



# **Principles for Sustainable Insurance**

**September 9<sup>th</sup> , 2025**  
**Masayuki Tanaka**  
**FALIA**

# **Agenda**

- 1. Why sustainability matters?**
- 2. Principles for Sustainable Insurance (PSI)**
- 3. Nationally Determined Contribution (NDC)**
- 4. Measurement, Reporting, and Verification (MRV) of greenhouse gas emissions**
- 5. Risk related to Climate Change**
- 6. Climate Change Impact**
- 7. References**

# **1. Why sustainability matters?**

# **1-1 Environmental Boundaries Are Business Boundaries**

- The degradation of planetary boundaries—climate instability, biodiversity loss, and pollution—directly impacts insurers.**
- Rising heat-related illnesses, respiratory conditions from air pollution, and mental health deterioration due to eco-anxiety are increasing claims and underwriting risks.**
- Microplastics and ecosystem collapse pose long-term threats to public health, especially in densely populated Asian regions.**
- Climate change has a negative impact on the health of the entire ecosystem by leading to death and illness from the disruption of food systems, increases in zoonoses and food-, water- and vector-borne diseases, and mental health issues.**

## **1-2 Loss of Trust = Loss of Future**

- Insurers don't sell physical products—they offer trust and credibility. If insurers fail to actively mitigate environmental risks, they risk losing credibility among future generations.**
- Sustainability is no longer optional—it is a prerequisite for long-term industry viability and social license to operate.**

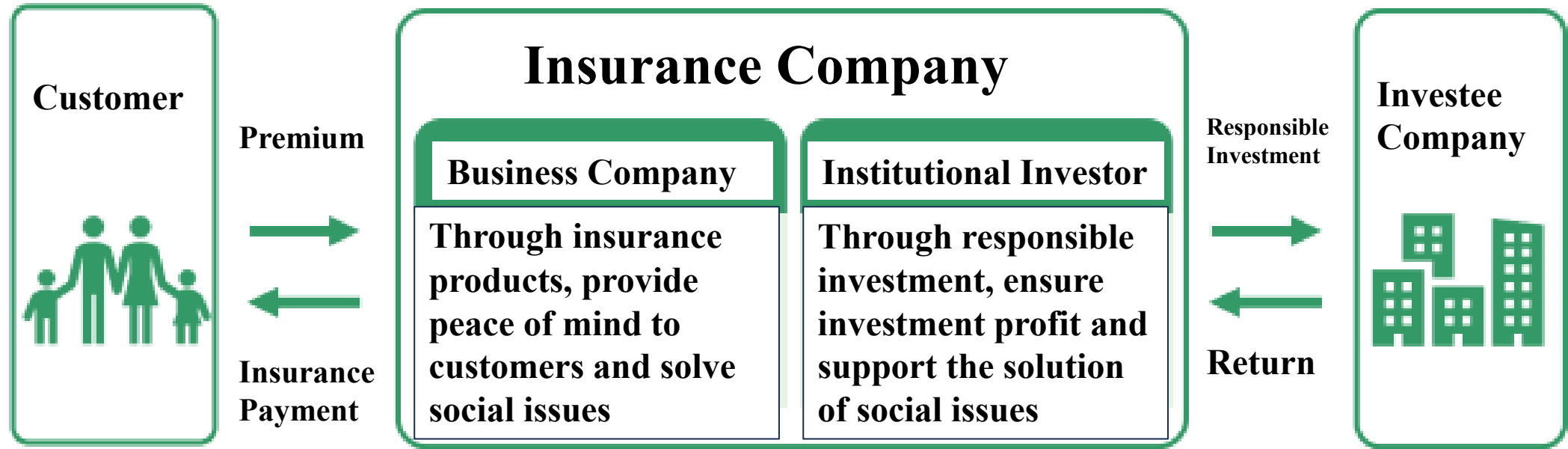
## **1-3 Insurers as Institutional Investors**

- Insurance companies manage vast investment portfolios and have the power to influence markets through ESG and impact investing.**
- Yet, low sustainability literacy within the sector limits proactive capital allocation toward climate and biodiversity solutions.**
- This underutilization of financial influence delays systemic change and exposes portfolios to long-term environmental risks.**

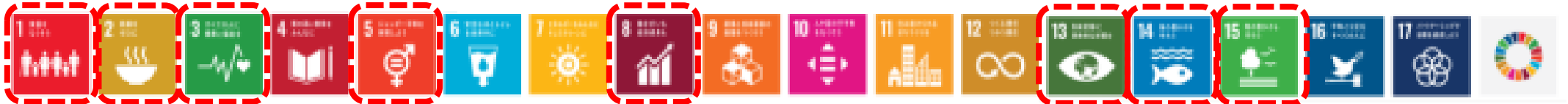
## **1-4 Asia's Unique Exposure and Responsibility**

- **Asia is home to some of the world's most climate-vulnerable populations and ecosystems.**
- **The insurance industry must evolve from passive risk coverage to active risk mitigation—through product innovation, investment strategy, and stakeholder engagement.**

# Two Roles of Insurance Companies,



## Contribution to attain SDGs





# 17 SDGs



# **Sustainability Practices in Japan's Insurance Sector**

## **Regional Collaboration:**

- **Insurers collaborate with local governments to advance public health, sustainability objectives, disaster resilience, and overall community well-being, including support for elderly and dementia-affected individuals.**

## **Academic Partnerships:**

- **Joint research with universities enhances innovation in climate risk management and health promotion.**

## **ESG Investment Leadership:**

- **Japanese insurers integrate ESG criteria into asset management, supporting green finance and sustainable development.**

## **2. Principles for Sustainable Insurance (PSI)**

# Principles for Sustainable Insurance (PSI)



Launched at the 2012 UN Conference on Sustainable Development, the UNEP FI Principles for Sustainable Insurance (PSI) serve as a global framework for the insurance industry to address environmental, social and governance risks and opportunities. The PSI initiative is the largest collaborative initiative between the UN and the insurance industry.

# 1. Introduction and background



**Ban Ki-moon**

Secretary-General of the United Nations



## Principles for Sustainable Insurance (PSI)

**E**nvironment

**S**ociety

**G**overnance

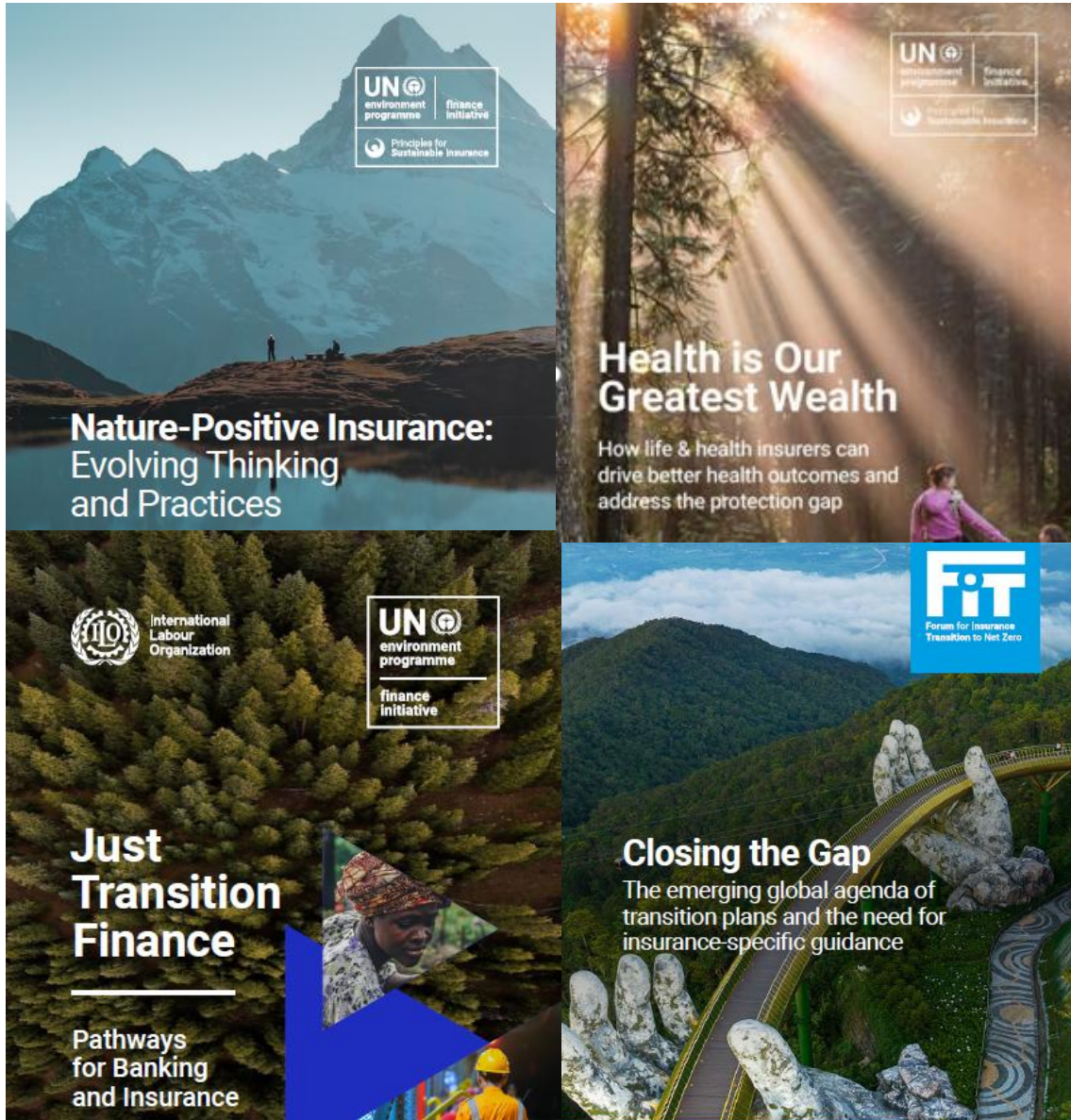
**Principle 1 ESG based decision making**

**Principle 2 Raise awareness of ESG**

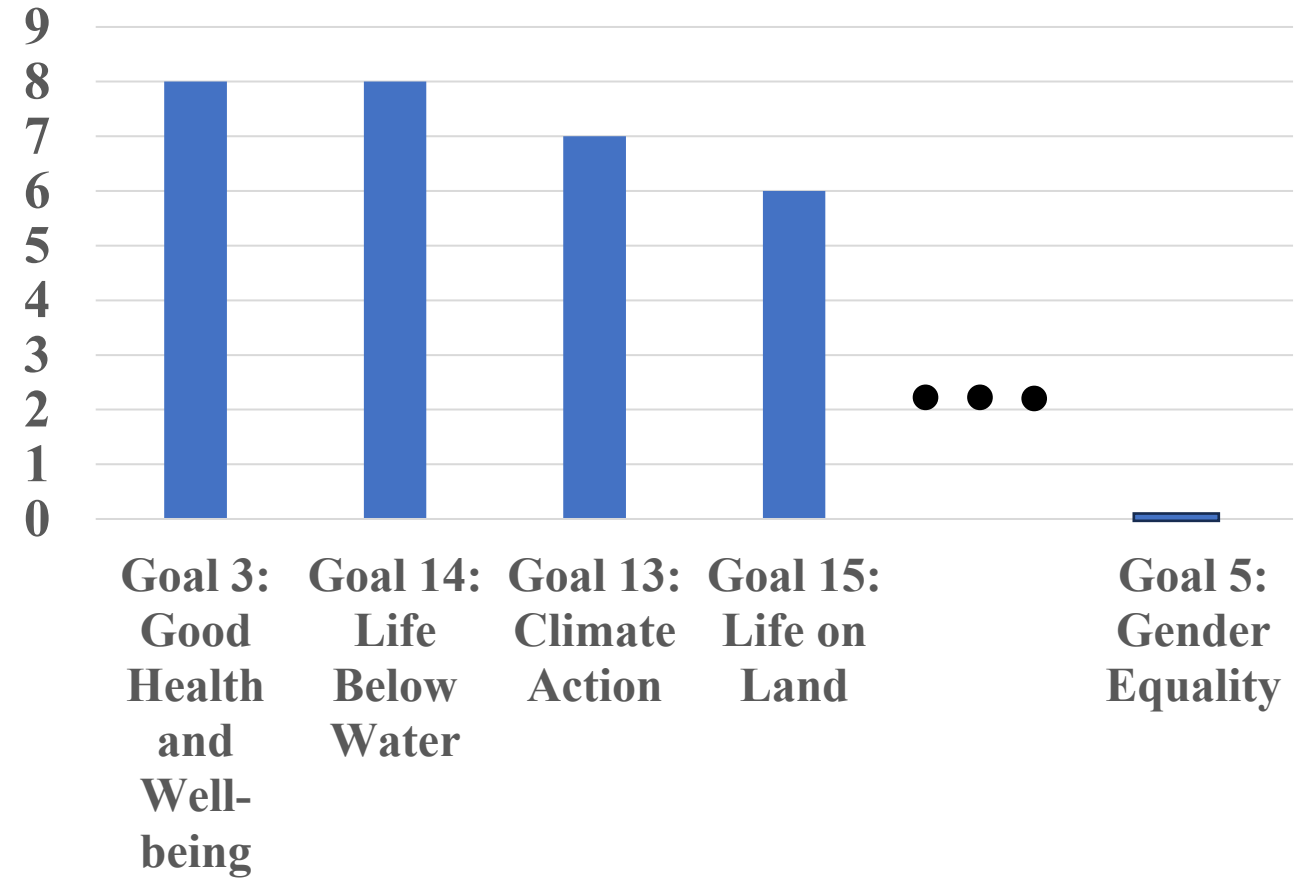
**Principle 3 Work together with Stakeholders**

**Principle 4 Accountability and Transparency**

# 1. Introduction and background



# PSI publications





# PSI publications

PSI publication Title↵	Year of Publication↵	Summary of Contents↵
Insuring a resilient nature-positive future: Global guide for insurers on setting priority actions for nature↵	2024↵	This global guide outlines the insurance sector's role in managing nature-related risks and protecting biodiversity. It emphasizes strategies to address nature loss, strengthen economic resilience, and integrate nature-related considerations across the insurance value chain.↵
Closing the Gap: The emerging global agenda of transition plans and the need for insurance-specific guidance↵	2024↵	This report highlights the need for insurance-specific guidance on transition plans, emphasizing the industry's role in tackling climate challenges, enhancing transparency, and aligning strategies to support sustainable development through effective risk management.↵
Just Transition Finance: Pathways for Banking and Insurance↵	2023↵	This report explores the role of banks and insurers in supporting a just transition, emphasizing finance's importance in balancing climate action with social equity. It discusses strategies to help workers and communities adapt to a low-carbon economy and achieve a sustainable, inclusive future.↵
Nature-Positive Insurance: Evolving Thinking and Practices↵	2023↵	This report explores innovative solutions for managing nature-related risks and protecting biodiversity. It highlights the insurance sector's role in supporting global biodiversity goals and transitioning to a nature-positive economy, with a focus on risk management and ecosystem preservation.↵
NZIA Target-Setting Protocol Version 1.0↵	2023↵	This protocol by the Net-Zero Insurance Alliance provides guidelines for measuring, standardizing, and comparing science-based decarbonization targets in insurance portfolios. It aims to enhance transparency, accountability, and support a sustainable transition with detailed requirements for target-setting, disclosure, and reporting.↵

# 1. Introduction and background    PSI publications

<b>Key Takeaways from the UNEP FI Leadership Council Meeting 2022</b>	<b>2022</b>	<b>This summary highlights key discussions from a meeting on sustainable finance. It addressed aligning private finance with SDGs, preventing greenwashing, standardizing regulations, and implementing 2023 strategies for harmonizing sustainable finance frameworks across regional contexts.</b>
<b>Annual Overview 2021</b>	<b>2022</b>	<b>This report reviews the company's 2021 achievements, strategies, financial status, and sustainability efforts. It highlights progress in ESG initiatives while presenting financial summaries, portfolio overviews, and the company's vision for growth and a sustainable future.</b>
<b>New risks, new opportunities: Harnessing environmental pollution liability insurance for a sustainable economy</b>	<b>2022</b>	<b>This report explores the potential of environmental pollution liability insurance to support a sustainable economy. It highlights strategies for insurers to manage pollution risks, fulfill responsibilities, and balance economic growth with environmental conservation.</b>
<b>Managing environmental, social and governance risks in life &amp; health insurance business</b>	<b>2022</b>	<b>This guide is the first to address ESG risk management in life and health insurance. Developed under UNEP's PSI Initiative, it outlines methods for assessing and managing ESG risks, providing strategies for aligning insurance practices with sustainability goals across individual and group perspectives.</b>
<b>Insuring the net-zero transition: Evolving thinking and practices</b>	<b>2022</b>	<b>This report explores evolving practices in the insurance sector to support the net-zero transition. Developed under UNEP's PSI Initiative, it highlights strategies and tools for addressing climate change, achieving net-zero goals, and building a sustainable future through effective risk management.</b>
<b>Insuring the climate transition: Enhancing the insurance industry's assessment of climate change futures</b>	<b>2021</b>	<b>This report aims to enhance the insurance sector's efforts to assess and address climate change futures. Developed under UNEP's PSI Initiative, it explores leveraging hindsight and foresight to implement TCFD recommendations and improve risk evaluation and management.</b>



# 1. Introduction and background    PSI publications

<b>Using hindsight and foresight: Update from the TCFD Pilot Project for Insurers</b>	<b>2020</b>	<b>This report details UNEP's PSI Initiative progress, focusing on how insurers use past experiences and future projections to assess climate risks. It highlights strategies and tools for implementing TCFD recommendations to enhance risk evaluation and management effectively.</b>
<b>Beyond 'Business as Usual': Biodiversity Targets and Finance</b>	<b>2020</b>	<b>This report explores biodiversity goals and finance's role, focusing on how businesses assess and manage biodiversity risks. It analyzes the impacts of biodiversity loss, presents frameworks for financial institutions, and emphasizes integrating biodiversity conservation with the SDGs for a sustainable future.</b>
<b>Managing environmental, social and governance risks in non-life insurance business</b>	<b>2020</b>	<b>This report explores biodiversity goals and the role of finance, focusing on managing biodiversity risks across industries. It examines the impacts of biodiversity loss, presents frameworks for financial institutions, and emphasizes aligning biodiversity conservation with the SDGs.</b>
<b>Unwrapping the risks of plastic pollution to the insurance industry</b>	<b>2020</b>	<b>This guide by UNEP FI focuses on managing ESG risks and promoting sustainable practices in the non-life insurance sector. It provides frameworks for identifying and evaluating ESG risks, integrating them into underwriting processes, and aligning strategies with the SDGs.</b>
<b>Protecting our World Heritage, insuring a sustainable future</b>	<b>2019</b>	<b>This guide by UNEP FI explores the insurance sector's role in protecting World Heritage sites and promoting sustainable development. It highlights strategies for balancing environmental conservation with economic sustainability through risk management and financing, emphasizing insurers' responsibilities in this effort.</b>
<b>Risk Assessment and Control of Illegal, Unreported and Unregulated Fishing for the Marine Insurance Industry</b>	<b>2019</b>	<b>This guide by UNEP FI explores the insurance sector's role in protecting World Heritage sites and promoting sustainable development. It highlights strategies for balancing environmental conservation with economic sustainability through risk management and financing, emphasizing insurers' responsibilities in this effort.</b>



# Health is Our Greatest Wealth: How life & health insurers can drive better health outcomes and address the protection gap

The global health crisis has highlighted the importance of population access to healthcare and the need for individuals to take...

