



# Environmental and Energy Study Institute

October 8th, 2021

Bob Watson

## Making Peace with Nature

A scientific blueprint to tackle  
the climate, biodiversity and  
pollution emergencies



## Commemorating 50 years of international environmental governance

A synthesis of findings from some 25 major global assessments, including IPCC, IPBES, GEO and IRP

Prepared by more than 50 leading experts from nearly 30 countries familiar with the major assessments

Based on the work of thousands of experts and the many governments involved in the assessments

The environmental challenges have grown in number and severity since the Stockholm Conference in 1972

A blueprint for different actors on tackling the climate, biodiversity and pollution emergencies



## Making Peace with Nature

A scientific blueprint to tackle the climate, biodiversity and pollution emergencies



# MAKING PEACE WITH NATURE

Transforming nature puts human well-being at risk

Transforming humankind's relationship with nature is the key to a sustainable future

## HUMAN DEVELOPMENT (1970–2020):

- ▶ The economy has grown nearly fivefold and trade tenfold
- ▶ Human population has doubled to 7.8 billion
- ▶ Still, 1.3 billion people are poor and 700 million hungry

## DISPOSALS OF WASTE MATTER:

- ▶ Greenhouse gas emissions have doubled
- ▶ Chemical production, waste and pollution have increased

## USE OF SPACE AND RESOURCES:

- ▶ Resource use has tripled
- ▶ Humans impact 3/4 of ice-free land and 2/3 of oceans

## HUMAN DEVELOPMENT (from 2020):

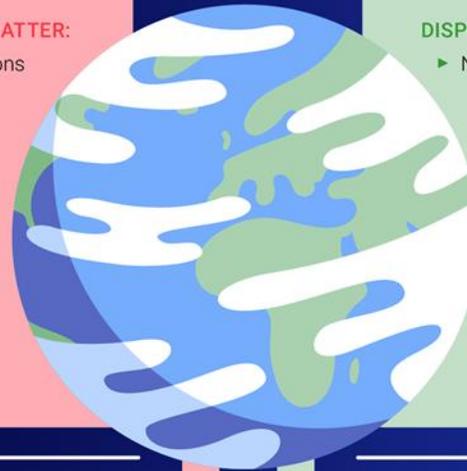
- ▶ Sustainable economic and financial systems
- ▶ Healthy nutritious food and clean water and energy
- ▶ Healthy lives and well-being for all in safe cities and settlements

## DISPOSALS OF WASTE MATTER:

- ▶ Net-zero carbon dioxide emissions by 2050
- ▶ Management of chemicals, waste and pollution

## USE OF SPACE AND RESOURCES:

- ▶ Recycling of resources
- ▶ Protection and sustainable use of land and oceans



## Earth's capacities to

- ▶ support life
- ▶ provide resources
- ▶ absorb waste matter

**ARE DEGRADED AND SURPASSED**

## RISK to:

Livelihoods, equity, health, economic development, peace, food, water, sanitation, safe cities and settlements

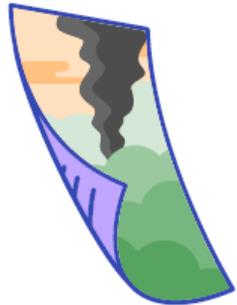
## Earth's capacities to

- ▶ support life
- ▶ provide resources
- ▶ absorb waste matter

**ARE RESTORED AND ADAPTED TO**

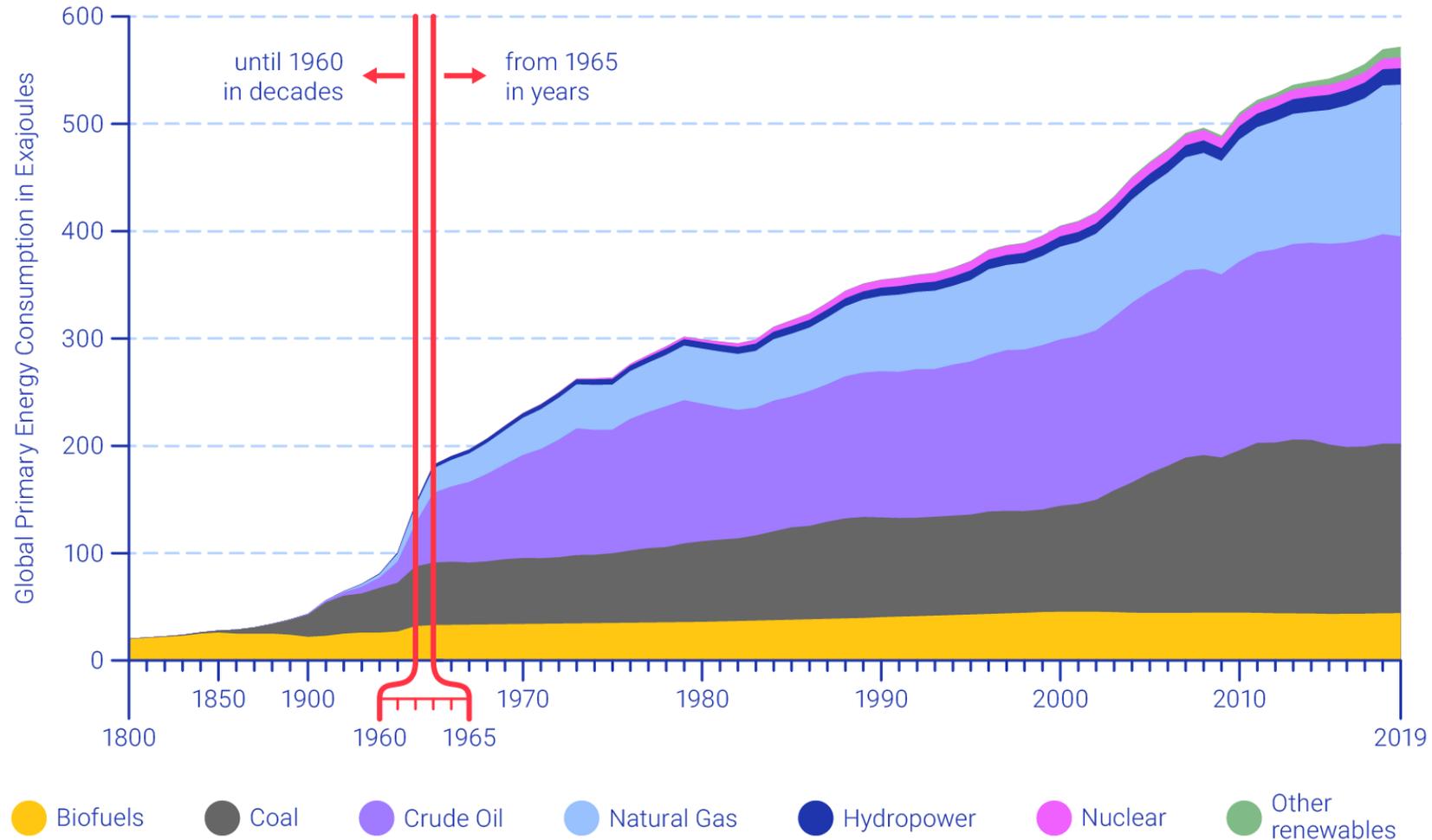
## SUPPORT for:

Poverty elimination, equity, health, economic development, peace, food, water, sanitation, safe cities and settlements



