).
- Notably, today we already live in a world of at least 0.5°C warming from pre-industrial levels. Already today, many land and ocean ecosystems and some of the services they provide have changed due to global warming. Some impacts may be long-lasting or irreversible, such as the loss of some ecosystems.

**IPBES Global Assessment Report on Biodiversity and Ecosystem Services 2019** specifies the biodiversity and ecosystems dimension of the challenge:

- 75% of the land-based environment and about 66% of the marine environment have been significantly altered by human actions. On average, these trends have been less severe - or avoided - in areas held or managed by Indigenous Peoples and Local Communities.
- Nearly 1 million species are at risk of extinction from human activities.
- The rate of global change in nature during the past 50 years is unprecedented in human history.

- The direct drivers of change in nature with the largest global impact have been (starting with those with most impact): changes in land and sea use; direct exploitation of organisms; climate change; pollution; and invasion of alien species.
- The loss of clean air, drinkable water, pollinating insects, forests, and species pose as big a threat to species survival as climate change. Many experts already believe a so-called “mass extinction event” – only the sixth in the last half-billion years – is already under way.
- The loss of biodiversity increases the challenge of limiting climate change.
- Around the globe, subsidies with harmful effects on the nature have persisted.

**The Global Resources Outlook 2019** provides details on the drivers of these impacts:

- Resource extraction and processing cause over 90 per cent of global biodiversity loss and water stress, and more than half of global climate change impacts.
- Global resource use has more than tripled since 1970 to reach 92 billion tons in 2017. Global material demand per capita grew from 7.4 tons in 1970 to 12.2 tons per capita in 2017.
- Material productivity started to decline around 2000 and has stagnated in the recent years, due to the structural shift in production shares from more to less material efficient countries.
- High-income countries continue to outsource resource-intensive production. Environmental impacts of material consumption are 3 to 6 times greater in high-income countries than in low-income countries.

**None of these trends has shown substantial improvement in the last decades and urgent changes are needed, including:**

**The Global Environment Outlook 2019 (GEO-6):**

- A tripling of the current decarbonization rate as we head towards 2050.
- A 50 per cent increase in food production and the adoption of healthy and sustainable diets across all global regions.
- Deep changes in production and consumption of food, energy and transport systems, urban planning and chemical production.

**IPCC 2018 special report on the impacts of global warming of 1.5oC:**

- Overall, reducing global net-emissions to zero by 2050.
- Supplying 70-85 percent of electricity by renewables by 2050, reducing the use of coal to close to 0%.
- Reducing CO2 emissions from industry by about 65–90% in 2050 relative to 2010, through a combination of new and existing technologies and practices, including electrification, hydrogen, sustainable bio-based feedstocks, product substitution, and carbon capture, utilization and storage (CCUS).
- Material industries are particularly energy and emissions intensive: accounting for close to 66% of final energy demand and 72% of direct industry-sector emissions in 2014. The industry sector’s mitigation measures must follow five strategies: (i) reducing demand, (ii) energy efficiency, (iii) increasing electrification of energy demand, (iv) reducing the carbon content of non-electric fuels, and (v) deploying innovative processes and application of CCS.

- Changes in land and urban planning practices, as well as deeper emissions reductions in transport and buildings.
- Reducing energy demand and improving the efficiency of food production, changing dietary choices and reducing food loss and waste.

#### **IPBES Global Assessment Report on Biodiversity and Ecosystem Services 2019:**

- Promoting sustainable agricultural practices, such as good agricultural and agroecological practices, among others
- Multifunctional landscape planning and cross-sectoral integrated management, that support the conservation of genetic diversity and associated agricultural biodiversity
- Context-appropriate climate change mitigation and adaptation
- Incorporating knowledge from various systems, including the sciences and sustainable indigenous and local practices,
- Avoiding food waste
- Ecosystem-based approaches to fisheries management, spatial planning, effective quotas, marine protected areas, protecting and managing key marine biodiversity areas, reducing run-off pollution into oceans and working closely with producers and consumers, urgently take all steps necessary to prevent, deter and eliminate illegal, unreported and unregulated fishing
- In urban areas, retrofitting green and blue infrastructure, such as creating and maintaining green spaces and biodiversity-friendly water bodies, urban agriculture, rooftop gardens and expanded and accessible vegetation cover in existing urban and peri-urban areas and new developments

In quantitative terms, the necessities will be specified in the new biodiversity targets to be agreed in October 2020 at the CBD COP15.

#### **The Global Resources Outlook 2019:**

- Reducing resource extraction by at least 25 per cent by 2060.
- Reversing global habitat loss, thereby preventing the loss of at least 1.3 billion hectares of forests and other native habitat and restoring a further 450 million hectares of forests by 2060.
- Changing societal behaviours, such that consumption patterns shift 50 per cent of current meat consumption (less in regions of low-meat diets) to plant-based protein, while halving food waste by 2050 (for example, through improved public education).
- Near-phase out of fossil fuel use by 2060.

All these data, analyses, estimates, recommendations, conclusions ... need no further explanation.