## **The Four-Point Plan for Life & Health Insurers** to drive better health outcomes and address the protection gap

### Strategy 1



Offering insurance products that are suitable, affordable and accessible

### Strategy 2



Engaging with policyholders and other stakeholders to promote preventative healthcare

### Strategy 3



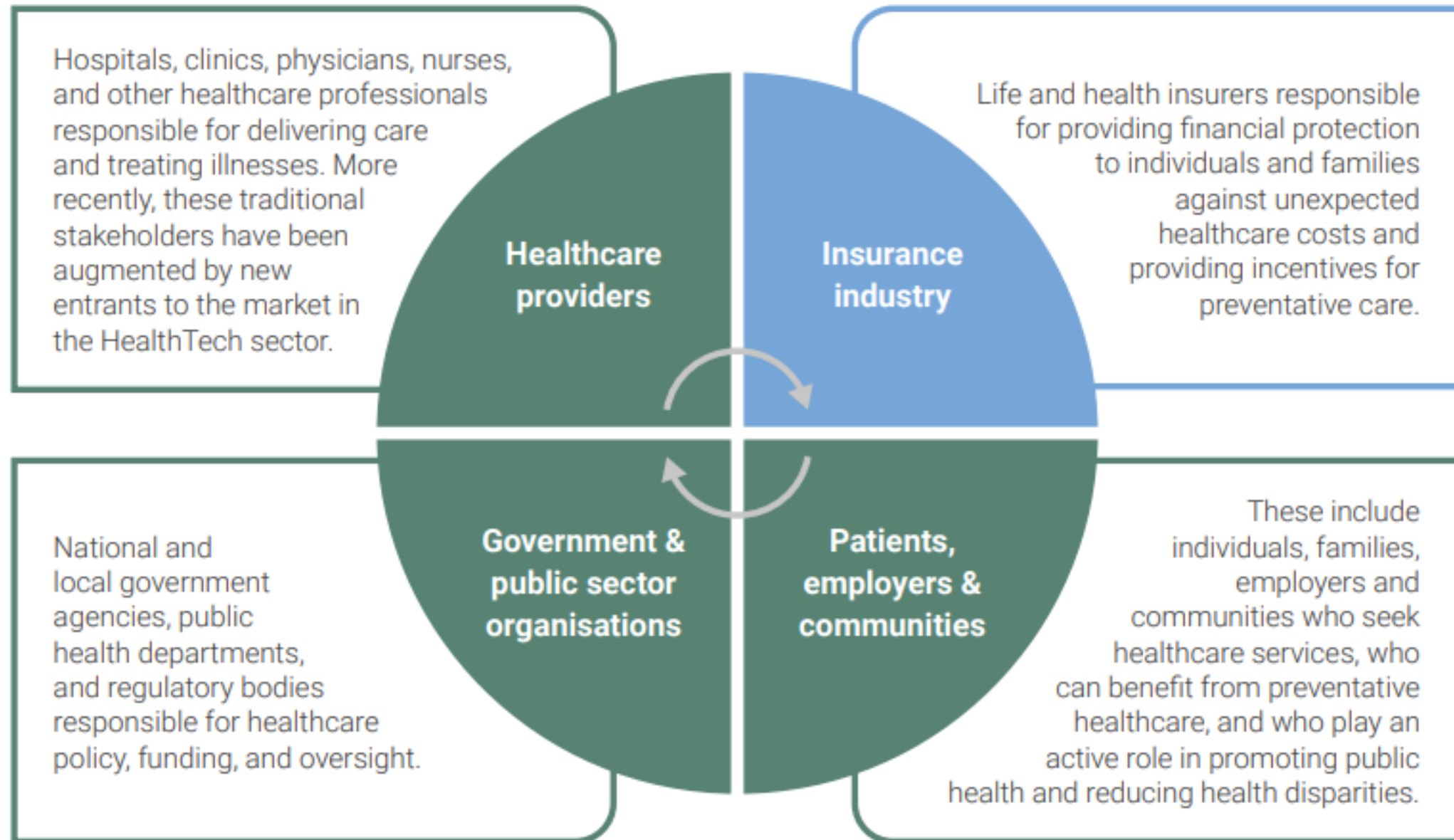
Leveraging technology and ethical use of data to expand access to insurance and support prevention measures

### Strategy 4



Collaborating with healthcare providers, policymakers and local communities

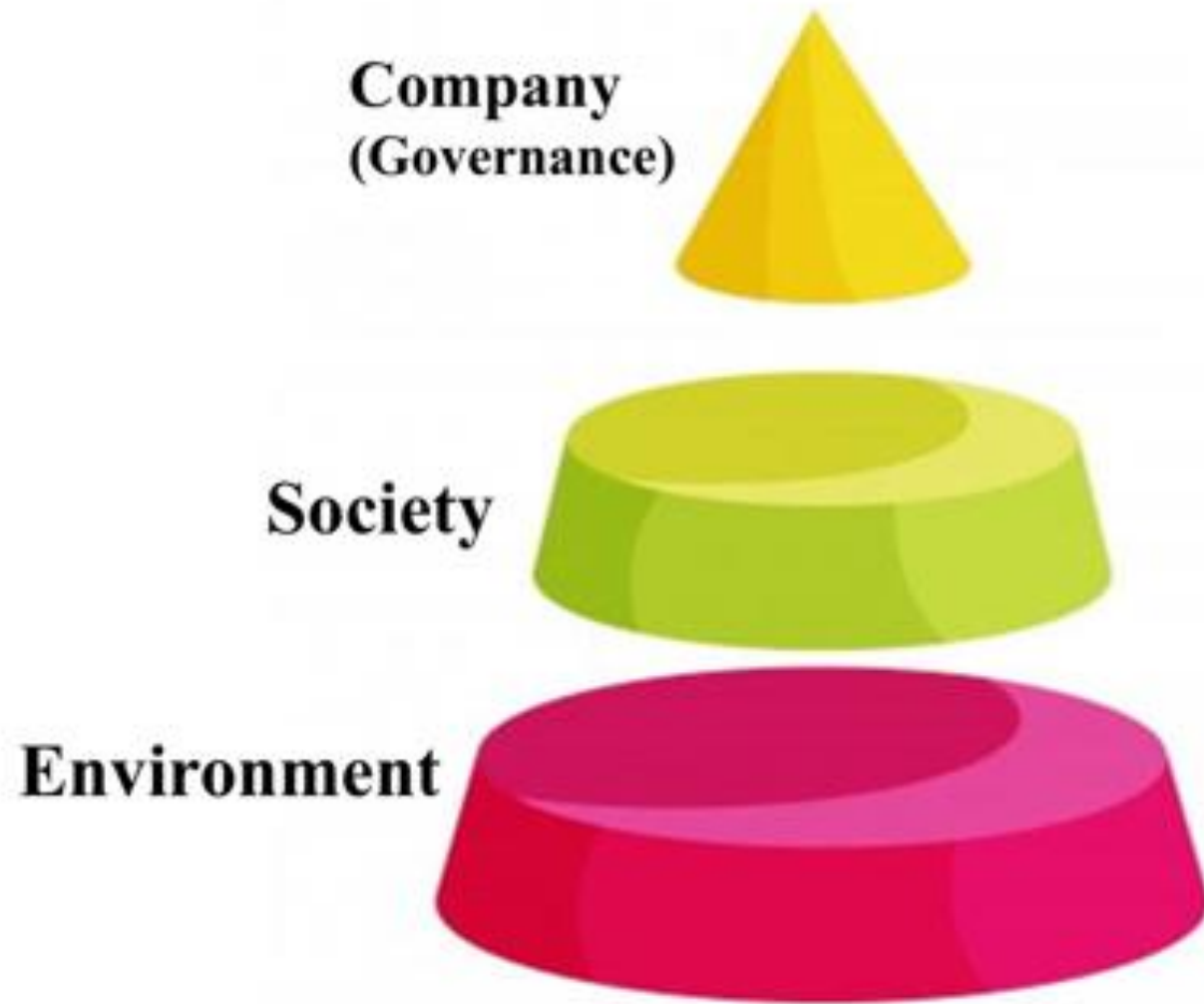
# Key stakeholders involved in improving underlying population health outcomes



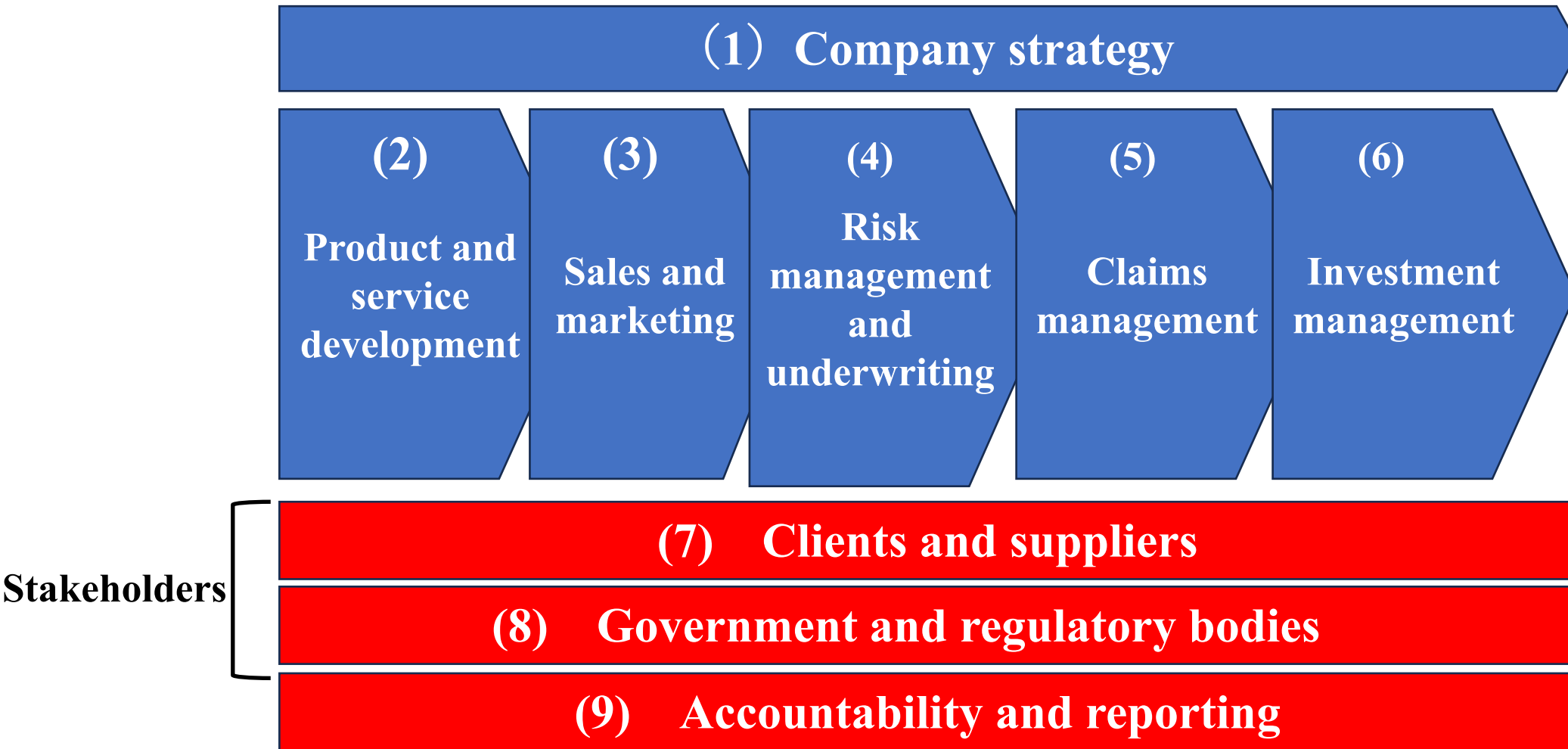
# Appendix: Summary of case studies by theme

Theme	Insurer	Case Study Name	Summary	Impact	Region	Partnership
Theme 1: Health capability and awareness	Swiss Re	Partnership with Women's World banking to provide microinsurance to women in Egypt	Provide microinsurance to women in Egypt	397,700 customers and their family members benefitted from insurance cover by the end of 2021	Egypt	World Bank
	Babyl (digital platform), AXA	Delivering affordable healthcare services through telehealth	Telehealth use in rural and remote areas		East Africa/ Global	National health scheme
	AXA	Inclusive insurance	Emerging market customers' coverage	By 2022, AXA had covered over 10 million emerging market customers across the globe.	Global	Multiple
	AXA XL, Chubb, Liberty Specialty Markets, Sovereign Risk Insurance, Swiss Re Corporate Solutions, and Tokio Marine HCC	COVAX—partnering for access to vaccines	Supporting the bulk purchase of vaccines to lower the cost	Increased vaccination rates in developing countries	Global	Marsh, multiple public and private sector participants

# What is ESG? What is Sustainability Management?



# Value Chain of Insurance Companies





# PSI guidelines

Value chain categories	(1)	(2)	(3)	(4)	(5)
	Company strategy	Product and service development	Sales and marketing	Risk management and underwriting	Claims management
PSI guidelines	<ul style="list-style-type: none"><li>• Establish a company strategy at the Board and executive management levels to identify, assess, manage and monitor ESG issues in business operations</li><li>• Dialogue with company owners on the relevance of ESG issues to company strategy</li><li>• Integrate ESG issues into recruitment, training and employee engagement programmes</li></ul>	<ul style="list-style-type: none"><li>• <b>Develop products and services which reduce risk, have a positive impact on ESG issues and encourage better risk management</b></li><li>• Develop or support literacy programmes on risk, insurance and ESG issues</li></ul>	<ul style="list-style-type: none"><li>• Educate sales and marketing staff on ESG issues relevant to products and services and integrate key messages responsibly into strategies and campaigns</li><li>• Make sure product and service coverage, benefits and costs are relevant and clearly explained and understood</li></ul>	<ul style="list-style-type: none"><li>• Establish processes to identify and assess ESG issues inherent in the portfolio and <b>be aware of potential ESG-related consequences of the company's transactions</b></li><li>• Integrate ESG issues into risk management, underwriting and capital adequacy decision-making processes, including research, models, analytics, tools and metrics</li></ul>	<ul style="list-style-type: none"><li>• Respond to clients quickly, fairly, sensitively and transparently at all times and make sure claims processes are clearly explained and understood</li><li>• <b>Integrate ESG issues into repairs, replacements and other claims services</b></li></ul>

PSI guidelines	Value chain categories	(6)	(7)	(8)	(9)
		Investment management	Clients and suppliers	Government and regulatory bodies	Accountability and reporting
PSI guidelines		<ul style="list-style-type: none"> <li>• <b>Integrate ESG issues into investment decision-making and ownership practices</b> (e.g. by implementing the Principles for Responsible Investment)</li> </ul>	<ul style="list-style-type: none"> <li>• Dialogue with clients and suppliers on the benefits of managing ESG issues and the company's expectations and requirements on ESG issues</li> <li>• Provide clients and suppliers with information and tools that may help them manage ESG issues</li> <li>• Integrate ESG issues into tender and selection processes for suppliers</li> <li>• <b>Encourage clients and suppliers to disclose ESG issues and to use relevant disclosure or reporting frameworks</b></li> <li>• Promote the adoption of the Principles</li> <li>• Support the inclusion of ESG issues in professional education and ethical standards</li> </ul>	<ul style="list-style-type: none"> <li>• Support prudential policy, regulatory and legal frameworks that enable risk</li> <li>• Dialogue with intergovernmental and non-governmental organisations to support sustainable development by providing risk management and risk transfer expertise</li> <li>• Dialogue with business and industry associations to better understand and manage ESG issues across industries and geographies</li> <li>• Dialogue with academia and the scientific community to foster research and educational programmes on ESG issues</li> <li>• <b>Dialogue with media to promote public awareness of ESG issues and good risk management reduction, innovation and better management of ESG issues</b></li> <li>• Dialogue with governments and regulators to develop integrated risk management approaches and risk transfer solutions</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Assess, measure and monitor the company's progress in managing ESG issues and proactively and regularly disclose this information publicly</b></li> <li>• Participate in relevant disclosure or reporting frameworks</li> <li>• Dialogue with clients, regulators, rating agencies and other stakeholders to gain mutual understanding on the value of disclosure through the Principles</li> </ul>



# PSI Participants (As of September 2nd 2025)

## Latest Signatory Stats:

**Over 170  
Signatories**

**112  
Supporting  
Institutions**

**In Asia Pacific      31**

**18**



# The insurance industry and sustainable development: A UN system-wide agenda



UN Global Compact



UN Framework  
Convention  
on Climate Change



UN Environment



International  
Labour Organization



**PSI**  
Principles for Sustainable Insurance



**UN DESA**  
UN Dept. of  
Economic & Social  
Affairs



**WHO**  
World Health Organization



Office of the UN High Commissioner  
for Human Rights



**PSI**  
Principles  
for Sustainable  
Insurance



UN Human Settlements Programme



The United Nations Office for Disaster Risk Reduction  
UN Office for Disaster Risk Reduction



UN Development  
Programme



Food & Agriculture  
Organization



World  
Food Programme



UN Educational,  
Scientific & Cultural  
Organization



World  
Meteorological  
Organization



UN Conference on Trade  
& Development

# PSI market events: Shaping the global sustainable insurance agenda



**PSI**  
Principles for Sustainable Insurance

**The US**



**The UK**



**Switzerland**



**Germany**



**Costa Rica**



**Brazil**



**Morocco**



**The Philippines**



**Colombia**



**South Africa**



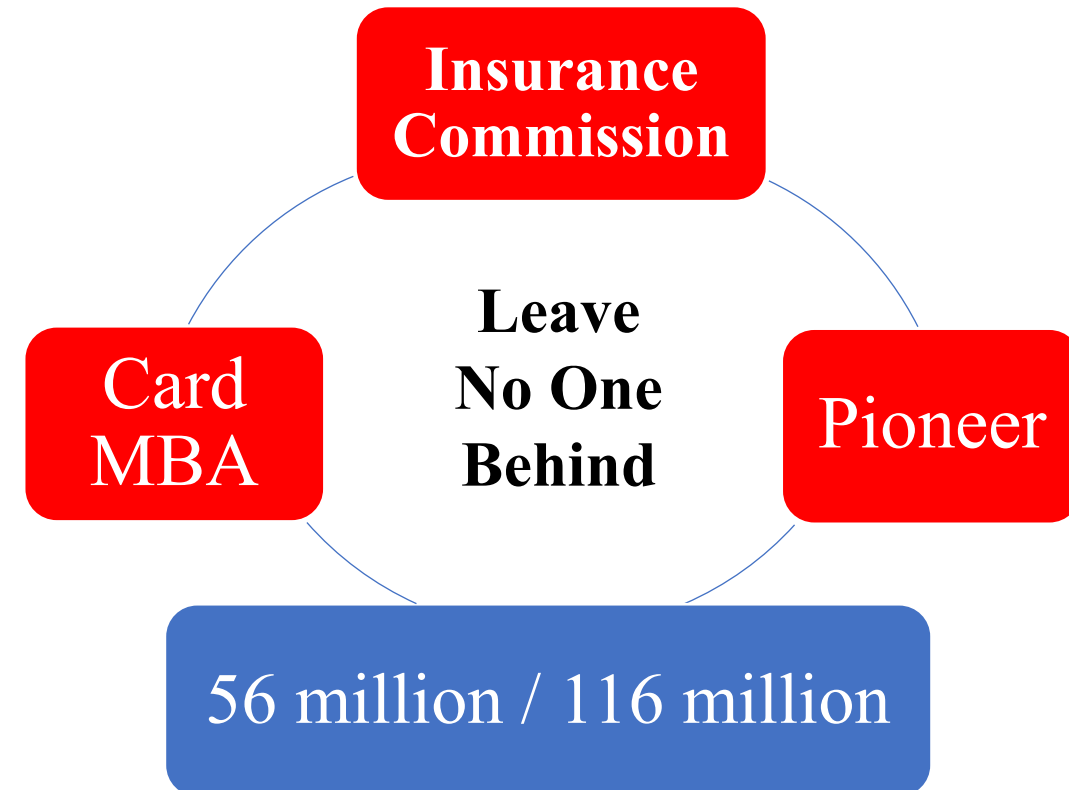
**Australia**



# Policy Recommendations to Insurance Regulators and Insurers

- (1) Incentivize insurance regulators and insurers to develop inclusive insurance for extreme weather impacts and associated health issues
- (2) Launch awareness programs to educate businesses and individuals as well as worldwide insurance regulators and insurers on inclusive insurance benefits