# Extraction of natural resources and production of energy has tripled the past 50 years

## 2.5. Global Primary Energy Consumption by source

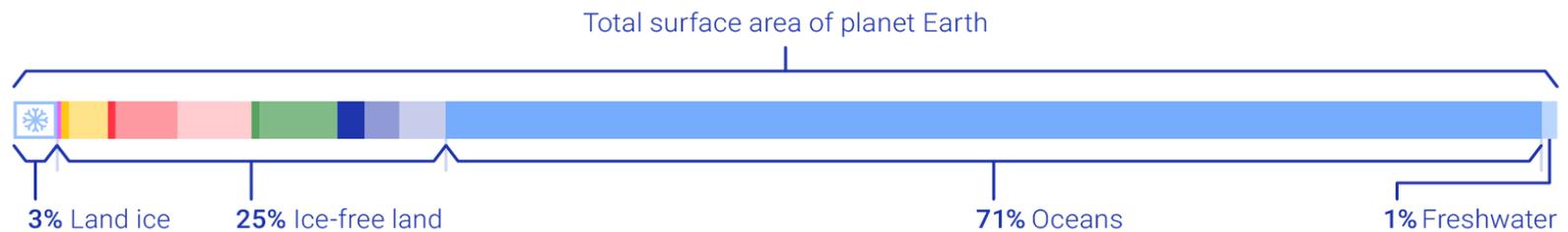
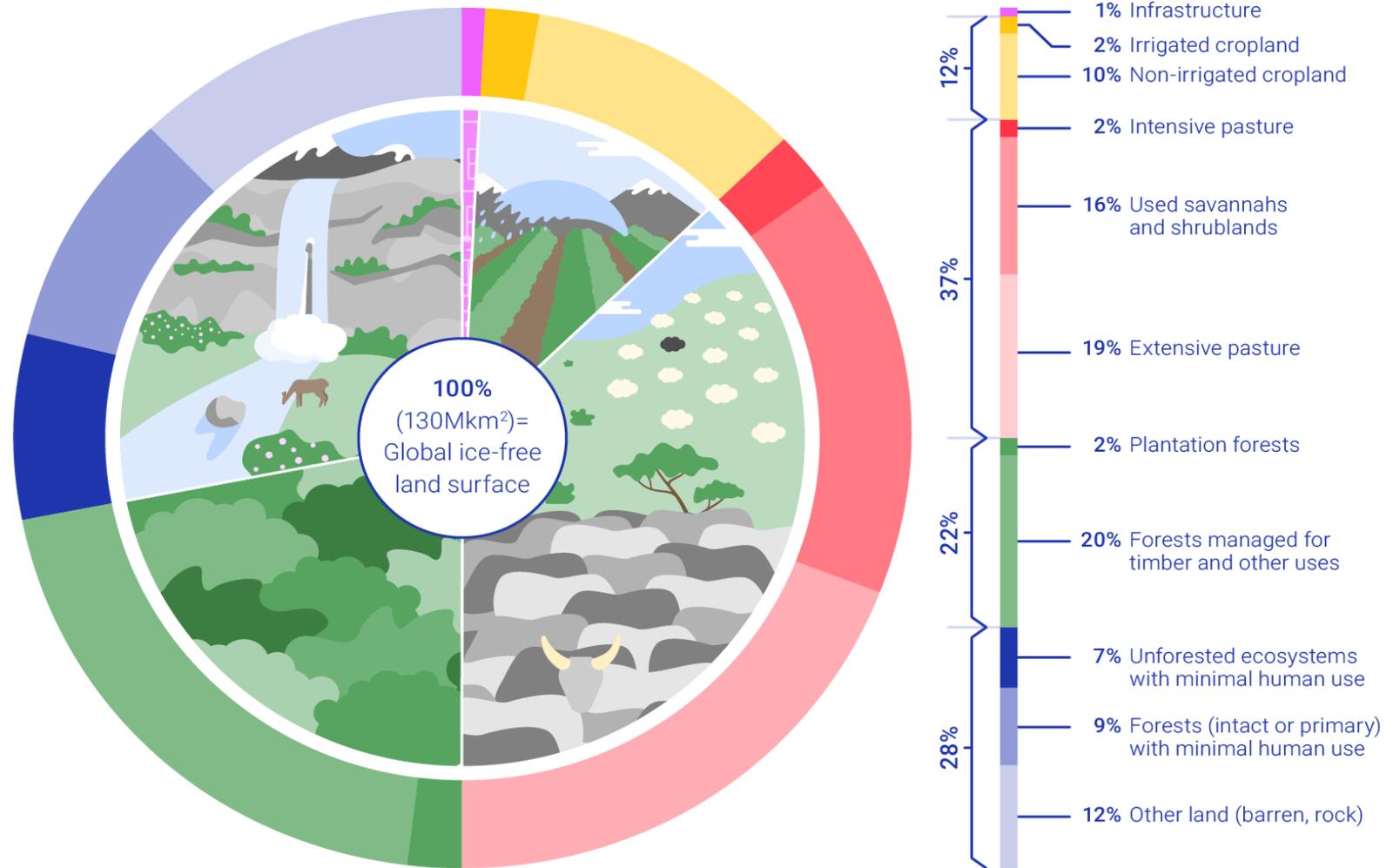


# Humanity has a major impact on 3/4 of land and on 2/3 of oceans

1/4 land has been radically transformed

Remaining near-natural land is projected to be only 10 per cent by 2050

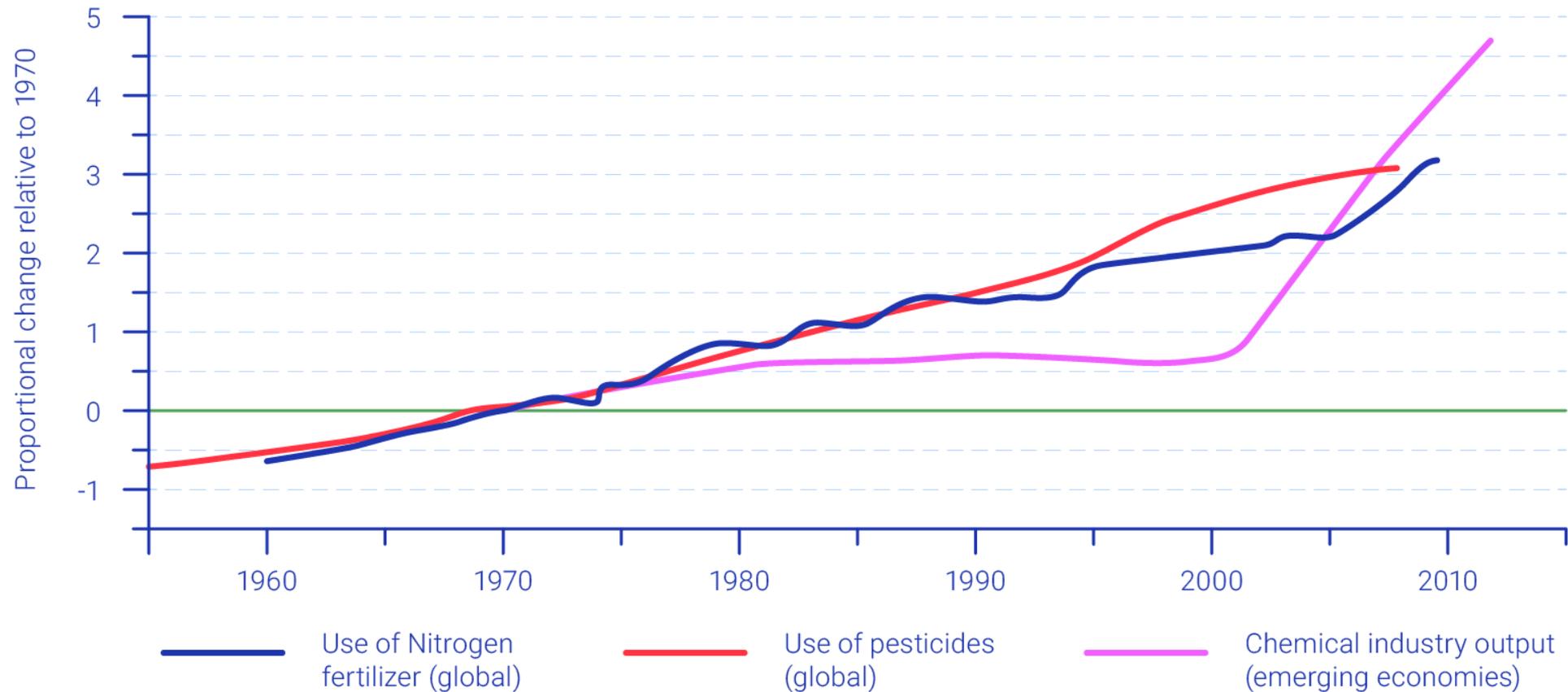
1/4 of global warming results from activities related to land-use