## Case Study from the Philippines

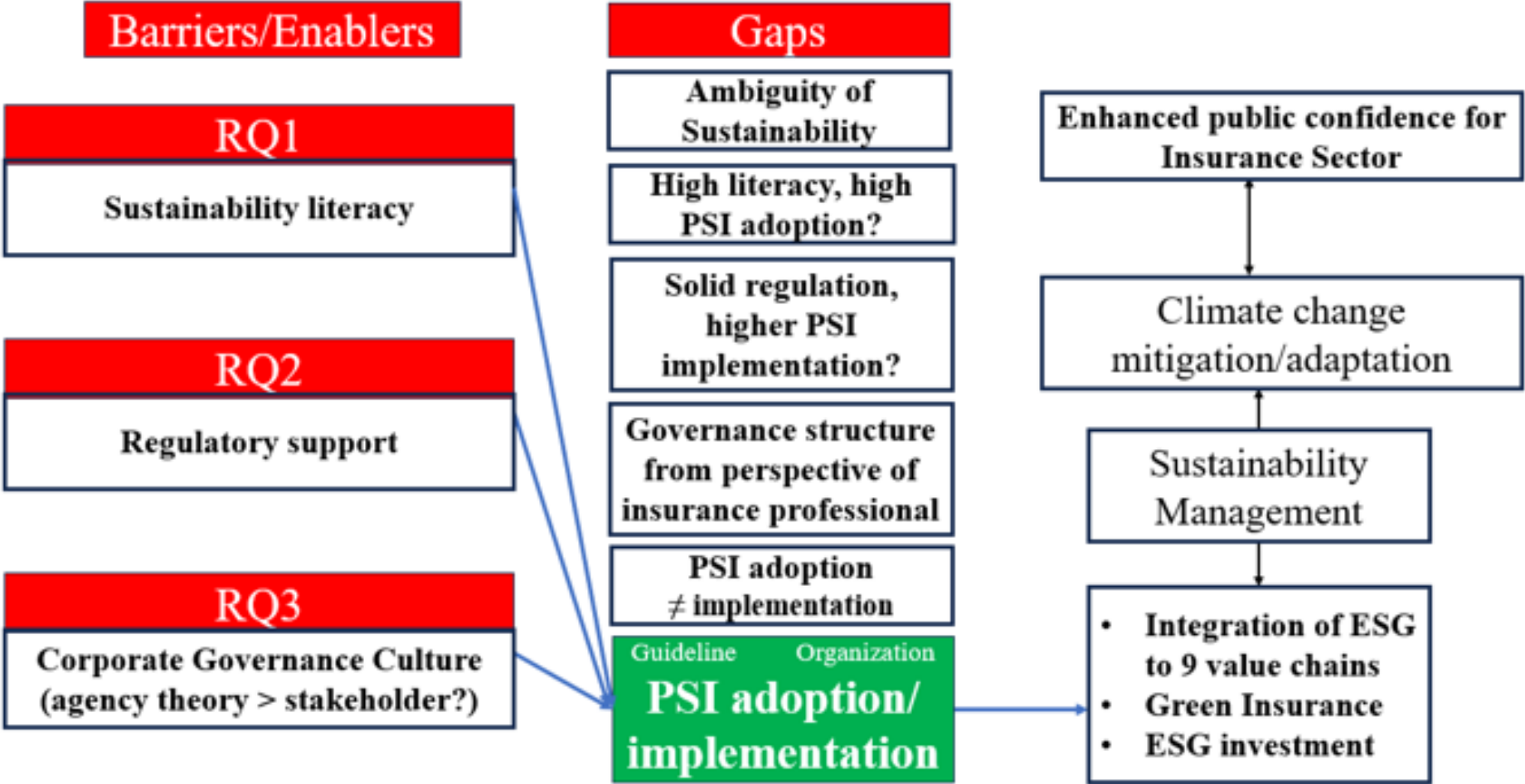


# Case Study:Pioneer’s Microinsurance Introduction in the Philippines

Country	Case Name	Key Features	Contributing SDGs
Philippines	CARD MBA (Mutual Benefit Association)	Community-based mutual microinsurance	SDG 1: No Poverty SDG 5: Gender Equality SDG 13: Climate Action
		Covers life, calamity, and loan protection	
		Fast claims processing (within 1–5 days)	
		Strong women-led governance	

- 1.Wide range of products offered (Agriculture Microinsurance, Health Microinsurance, Life Insurance, Non-life insurance)
- 2. Pioneer and Government Collaboration
- 3. Flexible adjustment of regulations
- 4. Large number of subscribers
- 5. NANAY's activities (sales staff contributions)

REPORT TITLE:  
Mainstreaming PSI in the Asian Insurance Industry













### **3. Nationally Determined Contribution (NDC)**

# The Paris Agreement, adopted at COP21 in 2015



**The Agreement sets goal to guide all nations to reduce GHG emissions and limit the global temperature increase in this century to 2 °C above pre-industrial levels.**



# Paris Agreement 29 Articles

Structure of the Paris Agreement	
Article 2	Objectives
Article 4	Mitigation
Article 7	Adaptation
Article 8	Losses and Damages
Article 9	Finance
Article 10	Technology transfer
Article 11	Capacity development
Article 13	Transparency framework
Article 14	Global Stocktaking

Article 6

Voluntary Corporation to  
Implement NDCs  
Carbon Trading including JCM

International transfer of mitigation outcomes  
(ITMOs)  
Sustainable Development Mechanism or SDM

# Nationally Determined Contribution (NDC)?

**NDCs are national climate action plans by each country under the Paris Agreement. A country's NDC outlines how it plans to reduce greenhouse gas emissions to help meet the global goal of limiting temperature rise to 1.5C and adapt to the impacts of climate change.**





# Where to get NDC?

UNFCCC web-site: <https://unfccc.int/>

⇒ “Documents and decisions” ⇒ “Submissions” ⇒ “NDCs”



## Documents and decisions.

### NDC Registry.

In accordance with Article 4, paragraph 12 of the Paris Agreement, NDCs communicated by Parties shall be recorded in a public registry maintained by the secretariat.



Credit: Axel Poeschl/CPDR

Showing 15 of 195 results

Party	Title	Language	Translation	Version	Status	Submission Date	Additional documents
Afghanistan	Afghanistan First NDC	English		1	Active	23/11/2016	
Albania	Albania First NDC (Updated submission)	English		2	Active	12/10/2021	
Algeria	Algeria First NDC	French	Algeria First NDC Translation	1	Active	20/10/2016	
Andorra	Andorra 2022 NDC Update	Spanish		1	Active	09/11/2022	Andorra 2022 NDC Update (Draft)
Angola	Angola First NDC (Updated submission)	English		2	Active	31/05/2021	
Antigua and Barbuda	Antigua and Barbuda First NDC (Updated submission)	English		2	Active	02/09/2021	
Argentina	Argentina Second NDC (Updated submission)	Spanish	Argentina Second NDC (Updated submission)	1	Active	02/11/2021	Argentina Second NDC (Archived)

Documents

Decisions

Resources

Session documents

Submissions

All Party-authored reports

Submission portal

NDCs

Adaptation communications

National adaptation plans

REDD+ submissions

Go to NDC Registry

# Biennial Transparency Report (BTR)



<https://unfccc.int/sites/default/files/resource/First%20Biennial%20Transparency%20Report%20-%20Sri%20Lanka%20-%202024.pdf>

# NDC of participants' country/region

<b>Cambodia</b>	42% reduction from BAU by 2030 (conditional). Focus on renewables and land-use management.
<b>China</b>	Peak CO <sub>2</sub> emissions before 2030; carbon neutrality by 2060. Focus on renewables and energy efficiency.
<b>Indonesia</b>	31.89% reduction from BAU by 2030 (unconditional); 43.2% with international support. Focus on forestry and energy.
<b>Malaysia</b>	45% reduction in emissions intensity of GDP by 2030 (conditional). Focus on low-carbon cities and forest conservation.
<b>Mongolia</b>	22.7% reduction from BAU by 2030 (conditional). Focus on livestock management and renewable energy.
<b>Philippines</b>	75% reduction from BAU by 2030 (72.29% conditional). Key sectors: energy, agriculture, transport.

# NDC of participants' country/region

<b>Sri Lanka</b>	14.5% reduction from BAU by 2030 (unconditional); 25% with support. Focus on energy and transport.
<b>Taiwan</b>	Net-zero by 2050. Emphasis on renewable energy, electrification, and industrial decarbonization.
<b>Thailand</b>	30% reduction from BAU by 2030 (unconditional); 40% with support. Focus on energy, transport, and waste.
<b>Turkey</b>	41% reduction from BAU by 2030. Focus on energy, transport, and industrial emissions.
<b>Uzbekistan</b>	35% reduction from 2010 levels by 2030. Focus on energy efficiency and renewable energy.
<b>Vietnam</b>	15.8% reduction from BAU by 2030 (unconditional); 43.5% with support. Focus on energy and forestry.



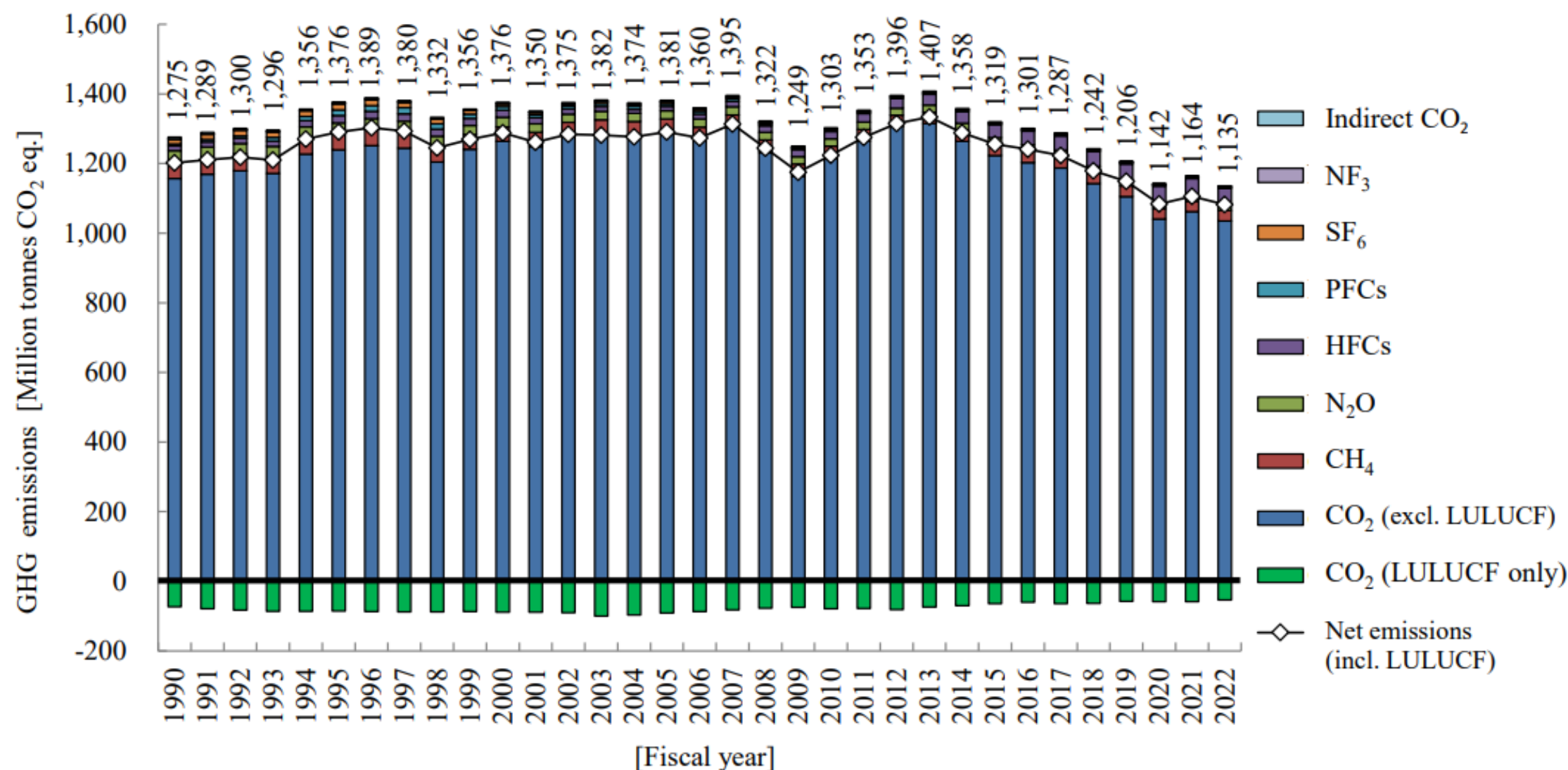
# Japan's NDC on April 22, 2021

## Japan's Nationally Determined Contribution (NDC)

### Japan's Greenhouse Gas Emission Reduction Target

Japan aims to reduce its greenhouse gas emissions by **46 percent in fiscal year 2030** from its fiscal year 2013 levels, setting an ambitious target which is aligned with the long-term goal of achieving net-zero by 2050. Furthermore, Japan will continue strenuous efforts in its challenge to meet the lofty goal of cutting its emission by 50 percent.

# GHG emissions in Japan (FY1990-2022)



(Source) National Greenhouse Gas Inventory Document of JAPAN 2024

## **4. Measurement, Reporting, and Verification (MRV) of greenhouse gas emissions**

# **Definition of MRV**

**MRV refers to the systematic processes used by countries to:**

- Measure greenhouse gas (GHG) emissions and mitigation action**
- Report progress toward climate targets, especially NDC**
- Verify the accuracy and credibility of reported data through expert review**

**Under the Paris Agreement, MRV is embedded within the Enhanced Transparency Framework (ETF) established by Article 13, which requires all Parties to:**

- Submit national GHG inventory reports**
- Provide information necessary to track progress of NDCs**
- Participate in technical expert reviews and multilateral consideration to ensure transparency and accountability**

# MRV Information Platform



## MRV Information Platform for ASEAN Region



TOP

Publication

Development of MRV



Links

### MRV Information Platform for ASEAN Region

Providing information on transparency of  
climate actions taken in ASEAN Member  
States (AMS).



The MRV Information Platform is a regional initiative developed under the PaSTI-JAIF project to support ASEAN Member States in enhancing transparency of climate actions. It provides data, tools, and guidelines for **Measurement, Reporting, and Verification (MRV)** of greenhouse gas emissions

<https://mrv-info.com/index.html>

# ASEAN Taxonomy



**The ASEAN Taxonomy is a regional classification framework designed to **promote economic activities that contribute to sustainability across Southeast Asia.****

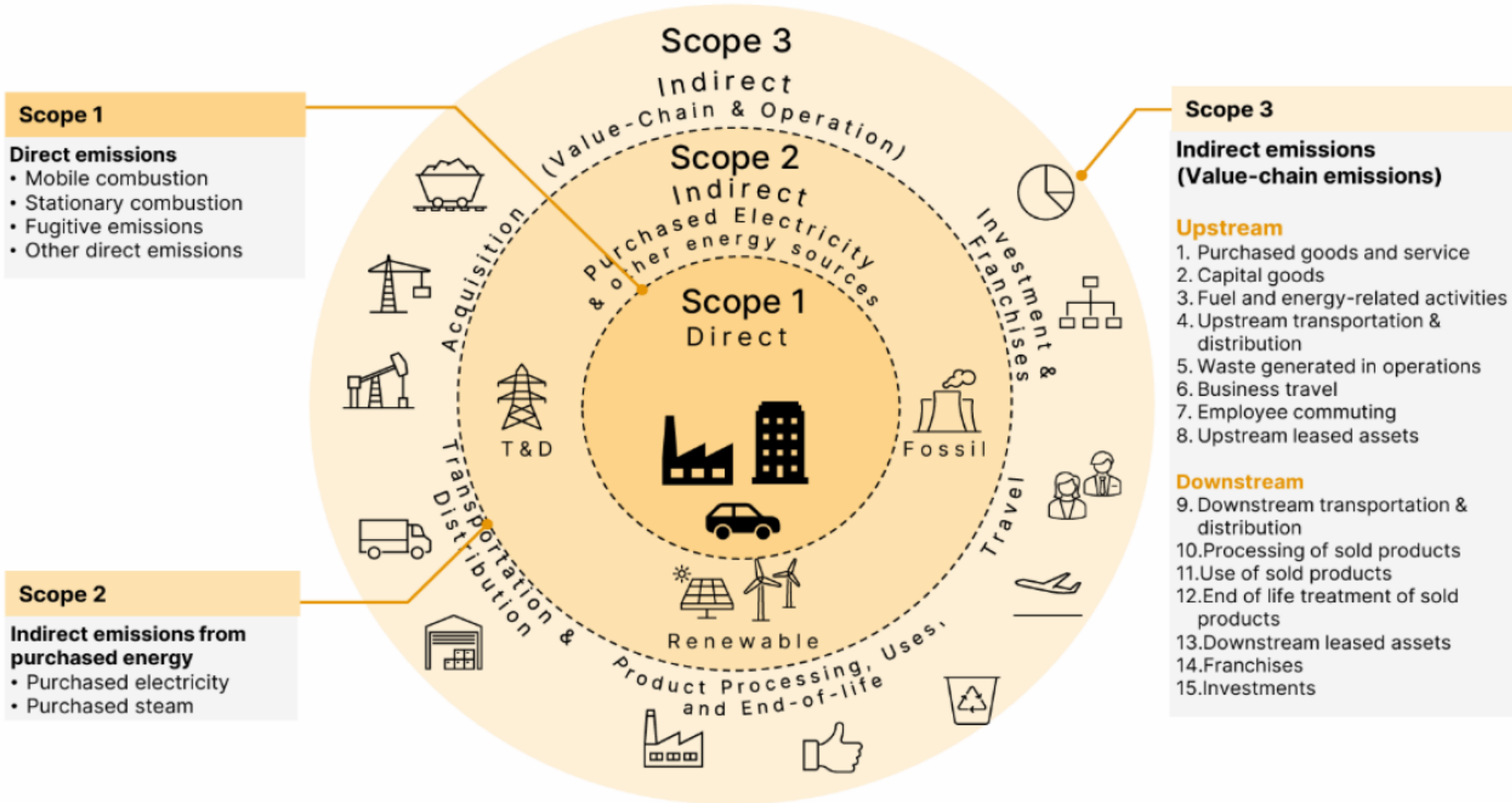
**It provides a common language for identifying which activities are considered environmentally sustainable, focusing on four key Environmental Objectives (EOs): **climate change mitigation, climate change adaptation, biodiversity protection, and circular economy transition.** By guiding investment decisions and aligning national efforts, the taxonomy supports ASEAN's broader sustainable development goals**

# Developments in the Disclosure of Sustainability-Related Information in AMS

	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
Covered companies or sectors	Listed Companies	Listed Companies	Publicly Listed Companies	Listed Companies	Listed Companies	Listed Companies
Scope 1 and 2	No	Yes	Yes	Yes	Yes	No
Scope 3	No	No	No	Yes	Yes	No
Methodology for calculation	No	No	No	GHG Protocol or other international Methodology	No	No
IT platform for submitting data	No	Yes Sustainability Reporting Platform	No	Yes <a href="#">SGX ESGenome</a>	Yes	No



# Operational Boundary



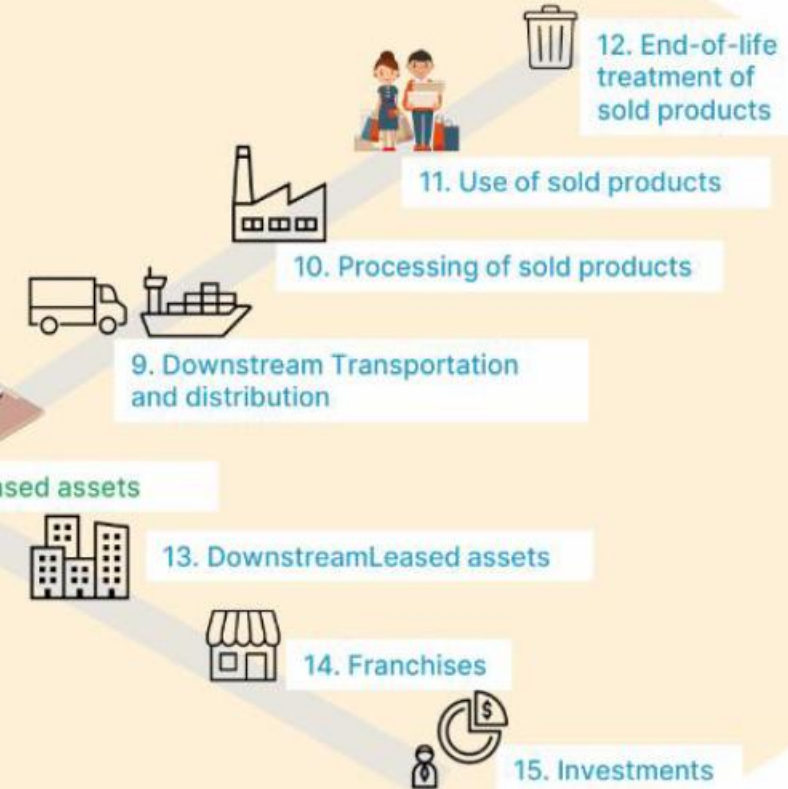
# Classification of GHG emissions: Scope 3