# The production and release of chemicals is increasing fast

Some of these chemicals threaten human health and the environment

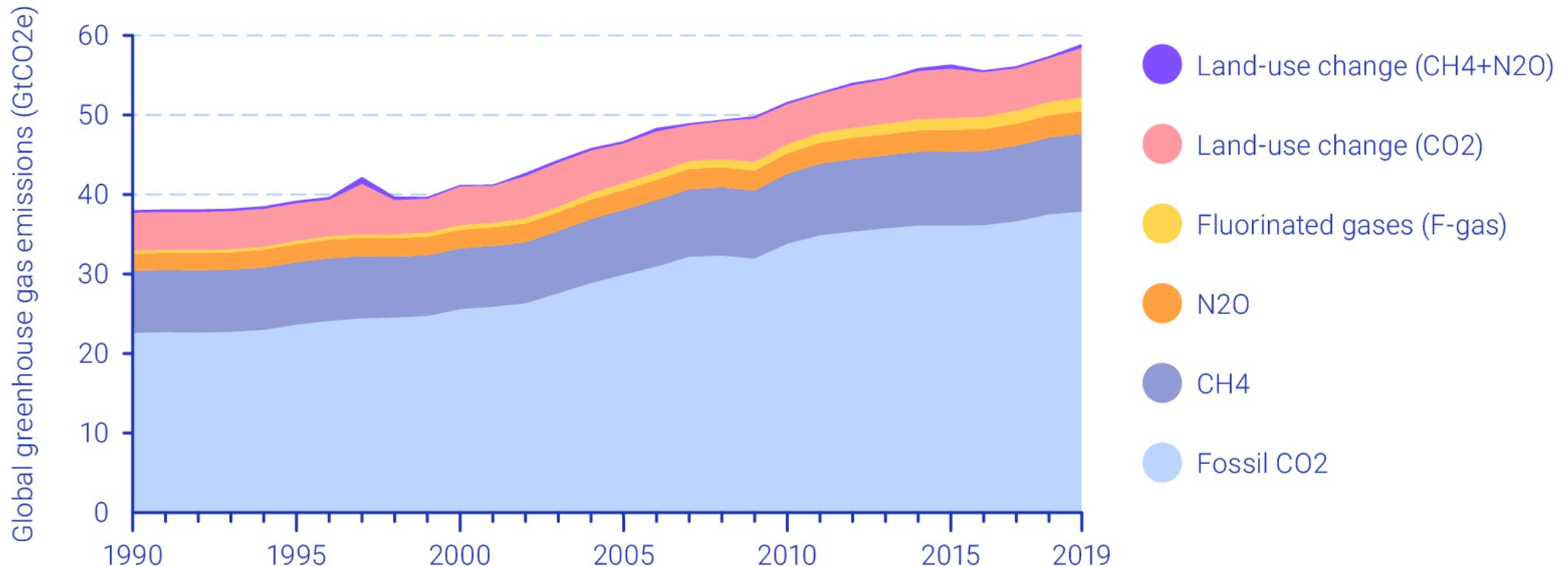
## 3.5. Chemical Intensification 1955 – 2015



# Human Emissions of Greenhouse Gases Continue to Increase

The world is already more than 1°C warmer than a century ago, precipitation patterns are changing, sea level rise is accelerating, more frequent and intense extreme events, threatening people and nature (biodiversity and ecosystems)

## 2.8. Global greenhouse gas emissions from all sources

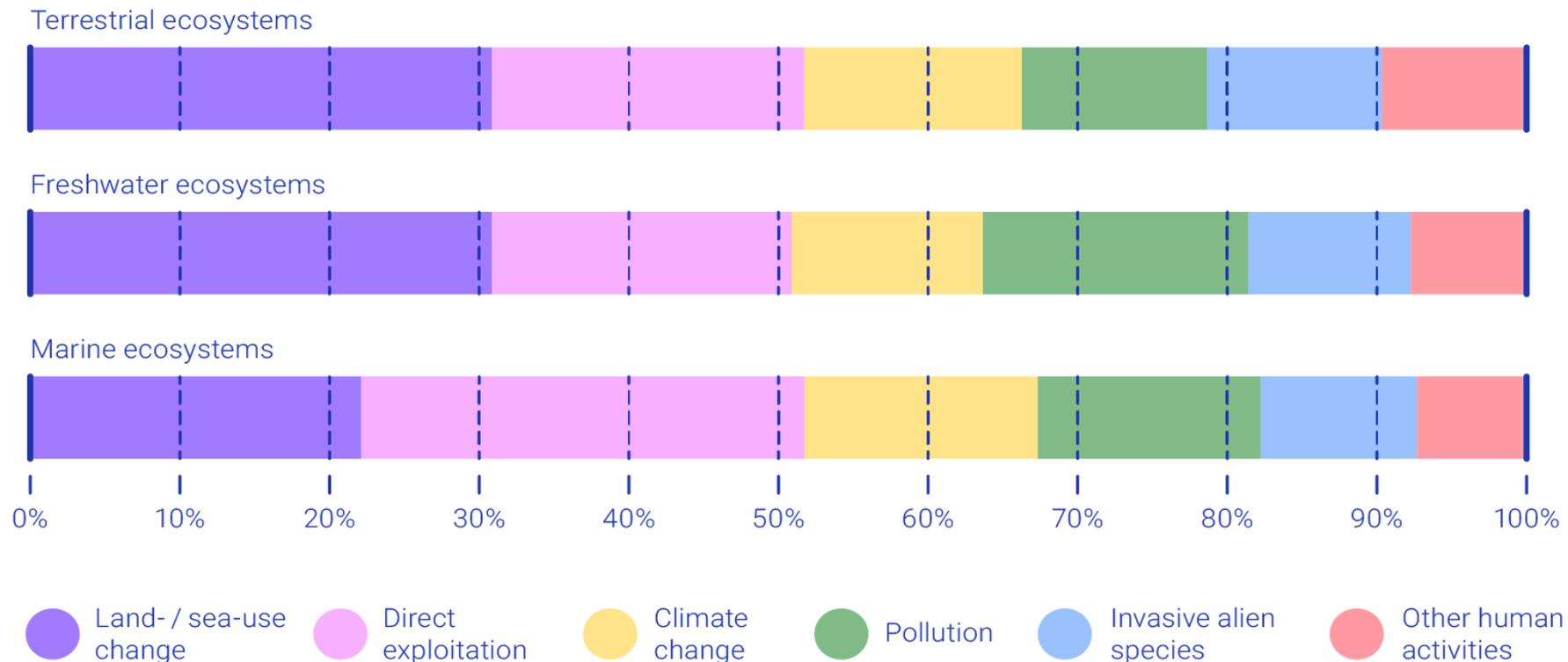


# Biodiversity continues to decline at an alarming and accelerating rate

1 million of the world's estimated 8 million plants and animal species are threatened with extinction - population sizes and abundance are dropping - ecosystems and their services are being degraded

Climate change may become the greatest threat to biodiversity in the coming decades

## 3.1. Relative global impact of direct drivers on major ecosystems



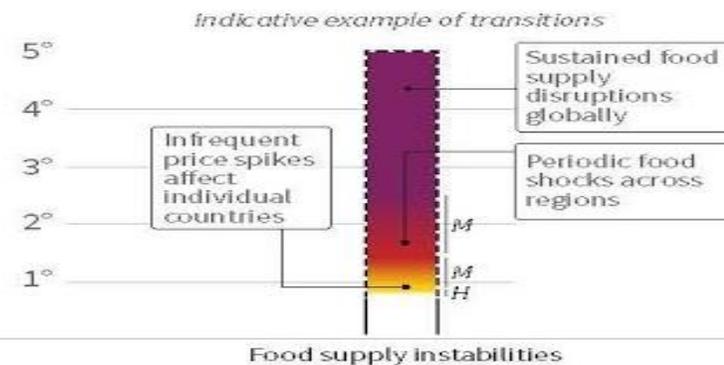
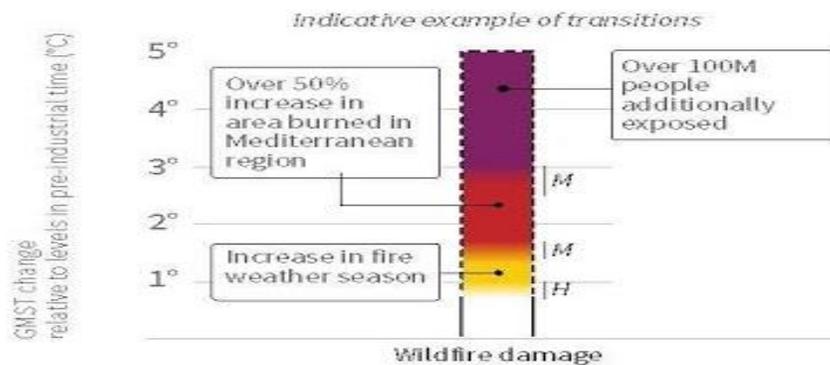
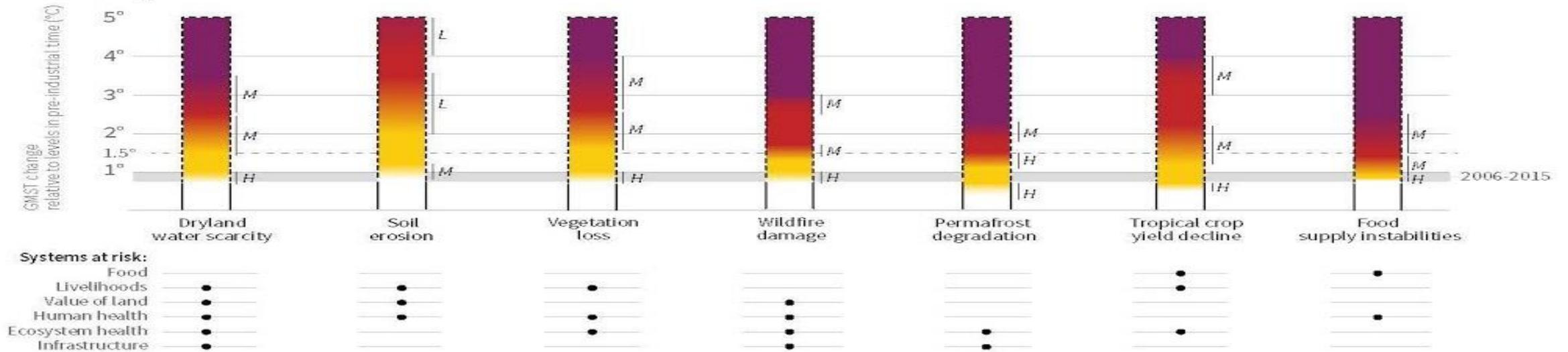
# Projected Risks to Humans and Terrestrial Ecosystems from Climate Change

SPM approved draft

IPCC SRCCL

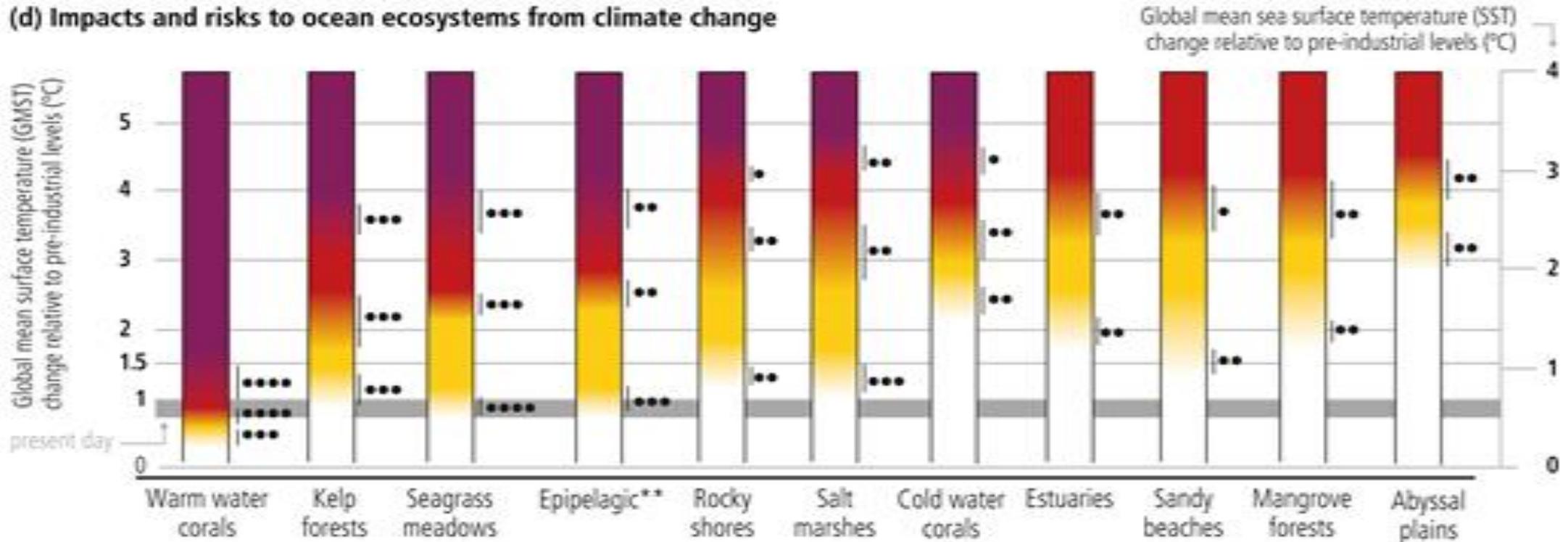
## A. Risks to humans and ecosystems from changes in land-based processes as a result of climate change

Increases in global mean surface temperature (GMST), relative to pre-industrial levels, affect processes involved in **desertification** (water scarcity), **land degradation** (soil erosion, vegetation loss, wildfire, permafrost thaw) and **food security** (crop yield and food supply instabilities). Changes in these processes drive risks to food systems, livelihoods, infrastructure, the value of land, and human and ecosystem health. Changes in one process (e.g. wildfire or water scarcity) may result in compound risks. Risks are location-specific and differ by region.

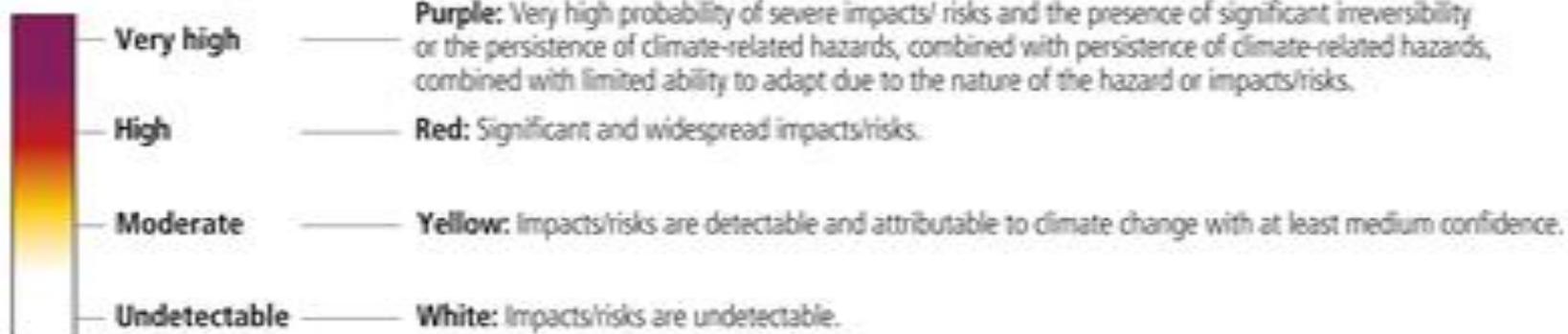


# Risks to Ocean Ecosystems for Climate Change

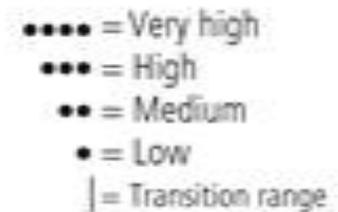
(d) Impacts and risks to ocean ecosystems from climate change