Other Indirect Emissions

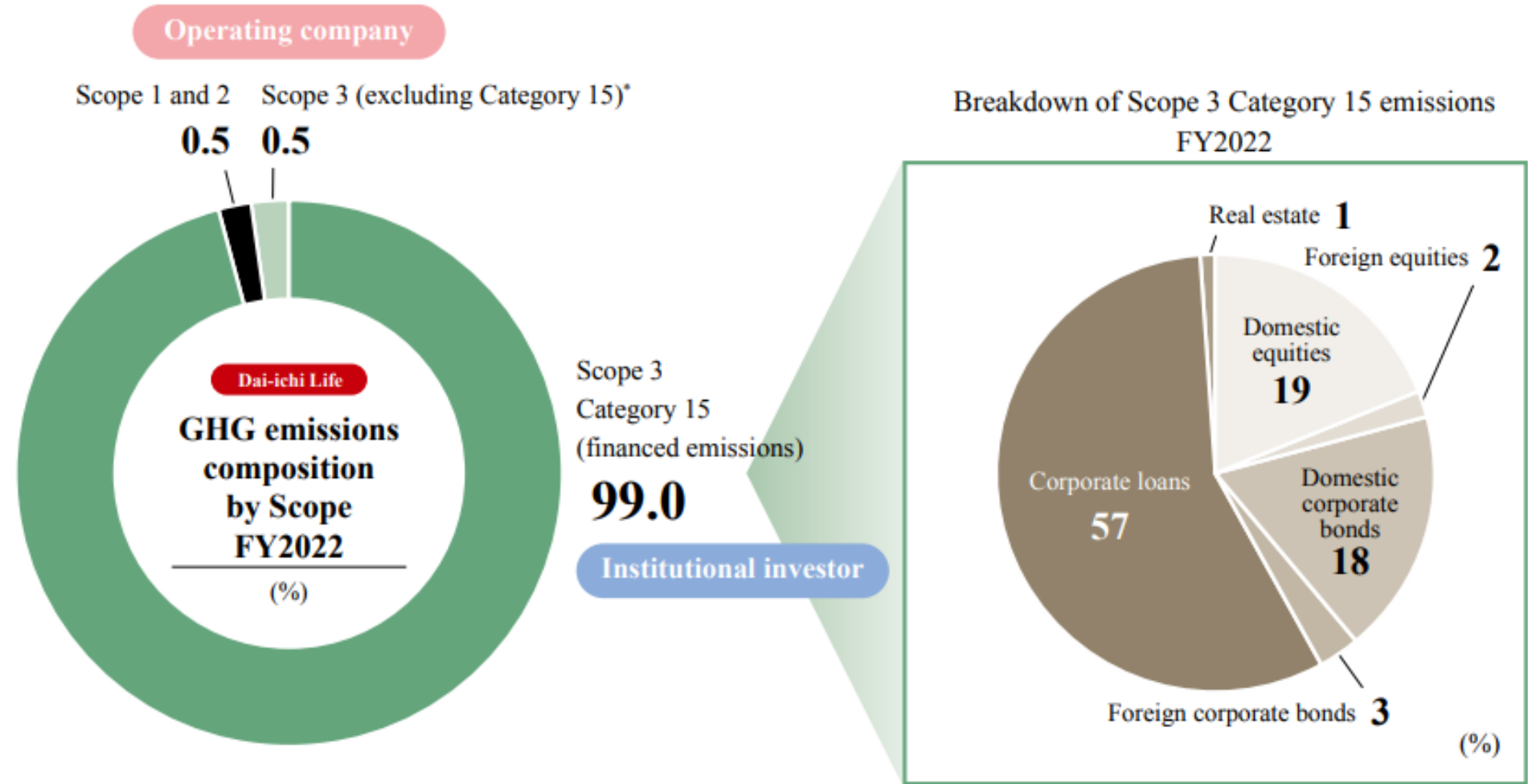
## Scope 3: Upstream



## Scope 3: Downstream



# Scope 1, 2, and 3 for Dai-ichi Life Holdings



**Scope 1** Direct emissions of Dai-ichi Life

**2** Indirect emissions by the use of electricity, etc. supplied by others

**3** Indirect emissions other than Scope 1 and Scope 2 (= emissions of others related to Dai-ichi Life activities)

# Proprietary Investments GHG emissions Scope1-3

Proprietary investments GHG emissions (Scope 1-3) - TOTAL  
t in CO<sub>2</sub>e

	2024	2023	Delta in %
<b>Scope 1 Emissions</b>			
Gross Scope 1 GHG emissions from on balance real assets	17,723.7	28,778.8	(38.4)
<b>Scope 2 GHG Emissions</b>			
Gross location-based Scope 2 GHG emissions from on balance real assets	74,180.8	60,179.5	23.3
Gross market-based Scope 2 GHG emissions from on balance real assets	52,804.1	38,062.9	38.7
<b>Significant Scope 3 GHG emissions</b>	<b>48,717,427</b>	<b>57,359,001.7</b>	<b>(15.1)</b>
13 Downstream leased assets	90,974.1	90,903.6	0.1
15 Investments	48,626,453.1	57,268,098.1	(15.1)
<b>Total proprietary investments GHG emissions (location-based)</b>	<b>48,809,331.7</b>	<b>57,447,960.0</b>	<b>(15.0)</b>
<b>Total proprietary investments GHG emissions (market-based)</b>	<b>48,787,955.1</b>	<b>57,425,843.4</b>	<b>(15.0)</b>

(Source) Dai-ichi Life Holdings  
Sustainability Report 2024

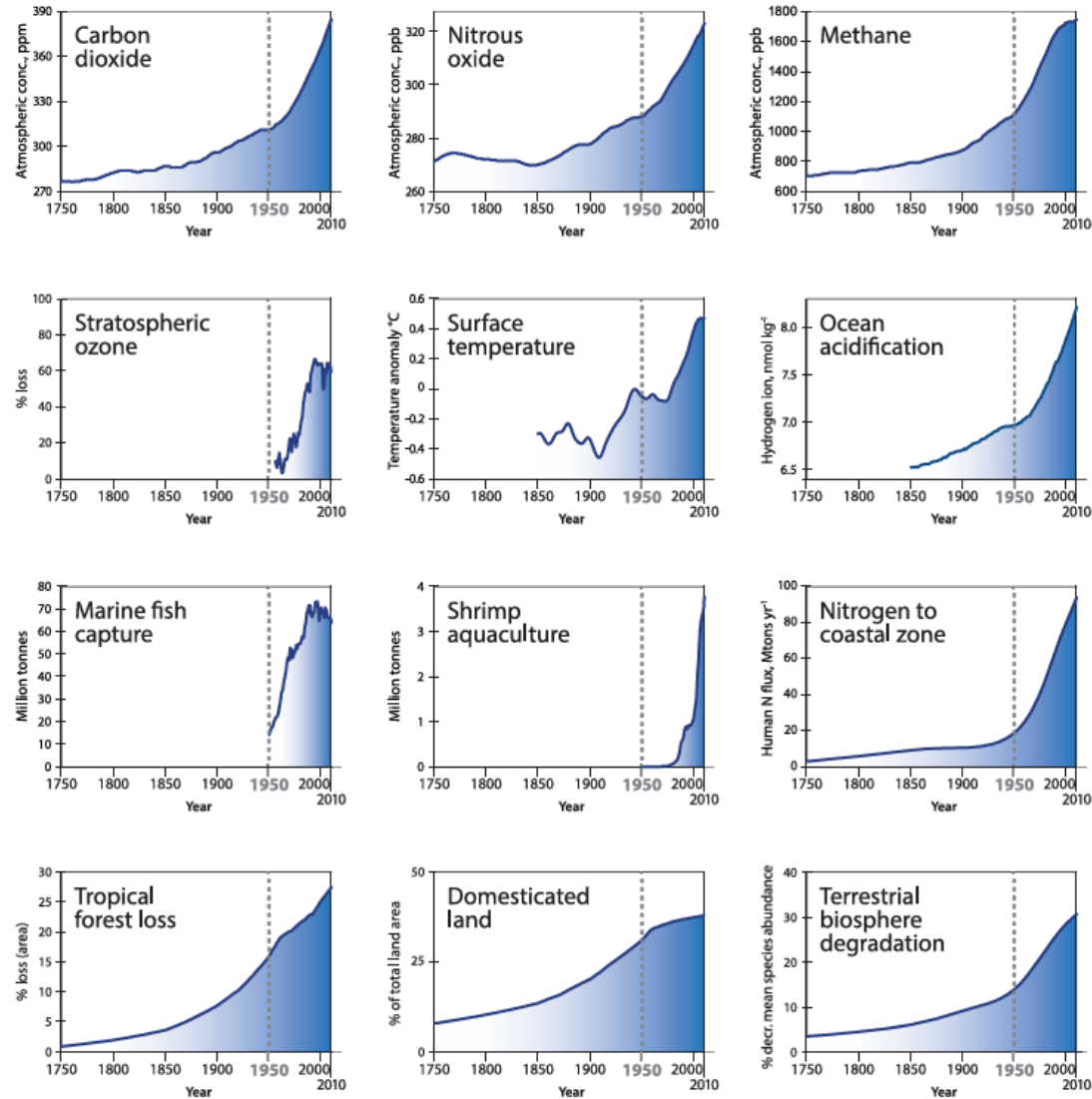
## **5. Risk related to Climate Change**



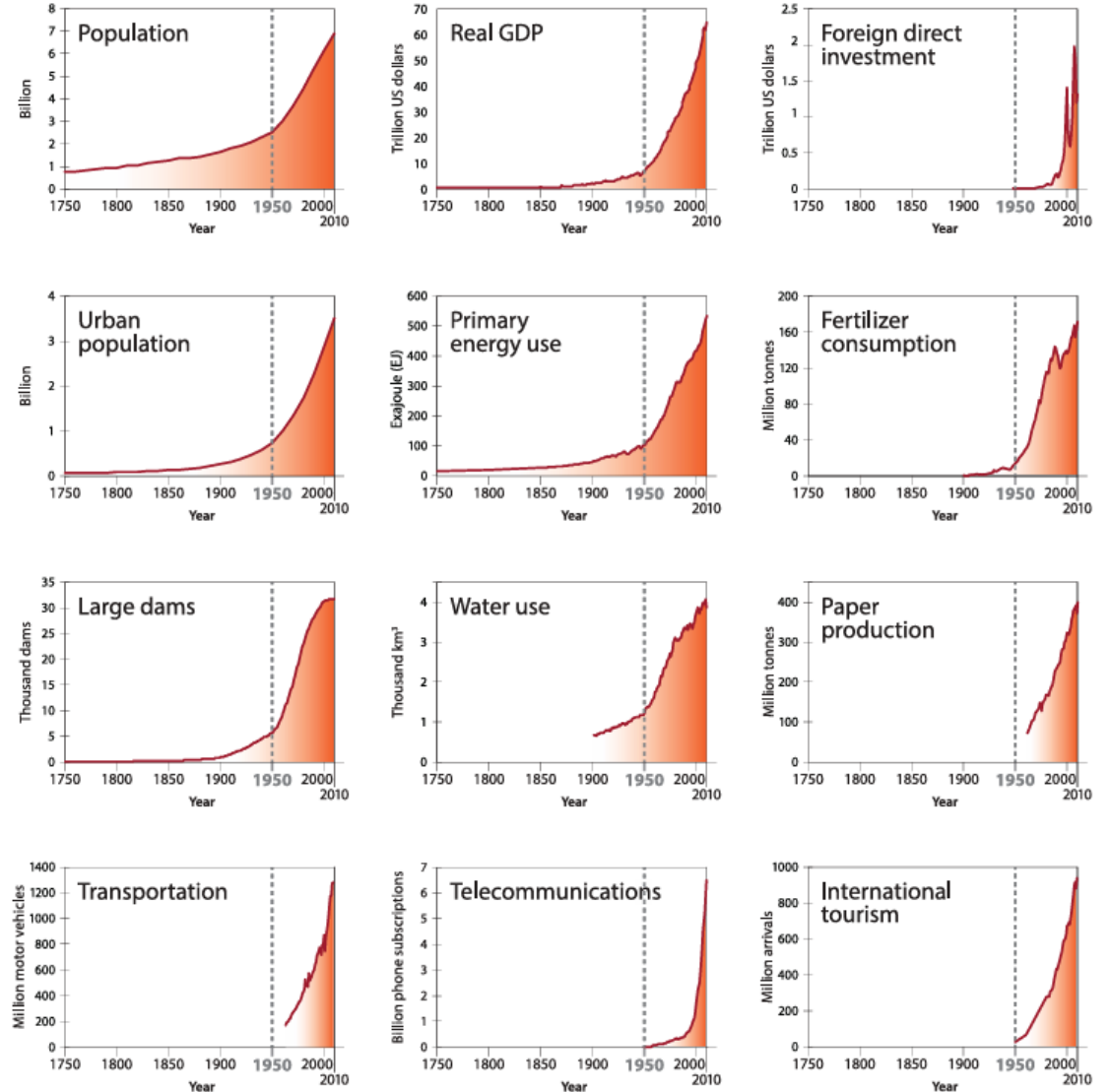
# The Great Acceleration

[https://www.bpb.de/system/files/dokument\\_pdf/Steffen2015ThetrajectoryoftheAnthropoceneTheGreatAcceleration.pdf](https://www.bpb.de/system/files/dokument_pdf/Steffen2015ThetrajectoryoftheAnthropoceneTheGreatAcceleration.pdf)

## Earth system trends



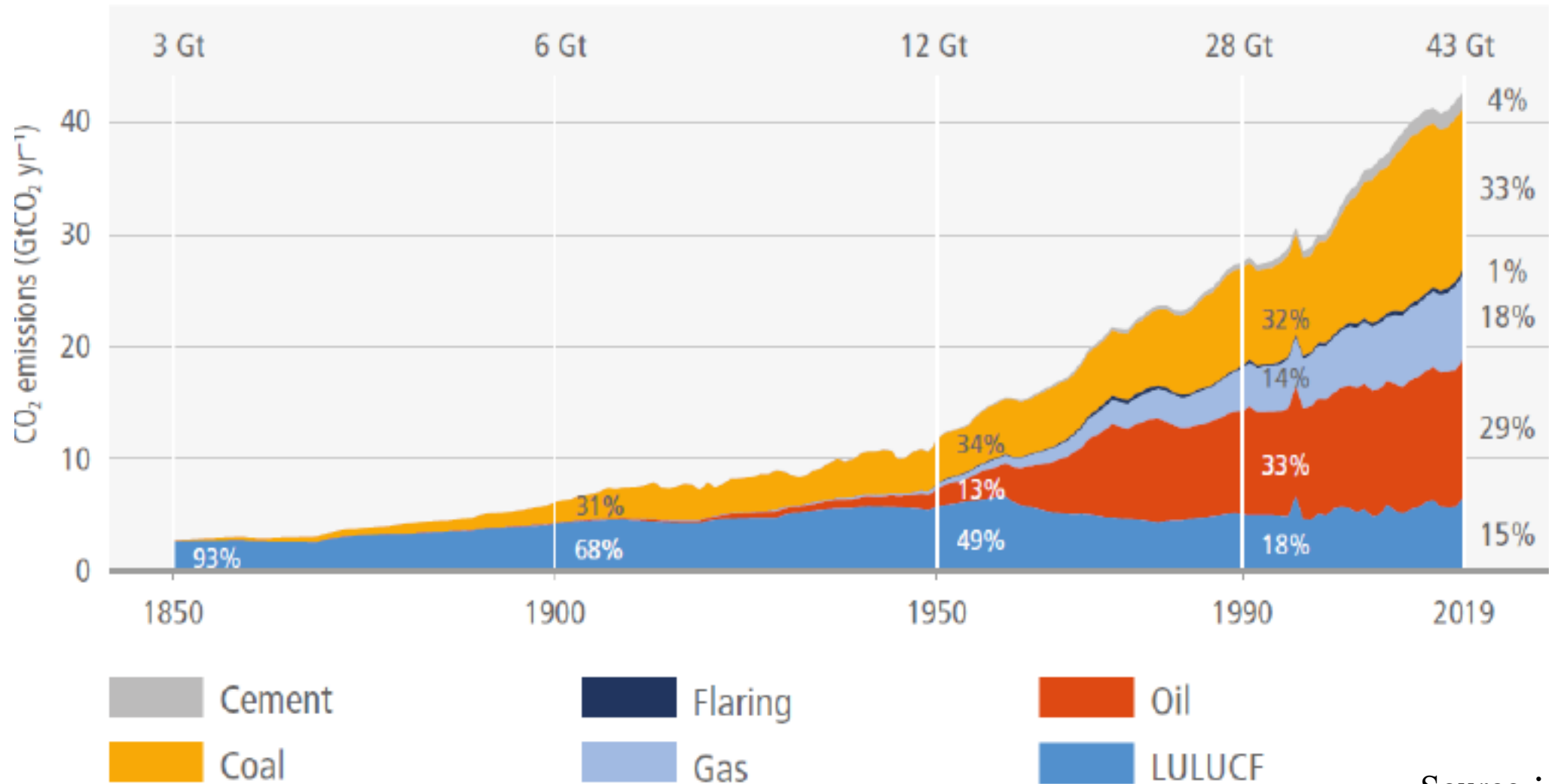
## Socio-economic trends



(Source) Will Steffen et al (2015) The trajectory of the Anthropocene: The Great Acceleration

# Cumulative CO<sub>2</sub> emissions

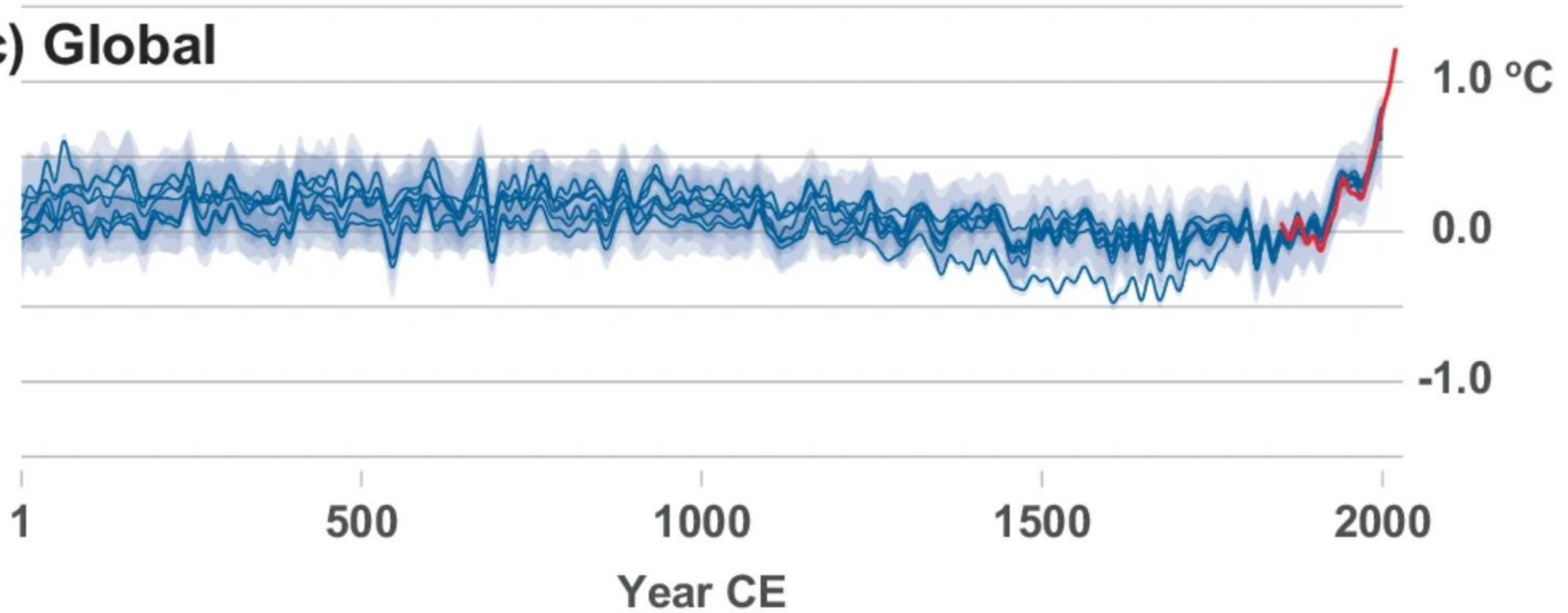
(a) Long term trend of anthropogenic CO<sub>2</sub> emissions sources