## Level of added impacts/risks



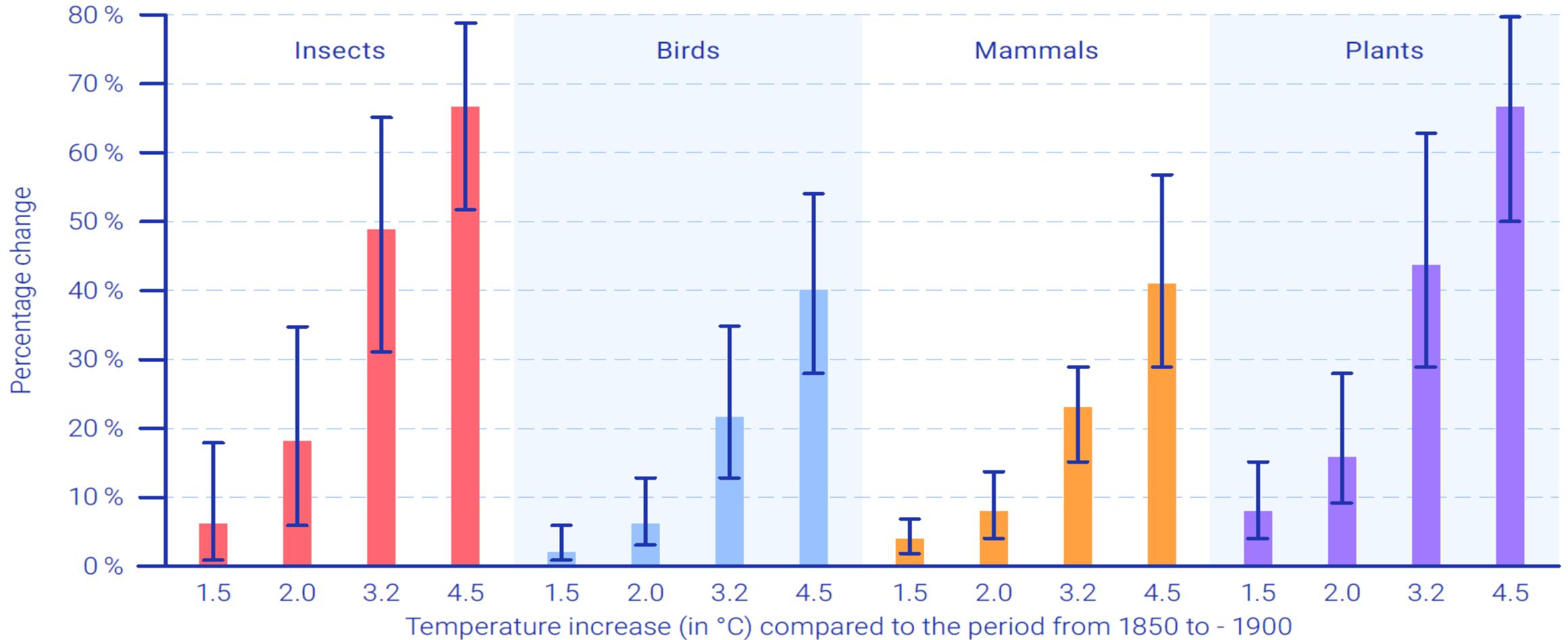
## Confidence level for transition



\*\*see figure caption for definition

# Projected Impact on Species Geographic Range

## 3.7. Species projected to lose over 50% of their climatically determined geographic range



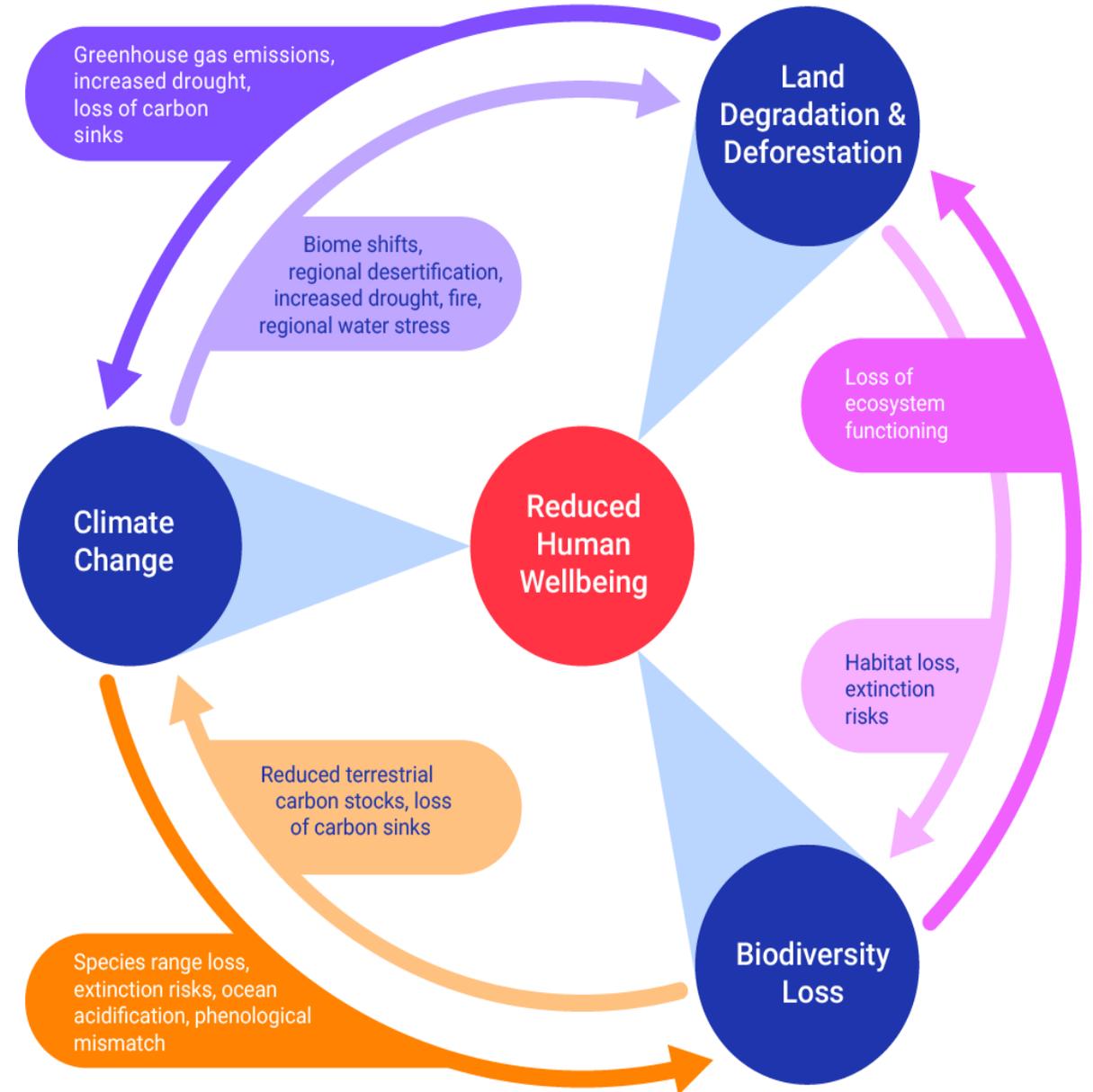
— Range between min and max

## The environmental emergencies are intertwined

Earth's environmental emergencies and development challenges should be addressed together to achieve sustainability

International environmental agreements need to be aligned and become more mutually supportive