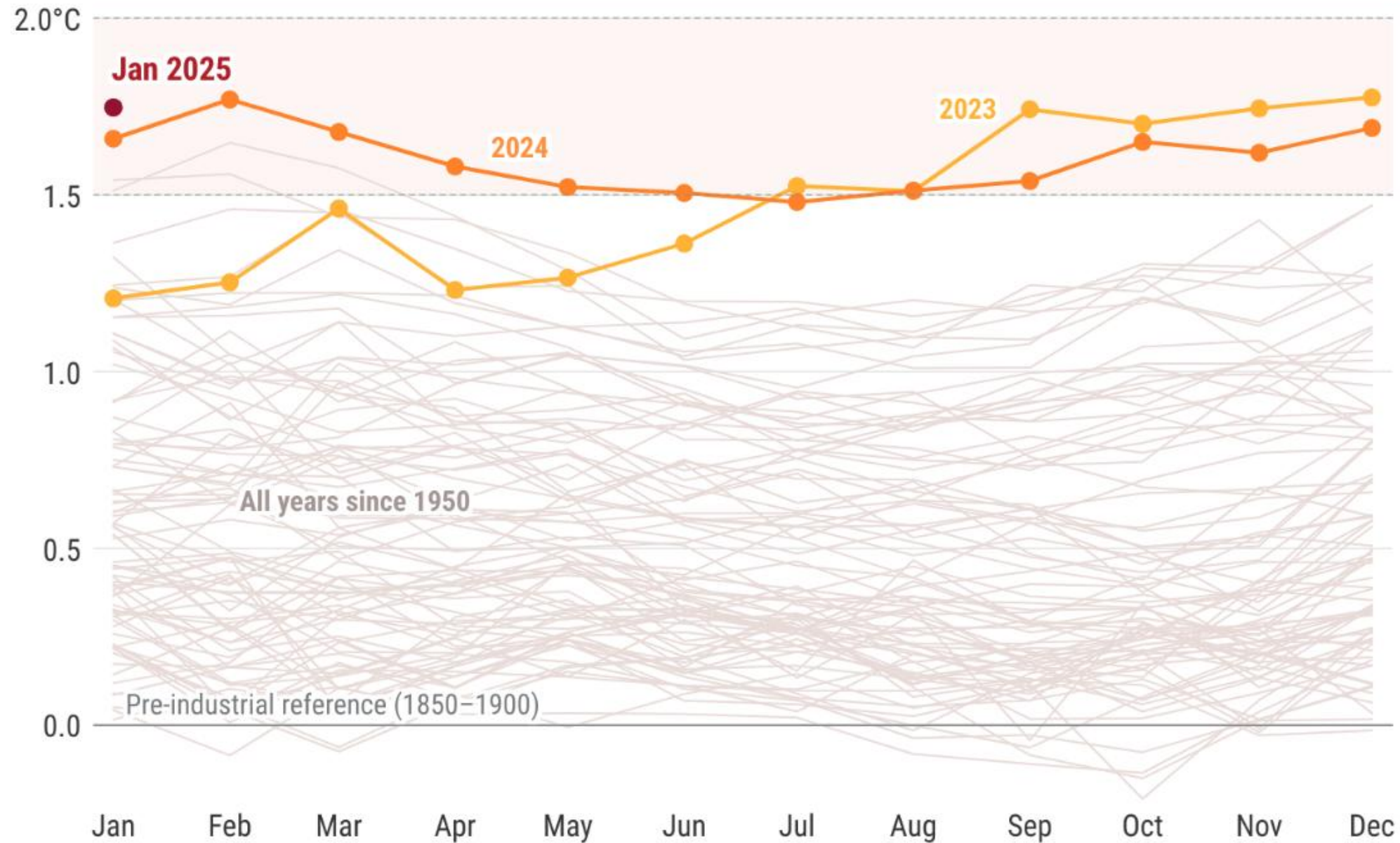
Source : AR6/WG3  
chapter 2, Figure 2.7

# Global land temperature

**(c) Global**



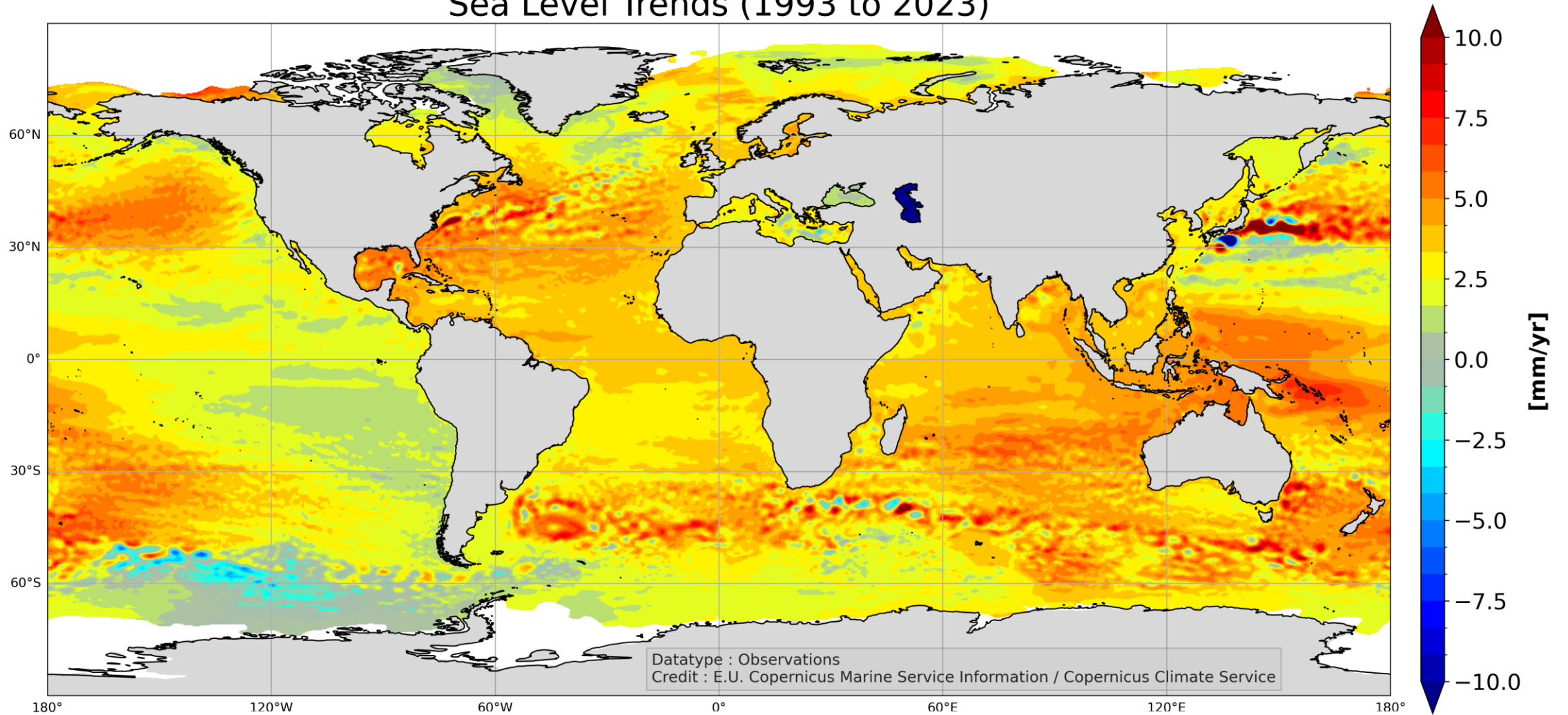
# Global Sea Surface temperature





# Global Sea Level Rise

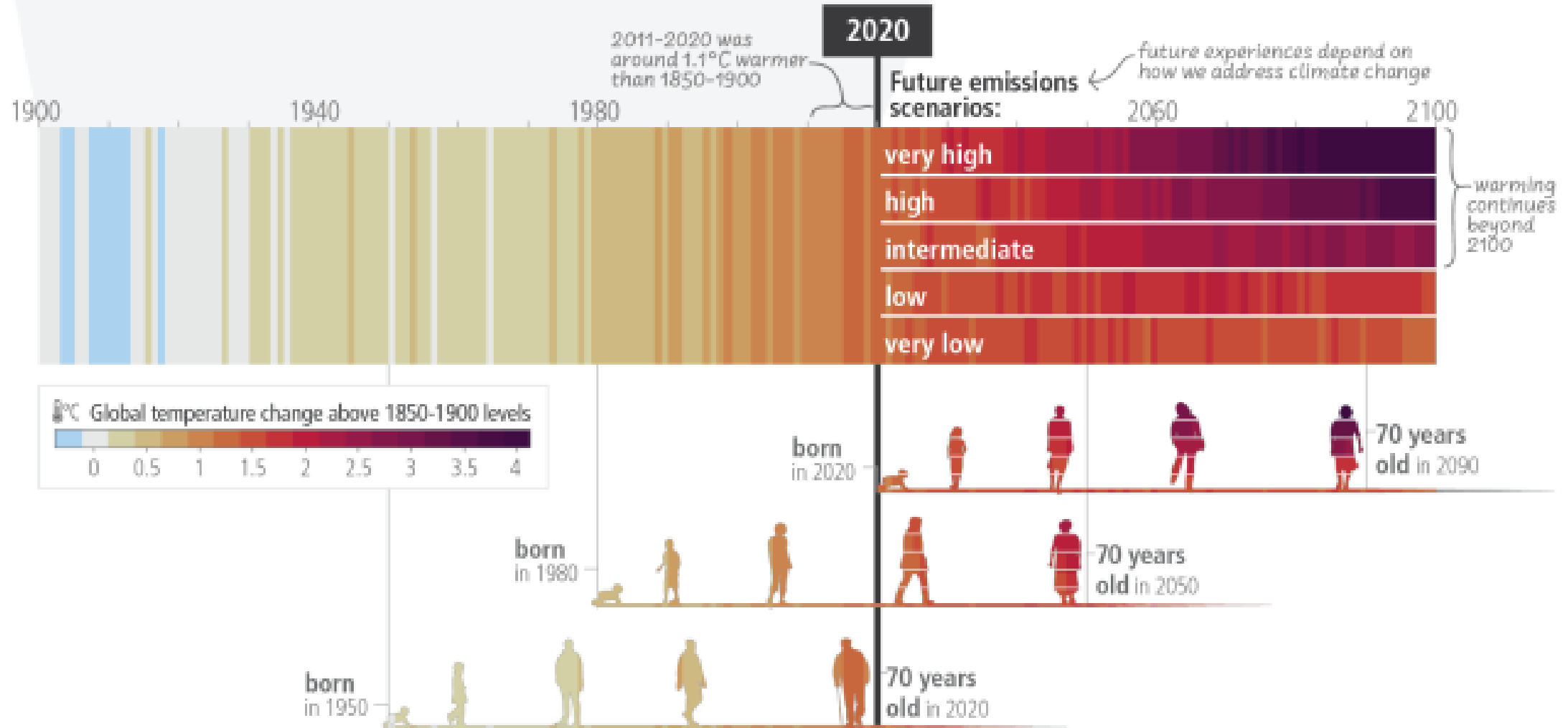
Sea Level Trends (1993 to 2023)





# IPCC 6th Assessment Report (AR6)

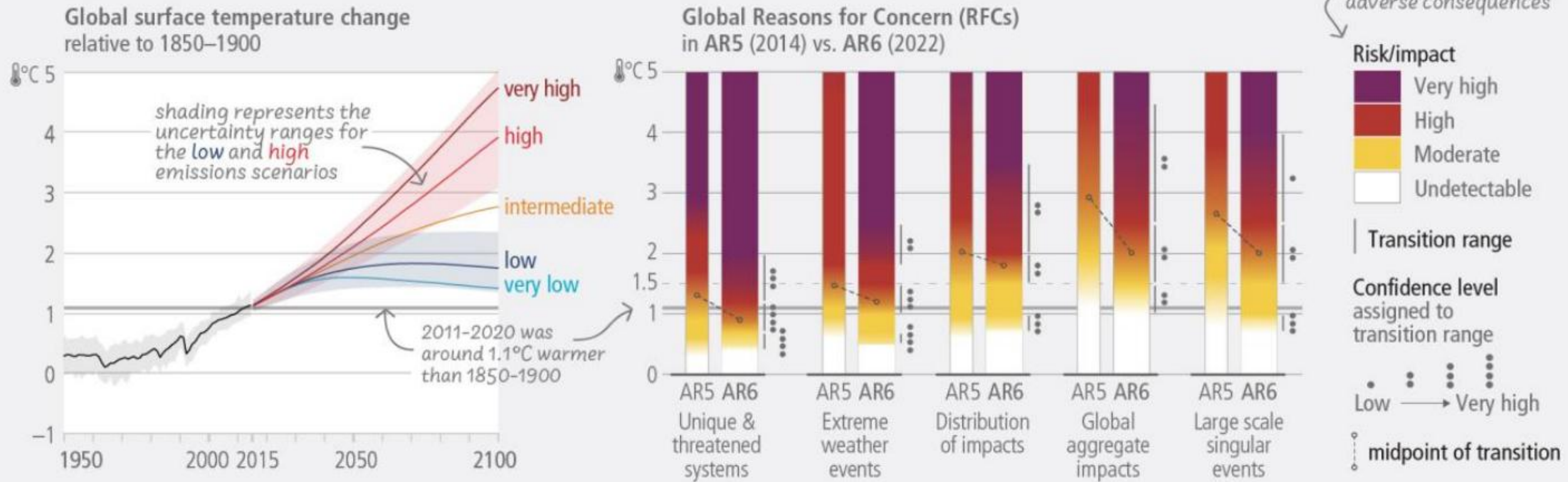
c) The extent to which current and future generations will experience a hotter and different world depends on choices now and in the near-term



# IPCC 6th Assessment Report (AR6)

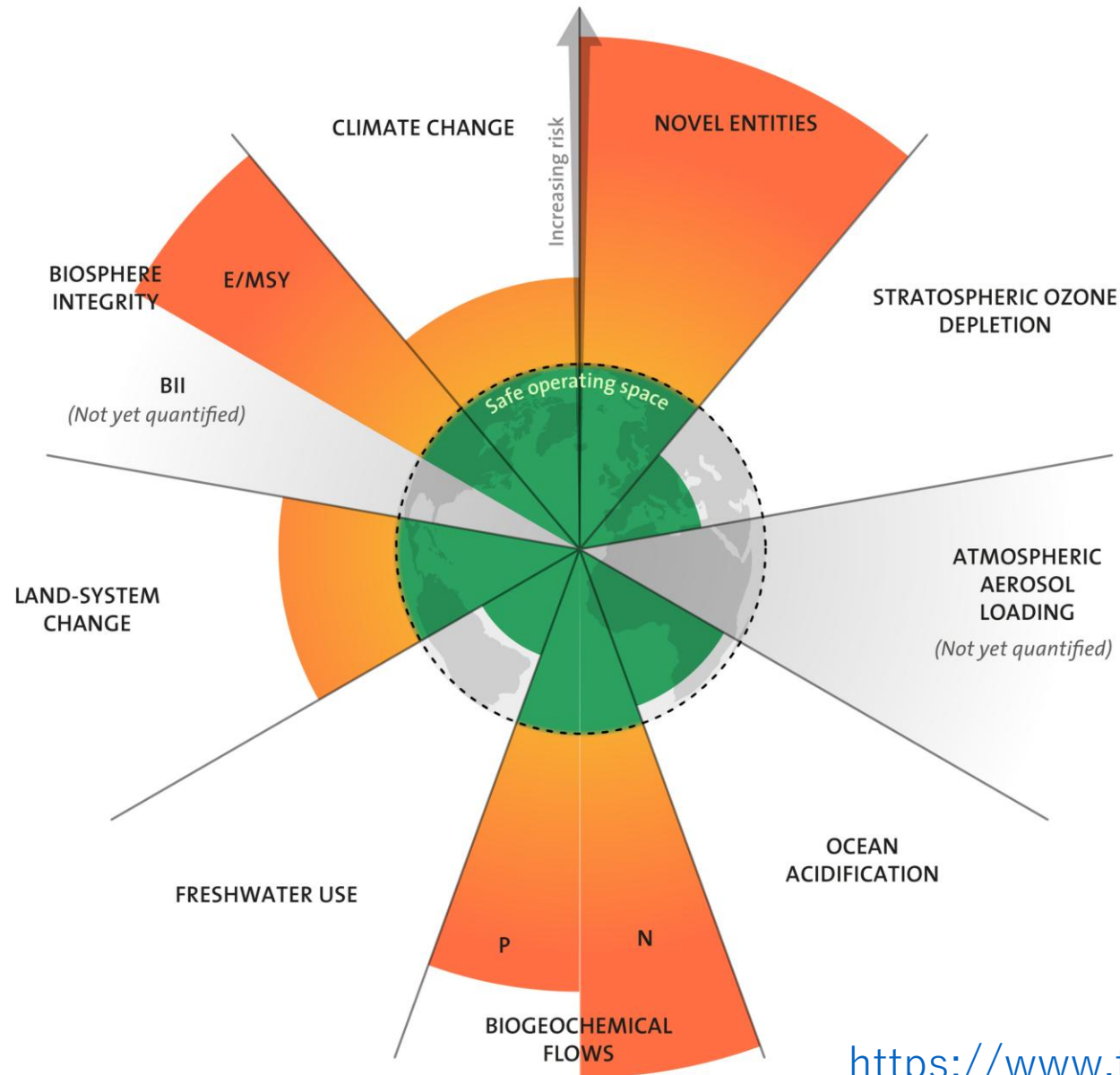
## Risks are increasing with every increment of warming

### a) High risks are now assessed to occur at lower global warming levels



# Planetary Boundaries

<https://www.weforum.org/videos/earth-planetary-boundaries/>



Stockholm  
Resilience Centre



Stockholm  
University



Johan Rockström

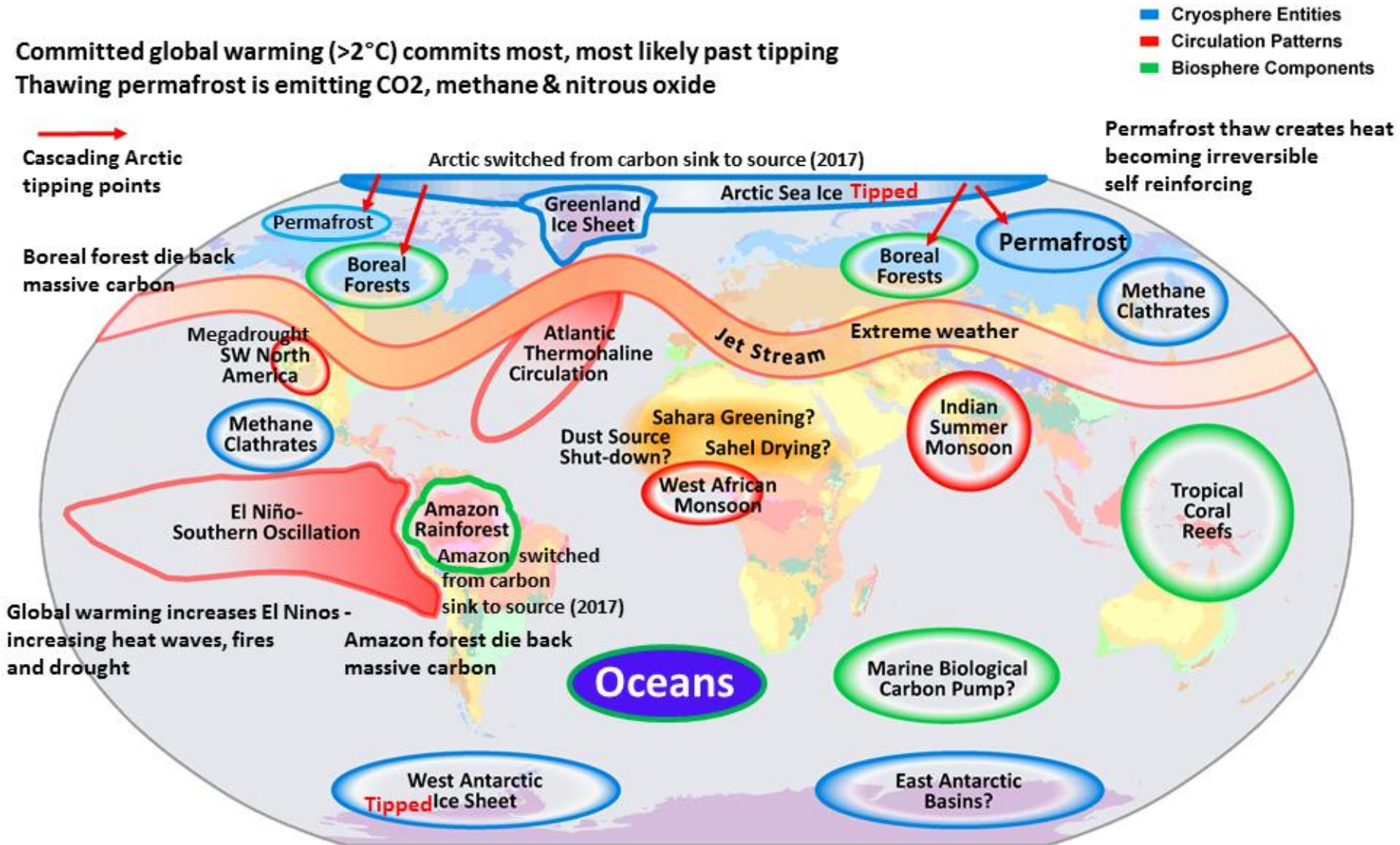
<https://www.facebook.com/watch?v=1488277089038162>

<https://www.stockholmresilience.org/research/planetary-boundaries.html>



# Global Warming Vulnerable Tipping Points

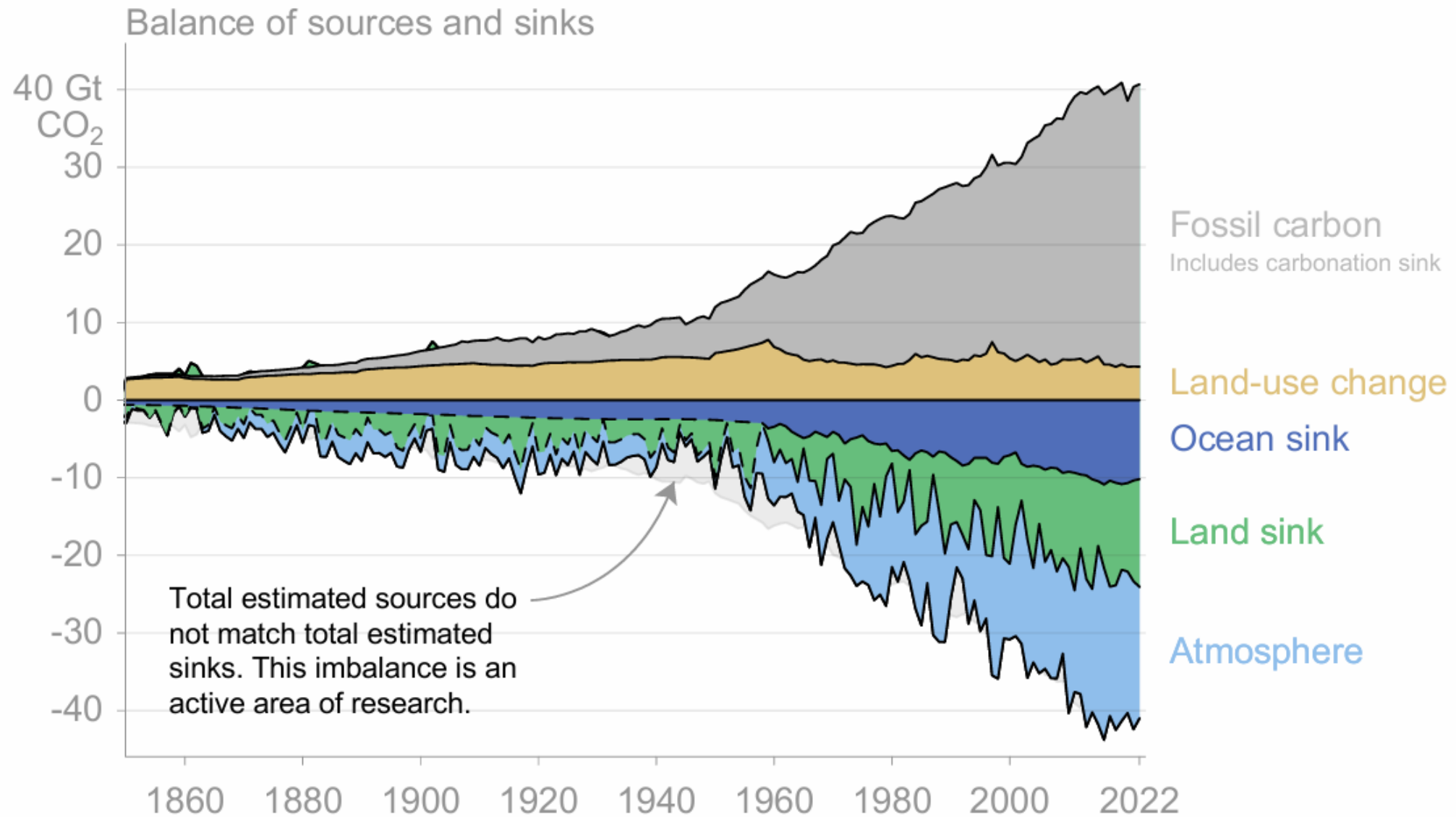
Committed global warming ( $>2^{\circ}\text{C}$ ) commits most, most likely past tipping  
Thawing permafrost is emitting  $\text{CO}_2$ , methane & nitrous oxide



Adapted from Potsdam Climate Institute  
Tipping Elements the Achilles Heels  
of the Earth System

<https://www.pik-potsdam.de/en/output/infodesk/tipping-elements>

# Global Carbon Sink



© Global Carbon Project

<https://essd.copernicus.org/articles/15/5301/2023/> <https://globalcarbonbudget.org/>



# Proportion and distribution of global forest area by climatic domain, 2020



Tropical  
**45%**



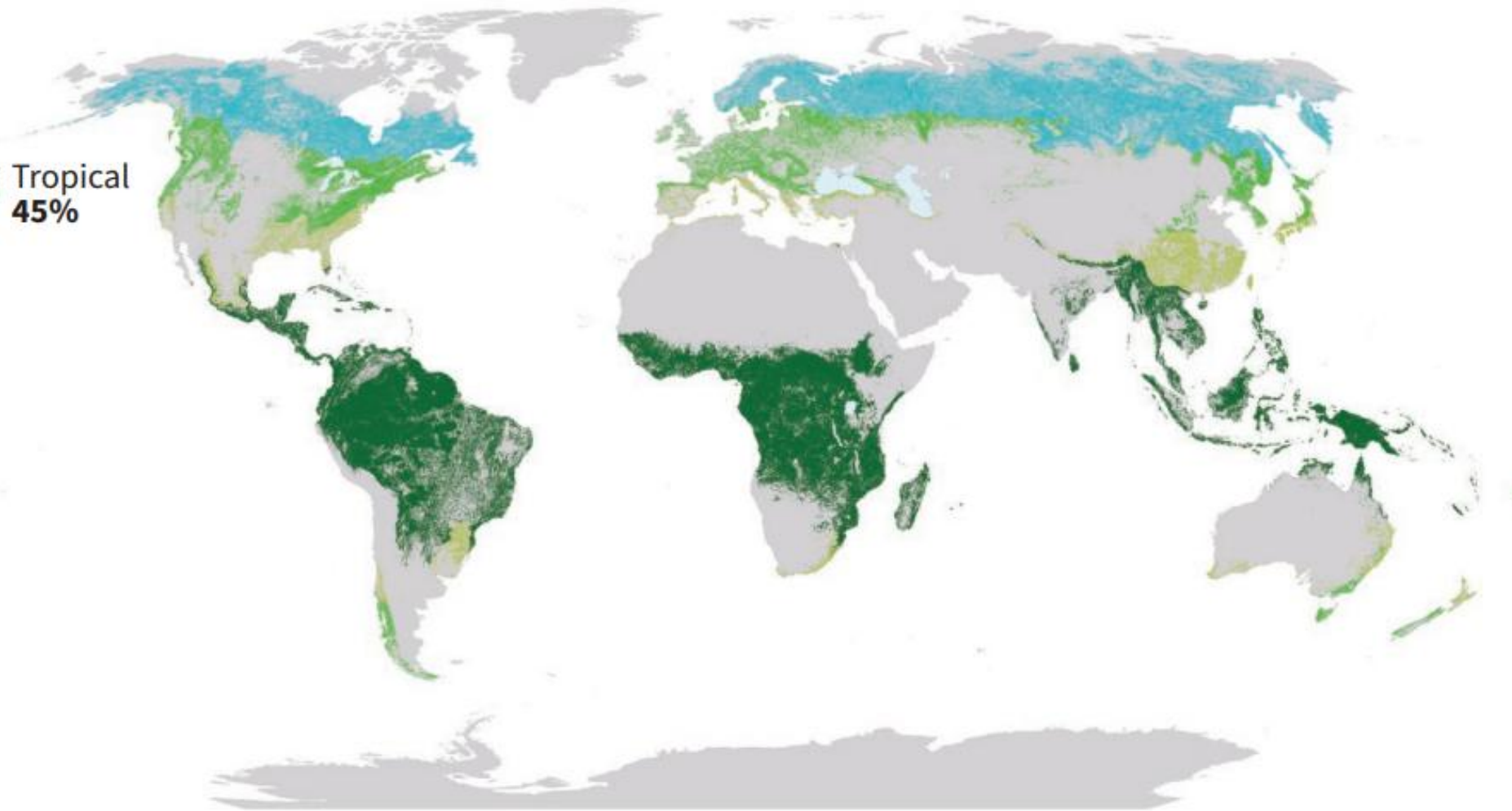
Boreal  
**27%**



Temperate  
**16%**

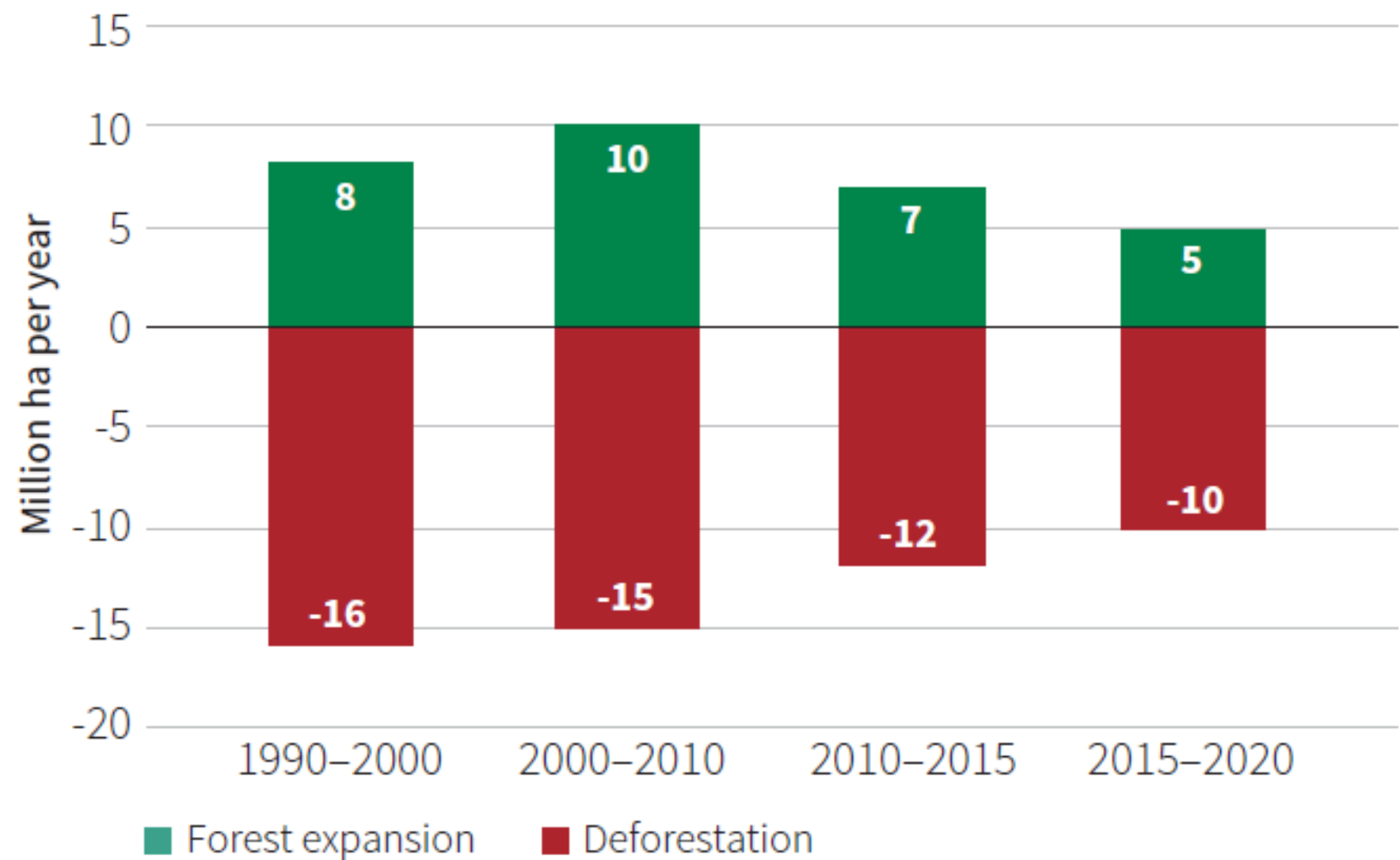


Subtropical  
**11%**

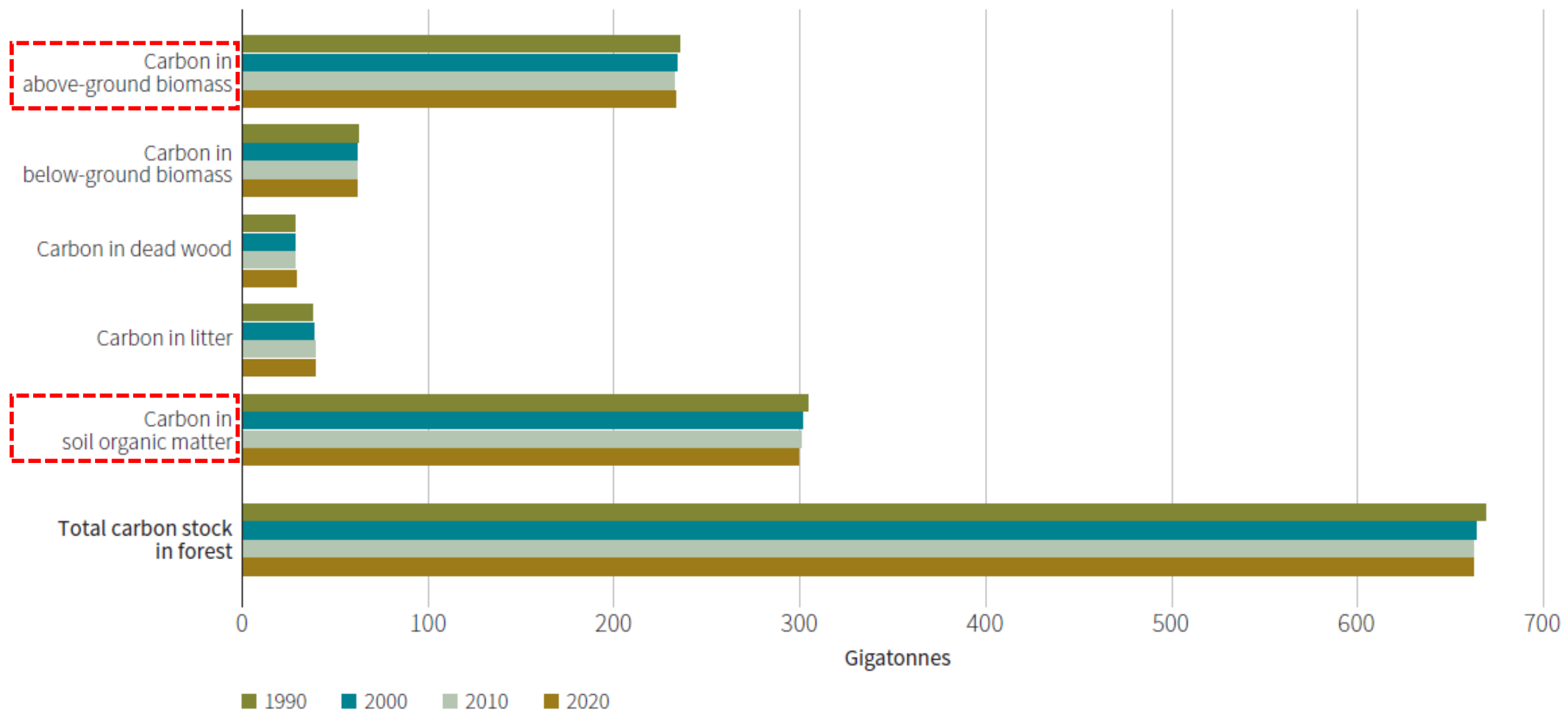


Source: Adapted from United Nations World map, 2020.