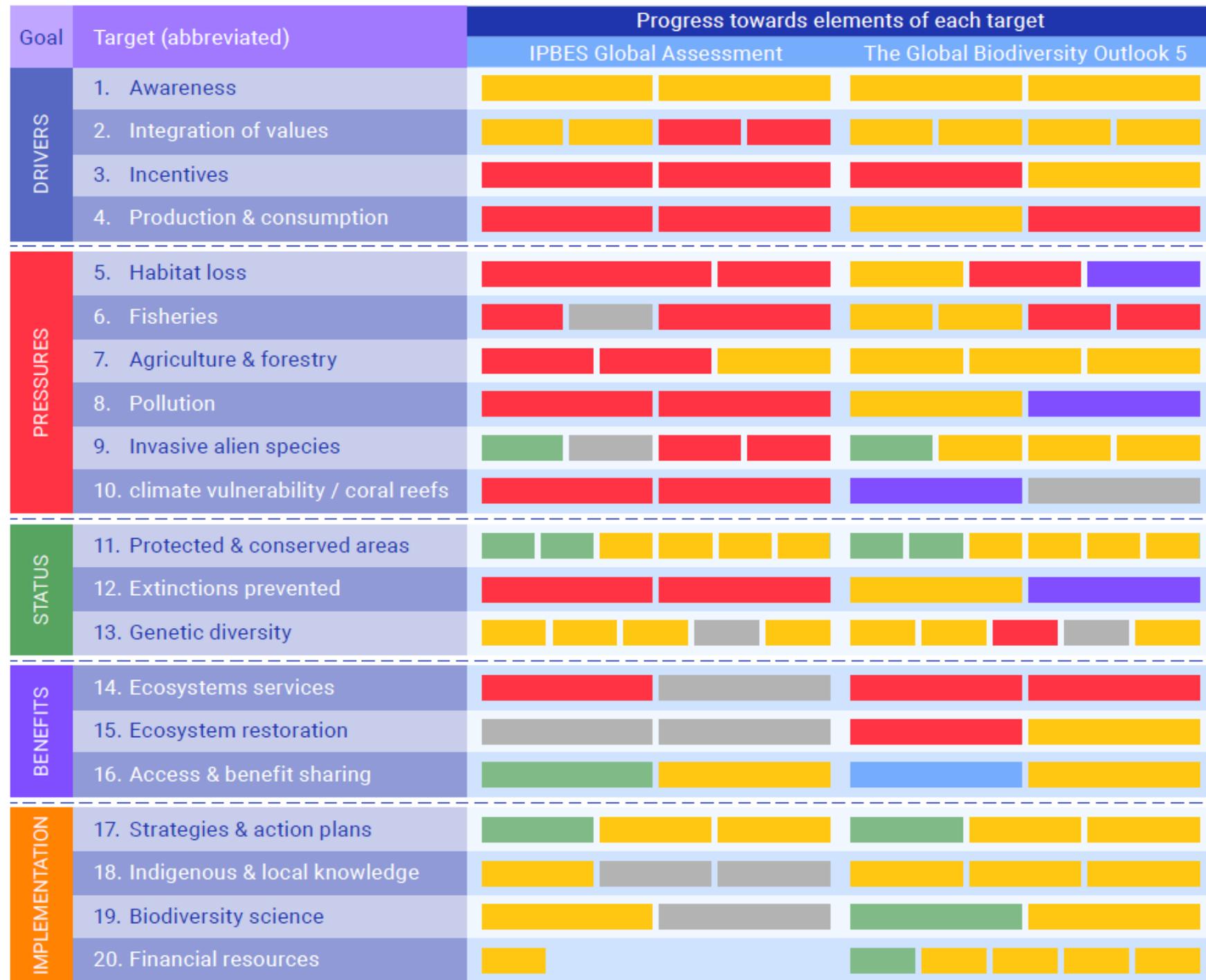
Climate change, loss of biodiversity and land degradation are not only environmental issues, but economic, development, security, social, ethical and moral issues



# We are going beyond limits agreed in international agreements

None of the Aichi Biodiversity Targets were fully met, and in some cases the situation today is worse than in 2010 when these targets were established

Therefore, the post-2020 biodiversity framework, which will be agreed at in COP-15 must agree on actions to conserve and restore biodiversity, not just goals and targets



# Closing the Greenhouse Gas Emissions Gap

## CO<sub>2</sub> emissions need to be:

- reduced by 45% by 2030
- net zero by 2050

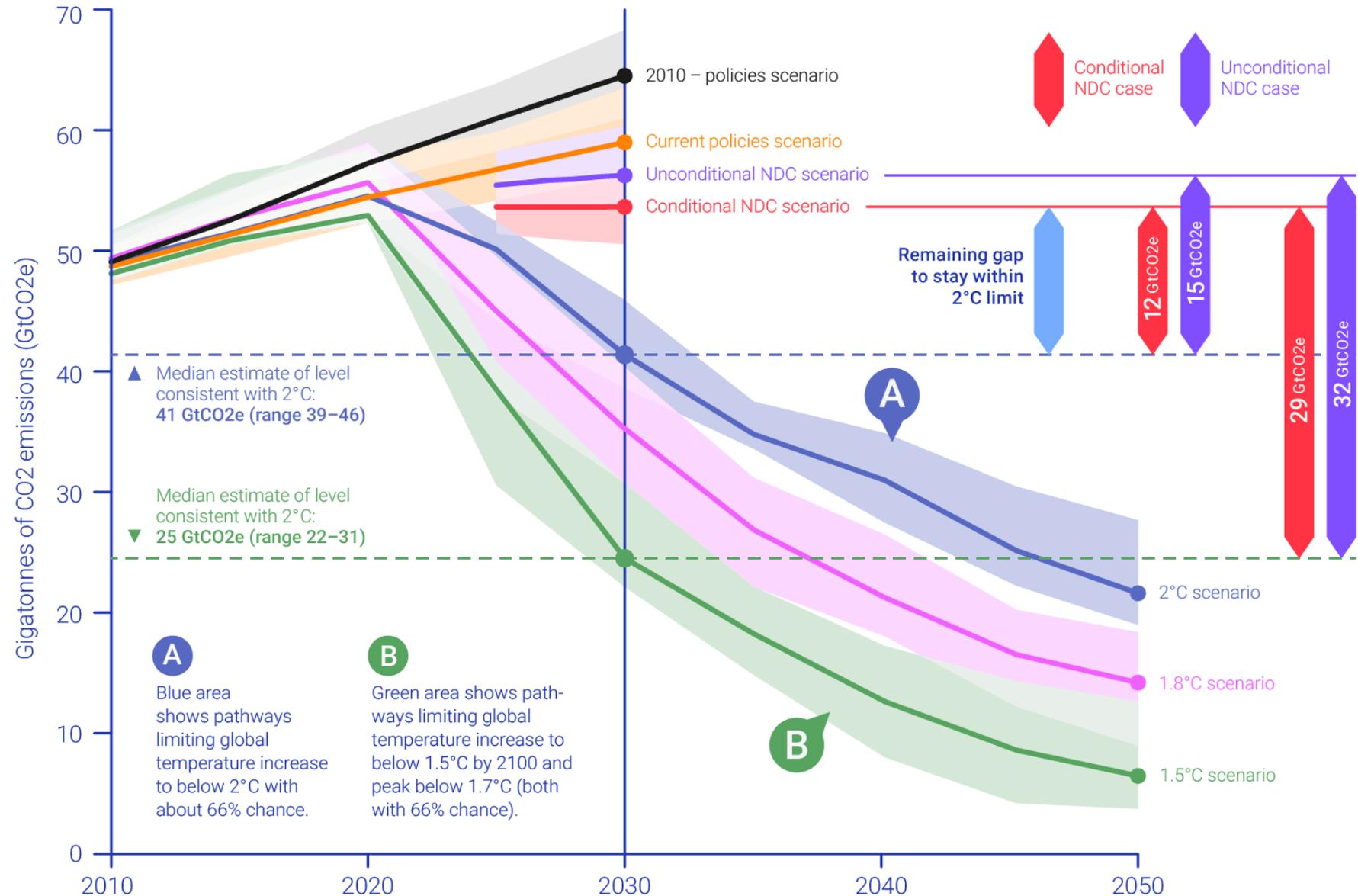
*to limit global warming to 1.5°C*

- reduced by 25% by 2030
- reach net zero by around 2070

*to limit warming to 2°C*

*Current projected emissions in 2030 are comparable or even higher (about 16%) than in 1990 – recent UNFCCC report*