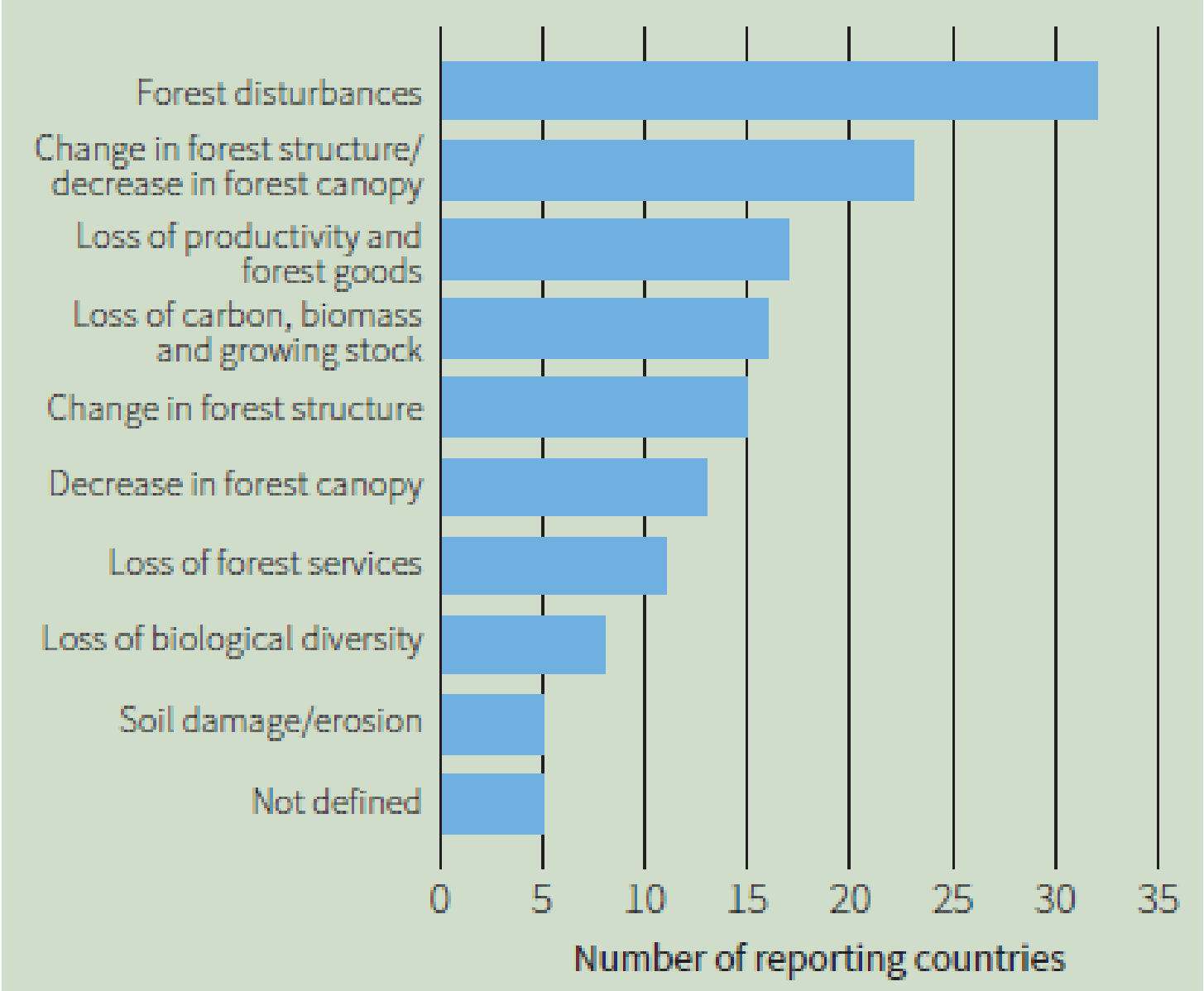
# Annual rate of forest expansion and deforestation, 1990–2020



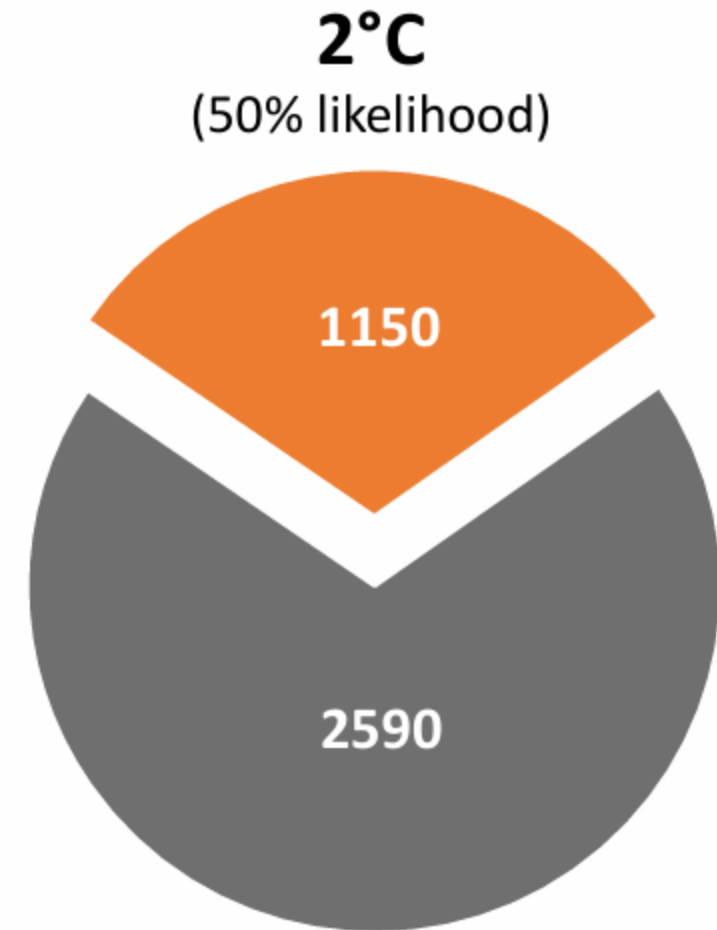
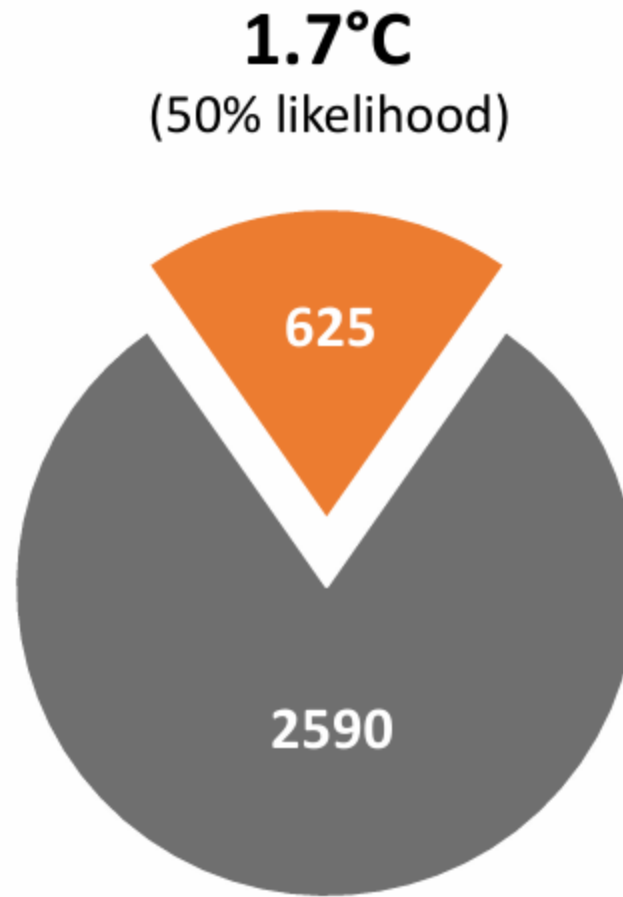
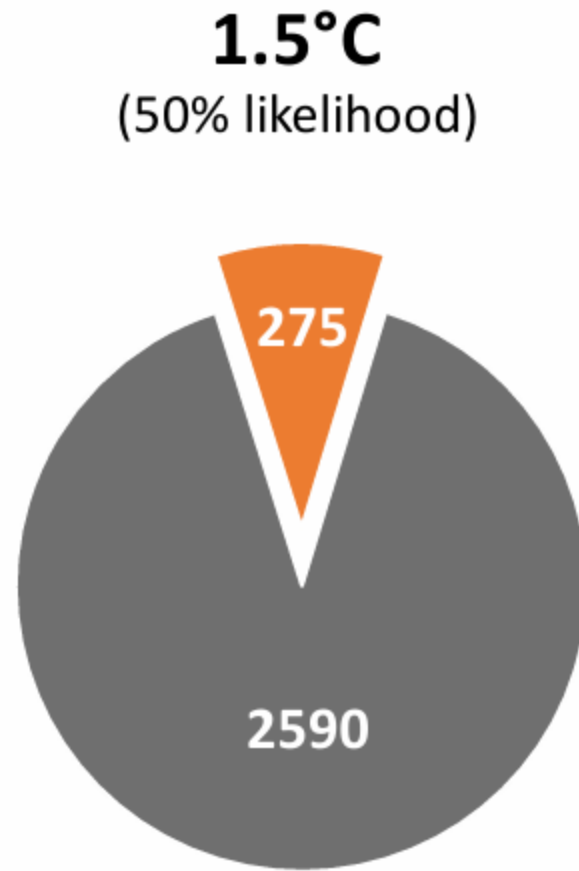
# Trends in total forest carbon stock, by carbon pool, 1990–2020



# Criteria used in national definitions of degraded forest



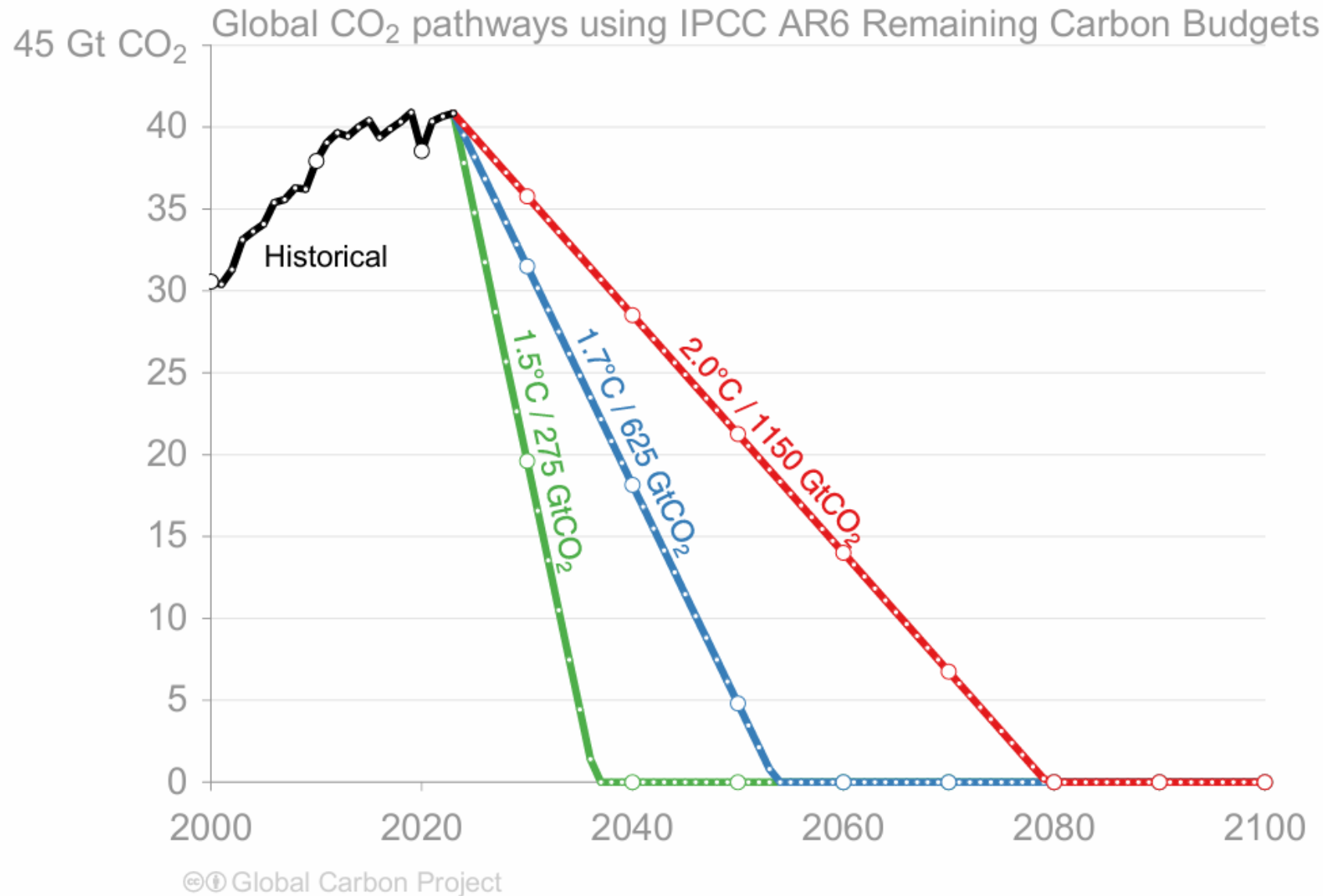
# Remaining Carbon Budget



**Gt CO<sub>2</sub>** ■ Consumed  
■ Remaining

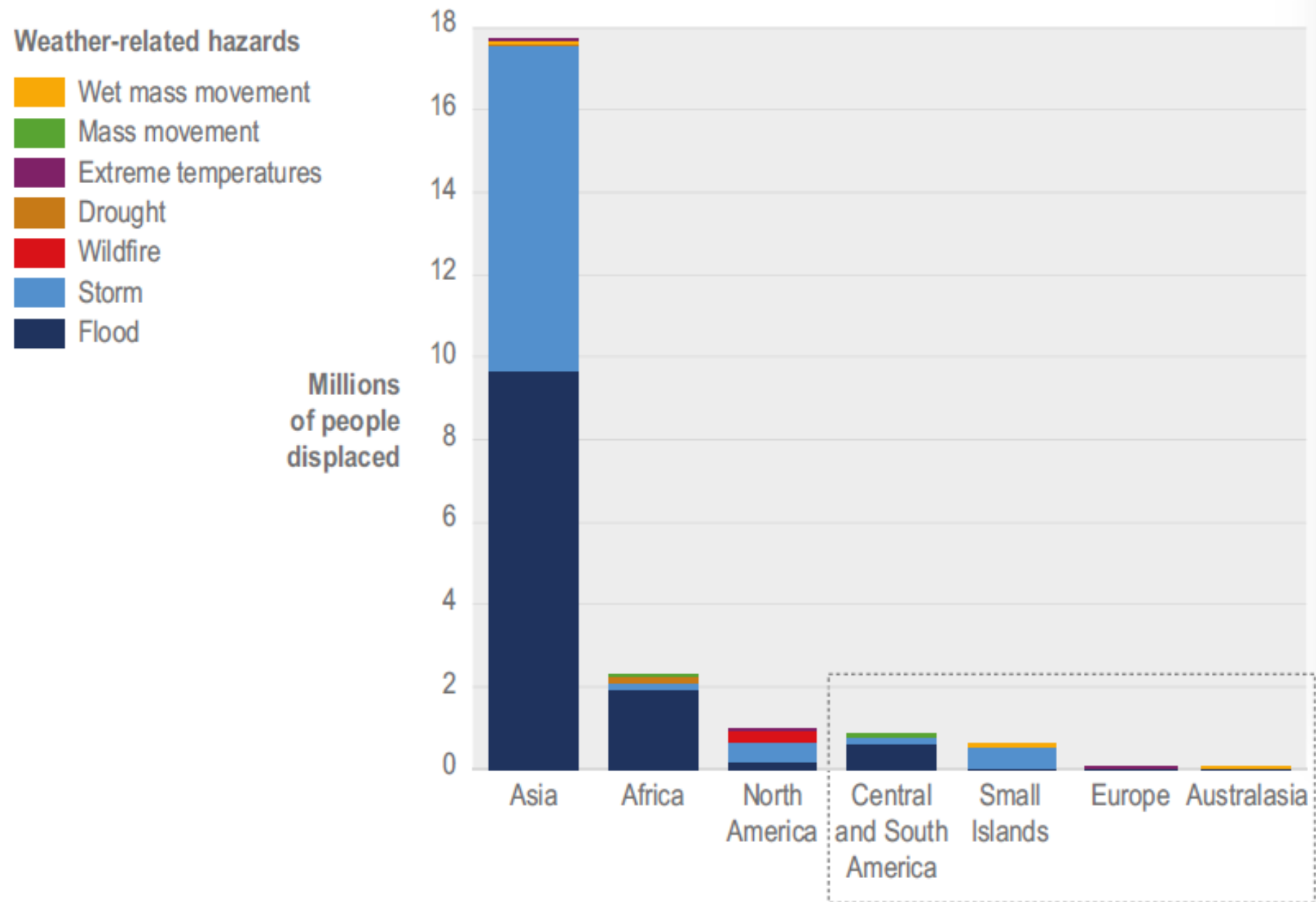


# Global CO<sub>2</sub> emissions must reach 0 to limit global warming



## **6. Climate Change Impact**

# Average annual weather-related displacements, 2010–2020



# Impact of Sea Level Rise

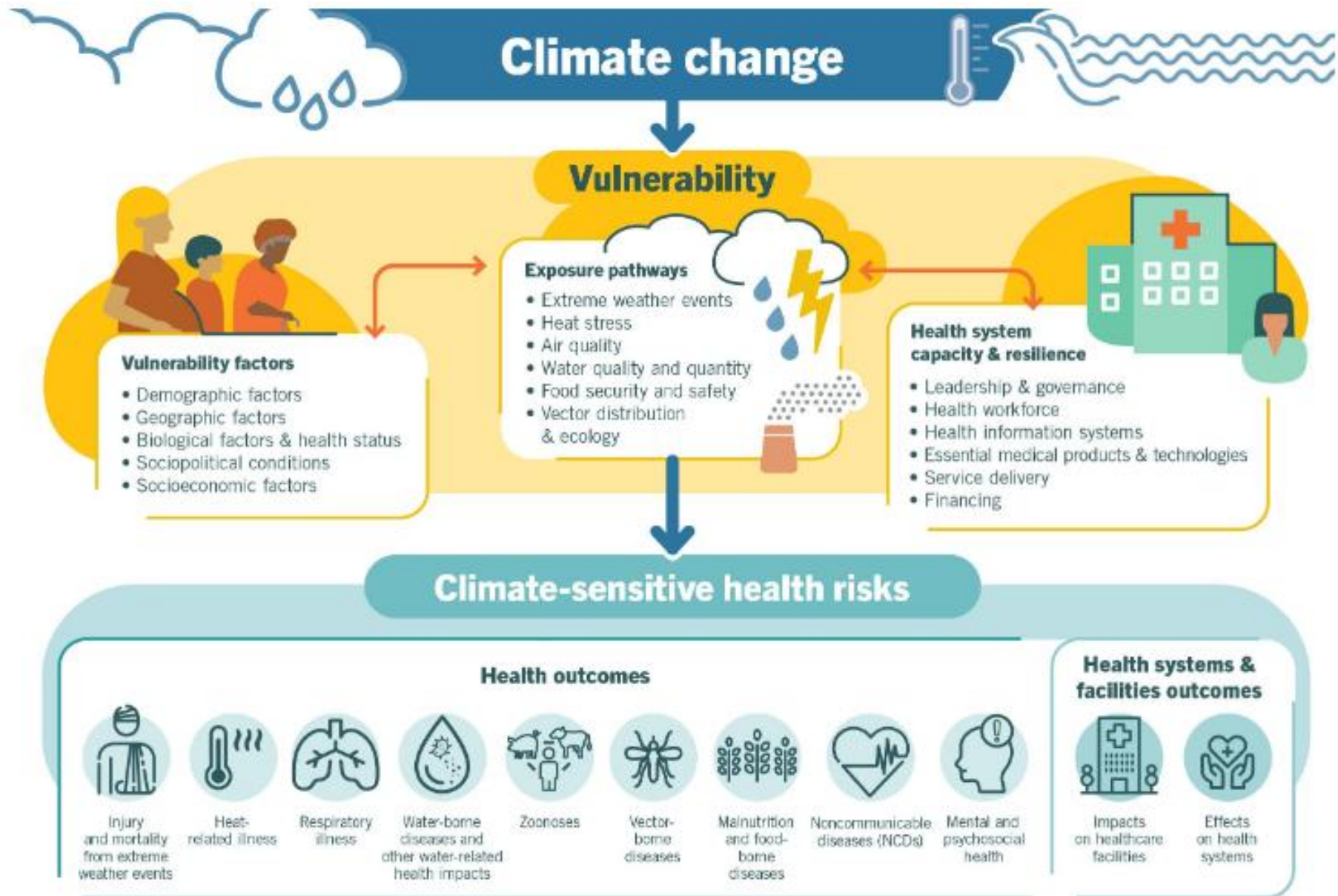
**Drinking Water Supply:** Contaminated groundwater affects the availability of potable water.