*We are currently on a pathway to 3-4°C*



# Environmental degradation threatens the achievement of the SDGs

## Impeding poverty elimination, inequality reduction, economic development and peace

- ▶ Exacerbated multi-dimensional poverty
- ▶ Accentuated inequality, including gender inequality
- ▶ Lost income opportunities
- ▶ Increased risk of conflict over resources
- ▶ Increased risk of displacement and outmigration

## Threatening human health

- ▶ Increased undernutrition, heat stress and air pollution-related diseases
- ▶ Exacerbated food- and water-borne infections and zoonotic diseases
- ▶ Reduced ability of nature to provide medicines and support physical and mental well-being

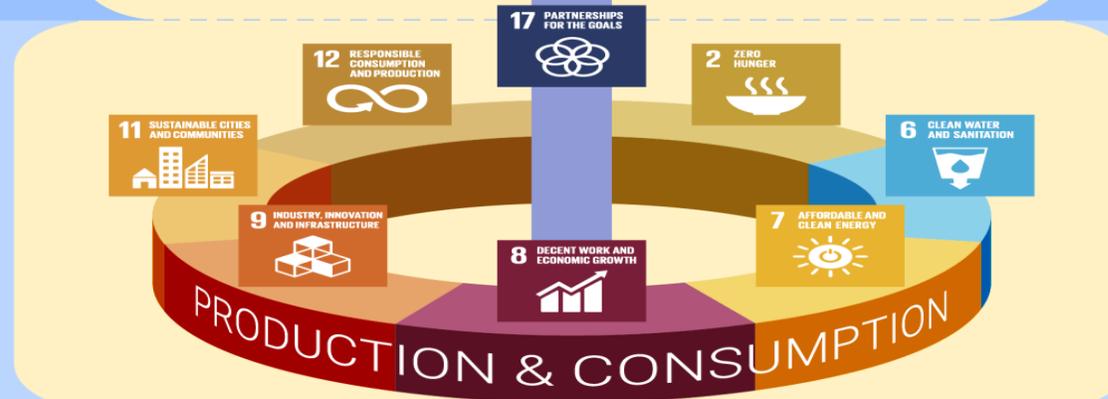


## Hampering efforts to make cities and communities sustainable

- ▶ Increased vulnerability to natural disasters
- ▶ Stresses on urban infrastructure
- ▶ Rising air and water pollution
- ▶ Rising waste disposal problems

## Weakening food and water security

- ▶ Increased food-system vulnerability
- ▶ Reduced agricultural productivity
- ▶ Reduced nutritional value of crops
- ▶ Lower catch in fisheries
- ▶ Increased water scarcity



## Changing climate

- ▶ Higher temperatures
- ▶ More extreme weather events, e.g. flooding, droughts, storm surges and heatwaves
- ▶ Rising sea level
- ▶ Changing precipitation patterns
- ▶ Ocean acidification

## Biodiversity loss and ecosystem degradation

- ▶ Loss of species richness and accelerated species extinction
- ▶ Loss of genetic resources in domestic and wild species
- ▶ Loss of ecosystem functions, such as pollination, seed dispersal, soil formation and biological productivity



# Transforming humankind's relation with nature is the key to a sustainable future

Human knowledge, ingenuity, technology and cooperation can transform societies and economies and secure a sustainable future

This transformation will involve a fundamental change in the technological, economic and social organization of society, including world-views, norms, values and governance

Major shifts in investment and regulation are key to just and informed transformations that overcome inertia and opposition from vested interests

# Meeting the Paris Targets

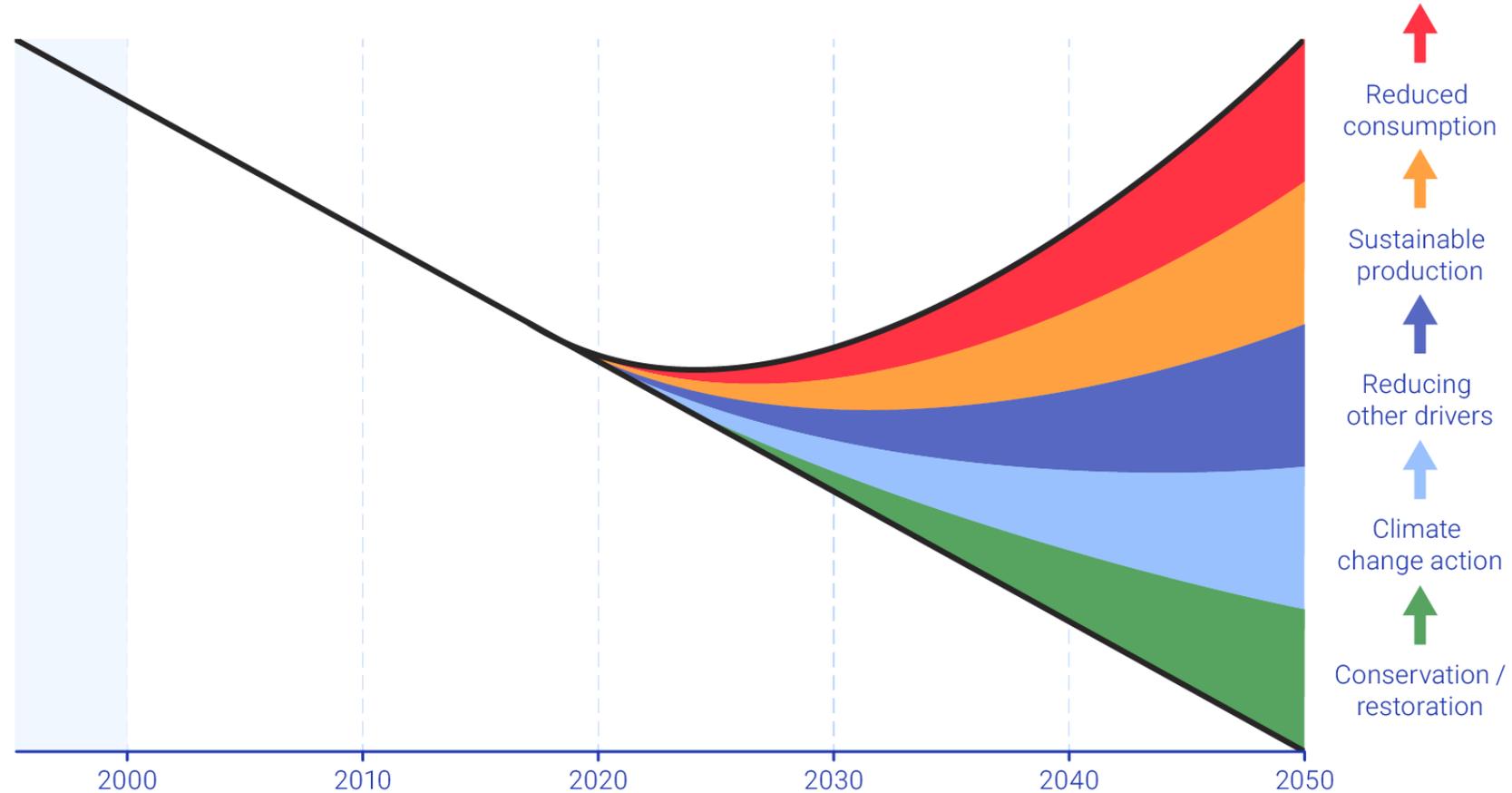
- **Reduce the demand for carbon-intensive activities**
  - **Reduced demand (eliminate waste) and improved efficiency**
- **Adopt low-carbon solutions**
  - **Electric vehicles**
  - **Efficient buildings**
- **Expand low-carbon energy**
  - **Wind, solar, fossil fuel with CCS, hydrogen**
- **Sustainable use of land**
  - **Eliminate deforestation**
  - **Sustainable agriculture and forestry**
  - **Conserve and restore ecosystems**

# Aligned actions for protecting and restoring life on Earth

The loss of biodiversity can only be halted and reversed by providing space dedicated for nature while also addressing drivers such as:

- changing land and sea use,
- over-exploitation,
- climate change,
- pollution and
- invasive alien species

6.3. Aligned actions for protecting and restoring life on Earth



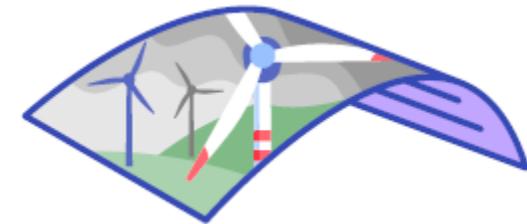
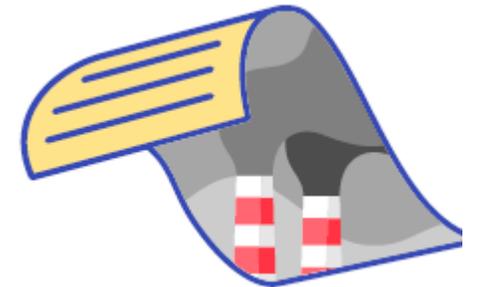
## Transformed economic, financial and productive systems can lead and power the shift to sustainability

Society needs to include natural capital in decision-making (complement GDP with inclusive wealth), eliminate environmentally harmful subsidies, embrace a circular economy, and invest in the transition to a sustainable future

The food, water and energy systems need to be integrated and transformed to meet growing human needs in an equitable, resilient and environmentally friendly manner

Biodiversity, climate and other environmental finance could be ramped up by redirecting some of the direct and indirect subsidies to fossil fuels, agriculture, fisheries and transport

Keeping the planet healthy is key to providing health and well-being for all



## Zoonotic Diseases

- About 75% of all new infectious diseases have their origin in animals
- 700,000 potential viruses in animals and birds could pose a threat to human health
- The risks of future zoonotic pandemics could be reduced by managing human activities and applying a holistic one-health approach (decrease deforestation, limit human and livestock interactions with wild-life, and make wet markets more hygienic)



# Role of actors

A: Governments at all levels hold a leading role

B: Intergovernmental Organizations facilitate joint efforts

C: Financial Organizations direct investments

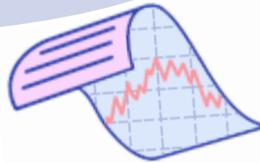
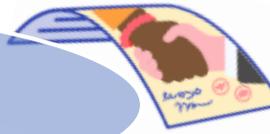
D: Private sector innovates and implements

E: Non-Governmental Organizations (NGOs) conceive ideas and raise awareness

F: Individuals, households, civil society and youth groups, and indigenous peoples and local communities) put theory into practice

G: Scientific and Educational Organization develops knowledge and understanding

1. Address Earth's environmental emergencies and human well-being together
2. Transform economic and financial systems so they lead and power the shift toward sustainability
3. Transform food, water and energy systems to meet growing human needs in an equitable, resilient and environmentally friendly manner





## Selected key messages for Governments

**Lead the change** through cross-sectoral coordination of assessments, monitoring, policies, legislation, enforcement and financing for:

- Scaling up and accelerating action to address the climate, biodiversity and pollution emergencies together

**Transform the economic and financial systems** so they lead and power the shift to sustainability and circularity including when restarting economies stalled by the COVID-19 pandemic by:

- Accounting for natural capital and environmental costs in measures of economic performance and in decision-making
- Establishing carbon taxes, carbon pricing, markets for carbon trading, and schemes for offsetting of nature and payments for ecosystem services
- Shifting environmentally harmful subsidies and investments in economic activities, research and development towards low-carbon and nature-friendly solutions

**Transform food, energy and production systems** to provide access to sustainable, affordable and nutritious food, clean energy and safe water for all by

- Establish policies and implement technologies to contribute to cost-effectively reduce GHGs emissions globally by 50% by 2030 and net-zero by mid-century, including through developing energy efficiency regulations and infrastructure for electric vehicles
- Establish policies for a sustainable agricultural and water system, that is climate resilient, and addresses healthy diets and reductions in food and water waste



## Selected key messages for UN Agencies

***Facilitate international cooperation*** in science-policy interfaces and advance UN system-wide efforts including by promoting synergies among scientific assessments and multilateral environmental agreements through norms, implementation, financing, capacity-building and technological cooperation for:

- Coalitions and ambitious targets for addressing the climate, biodiversity and pollution emergencies together

***Facilitate the transformation of the economic and financial systems*** so they lead and power the shift to sustainability and circularity including when restarting economies stalled by the COVID-19 pandemic by:

- Developing framework to account for natural capital and environmental costs in measures of economic performance and in decision-making
- Developing approaches to establishment of carbon taxes, carbon pricing, markets for carbon trading, and schemes for offsetting of nature and payments for ecosystem services
- Support cooperation on shifting environmentally harmful subsidies and investments in economic activities, research and development towards low-carbon and nature-friendly solutions
- Advancing international development assistance, capacity-building and transfer of technology

***Facilitate the transformation of food, energy and production systems*** to provide access to sustainable, affordable and nutritious food, clean energy and safe water for all by

- Promoting healthy diets and reductions in food and water waste
- Developing approaches to energy efficiency regulations and infrastructure for electric vehicles



## Selected key messages for the Finance Sector

- a) Disclose climate-related financial risk and the use of natural resources, and the impact of these activities on the environment.
- b) Align lending to the global net-zero carbon emissions objective with an immediate decarbonizing of portfolios
- c) Increase the share of adaptation and resilience finance to at least 50 per cent of their climate finance to support activities such as early warning systems, and climate-resilient infrastructure and agriculture.
- d) Develop and promote innovative financing mechanisms for the conservation and restoration of biodiversity, including through payments for ecosystem services.
- e) Support the expansion and better management of protected areas and other effective area-based conservation measures
- f) Support One Health and disease prevention initiatives and strategies to meet WHO guidelines for air pollutants.
- g) Support health research, especially in developing countries.
- h) Assist in the transformation of the economic, financial and productive sectors (see Governments)



## Selected key messages for the Business Sector

- a) Help develop and comply with strong environmental legislation and standards
- b) Implement certified and traceable sustainable practices along the complete supply chain.
- c) Disclose climate-related financial risk, use of natural resources and the impact of activities on the environment.
- d) Practice corporate social responsibility.
- e) Adjust business models and align them with the global net-zero carbon emissions objective and sustainability practices in all sectors
- f) Develop and promote innovative public-private partnerships for financing and engaging in the conservation and restoration of biodiversity,
- g) Implement sustainable land management practices for agriculture and forestry.
- h) Move to a sustainable and circular business model
- i) Conduct transparent risk assessments of the impact of chemicals on the environment and human health.
- j) Use natural capital in decision-making and develop environmental and social risk registers for all projects and investments.
- k) Engage in carbon trading, schemes for offsetting nature, and payments for ecosystem services.
- l) Promote behaviour change in customers.
- m) Shift investments and operations away from unsustainable industries, such as fossil fuels.
- n) Invest in innovation, environmentally sound technologies and move towards a circular economy.
- o) Access develop and invest in systems to produce, store and distribute affordable and clean power, water and healthy food to all
- p) Provide modern food storage and distribution services that minimize waste
- q) Promote the development and use of food certification standards and product labelling
- r) Invest in sustainable intensification in agriculture, fisheries and aquaculture.
- s) Develop climate-resilient crops and livestock breeds as well as alternatives to harmful agricultural inputs, including to fertilizers and pesticides
- t) Develop, invest in and use low-carbon energy technologies and distribution

# #PeacewithNature

*Information, resources and contacts:*  
<https://www.unep.org/resources/making-peace-nature>

This project is co-funded by the European Union and the Norwegian Ministry for Climate and Environment



Norwegian Ministry  
of Climate and Environment