**Agriculture:** High salinity levels in irrigation water can harm crops and reduce agricultural productivity.

**Ecosystem Disruption:** Saline groundwater can affect the health of ecosystems, especially in wetlands and lakes.



# Climate Change impact on Human Health



(Reference) <https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health>

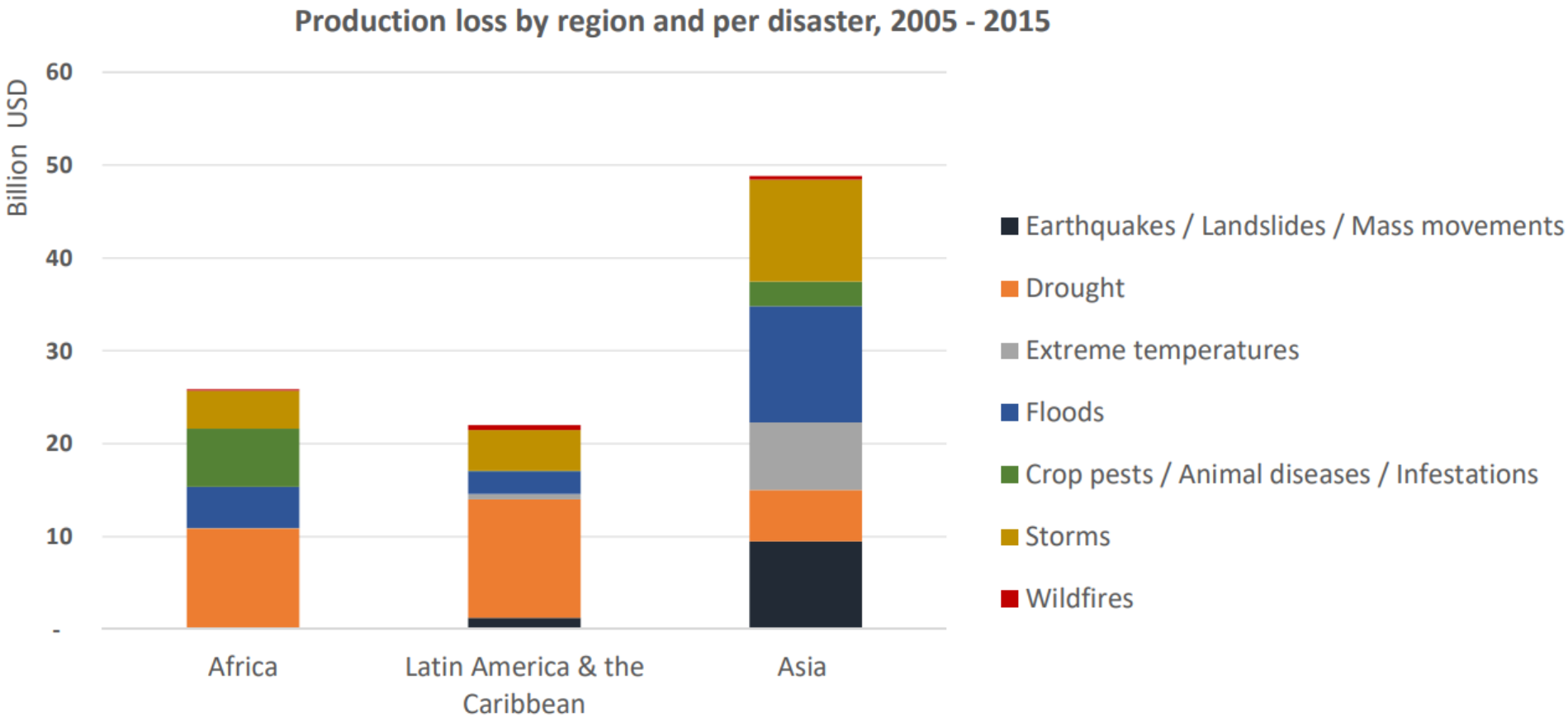


# Climate Change impact on Food Security (Agriculture Loss)

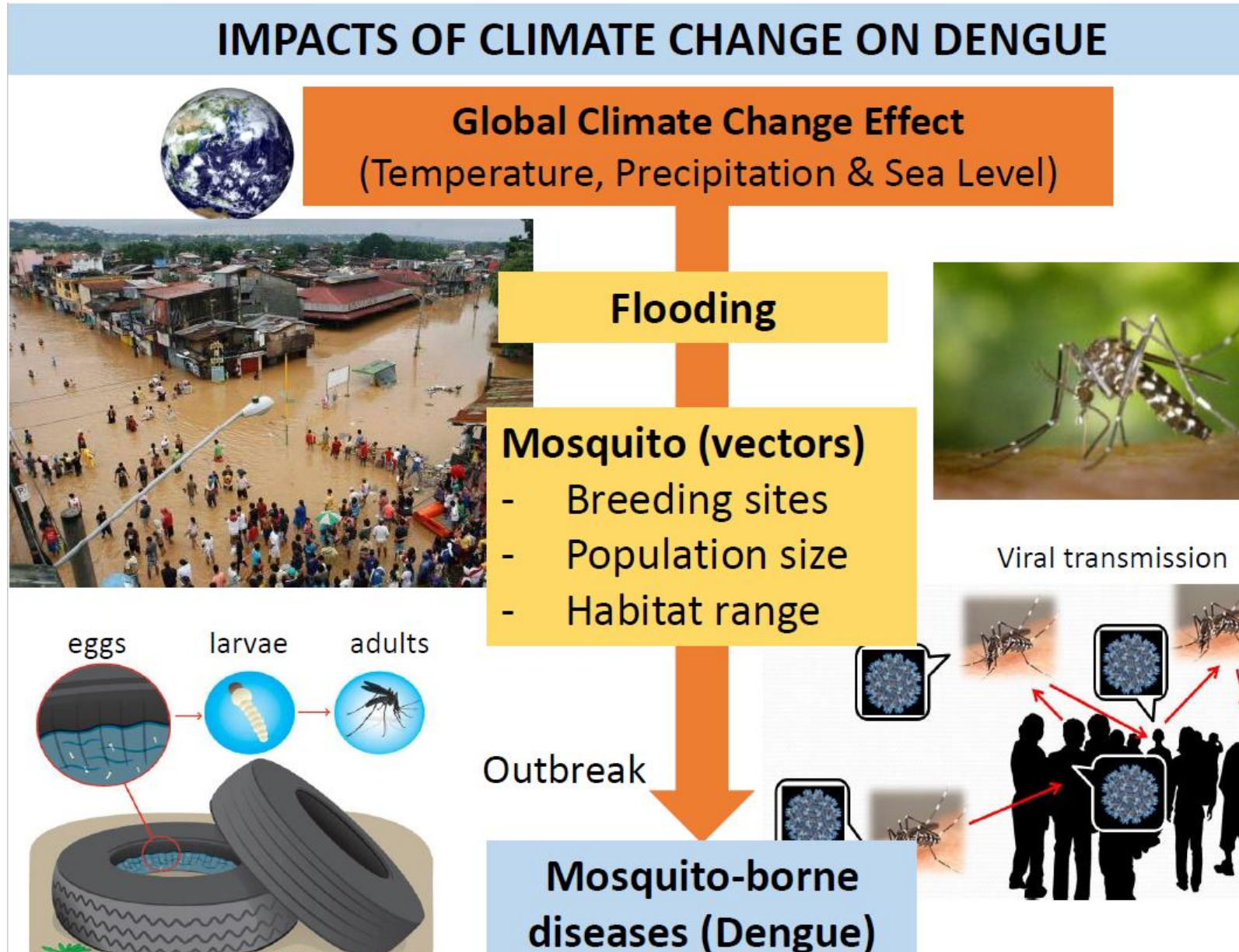
Assessing Damage and Loss in Agriculture  
FAO's methodology



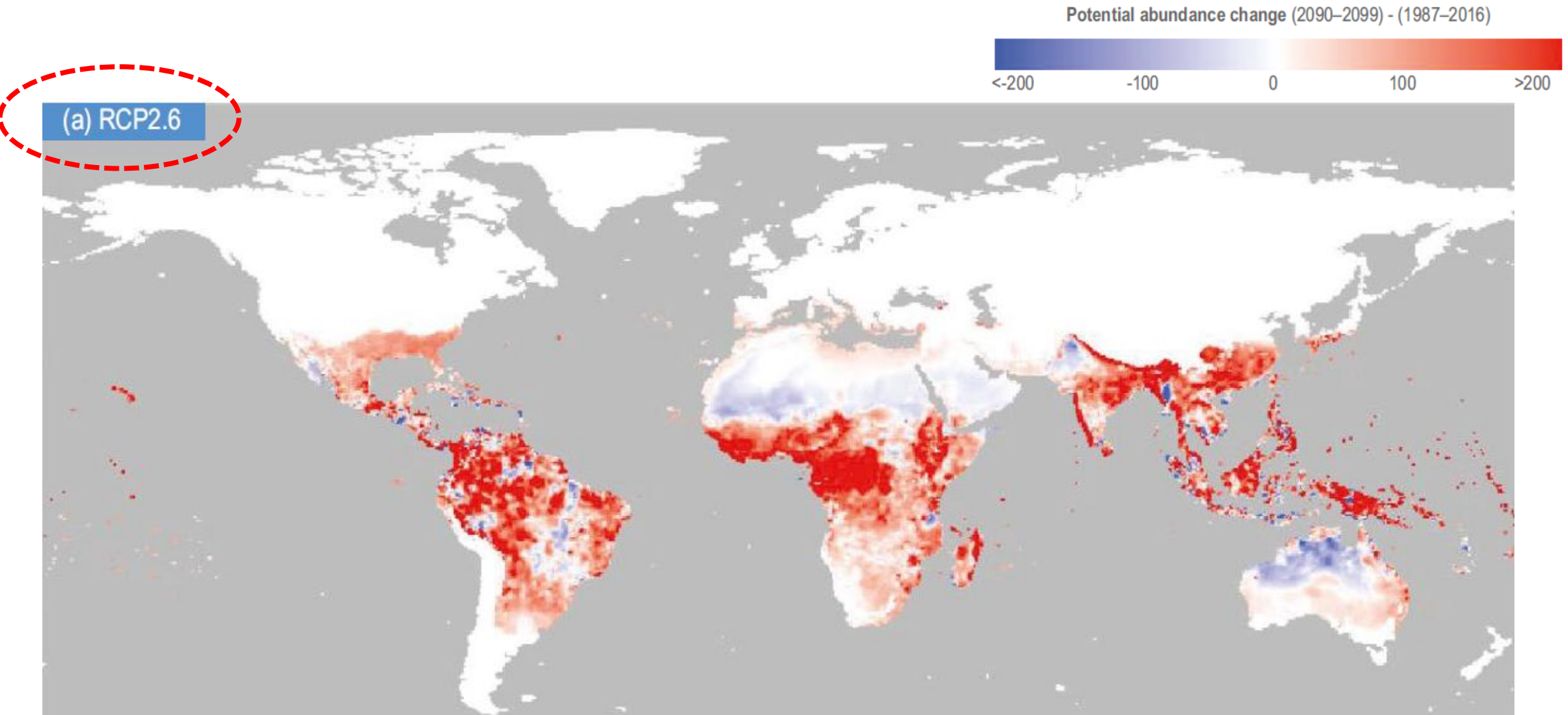
Upcoming FAO report  
Main findings



# Climate Change impact on Dengue

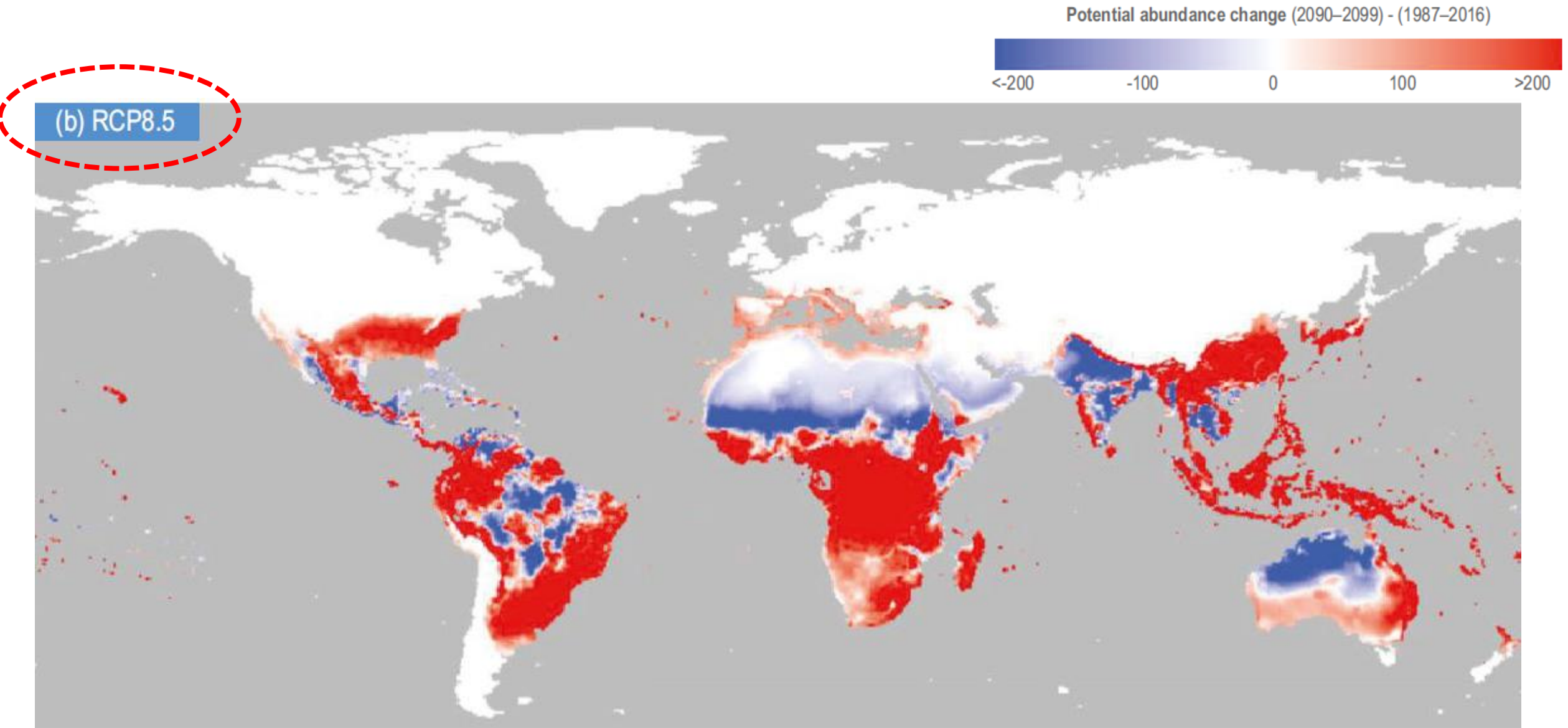


# Projected change in the abundance of *Aedes aegypti*





# Projected change in the abundance of *Aedes aegypti*

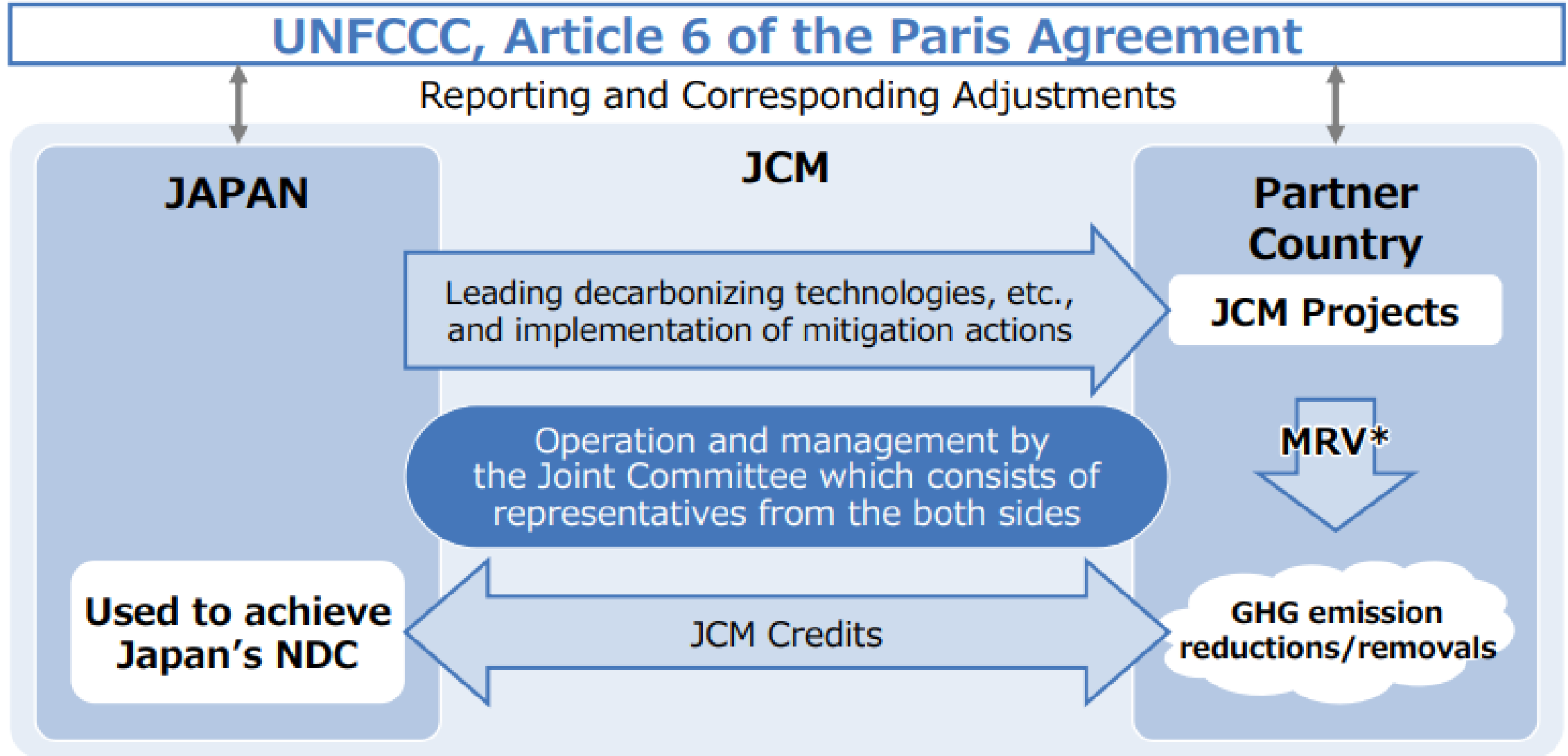


## **7. Reference**



# **The Joint Crediting Mechanism (JCM)**

# JCM Mechanism



\*measurement, reporting and verification

(Source) Recent Developments of the Joint Crediting Mechanism (JCM) (2024) made by Government of Japan

# Countries that have signed bilateral document



# Examples of JCM Model Projects by Technology

## Energy Efficiency



Chiller (Thailand)  
The Kansai Electric Power Company, Incorporated



Boiler (Viet Nam)  
Acecook Co., Ltd.



Amorphous Transformers (Lao PDR)  
Yuko Keiso Co., Ltd.

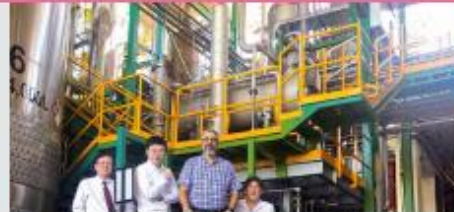


LPG Boilers (Mongolia)  
Salsan Co., Ltd.

## Energy Efficiency



Raw Water Intake Pumps (Viet Nam)  
Yokohama Water Co., Ltd.



Energy Efficient Distillation System (Mexico)  
Suntory Spirits Ltd.

## Effective Use of Energy



Waste Heat Recovery (Myanmar)  
Global Engineering Co., Ltd.



Gas Co-generation System & Chiller (Thailand)  
Kansai Electric Power Co., Inc.

## Renewable Energy



Binary Geothermal Power Generation (Philippines)  
Mitsubishi Heavy Industries, Ltd.



Mini Hydro Power (Indonesia)  
Toyo Energy Farm Co., Ltd.



Solar Power (Chile)  
Farmland Co., Ltd.



Solar Power (Palau)  
Sharp Energy Solutions Corporation

## Renewable Energy



Biogas Power & Fuel Conversion (Philippines)  
Itochu Corporation

## Waste Handling and Disposal



Power Generation with Methane Gas Recovery System (Mexico)  
NTT Data Institute of Management Consulting, Inc.



Waste to Energy Plant (Myanmar)  
JFE Engineering Corporation

## Transportation

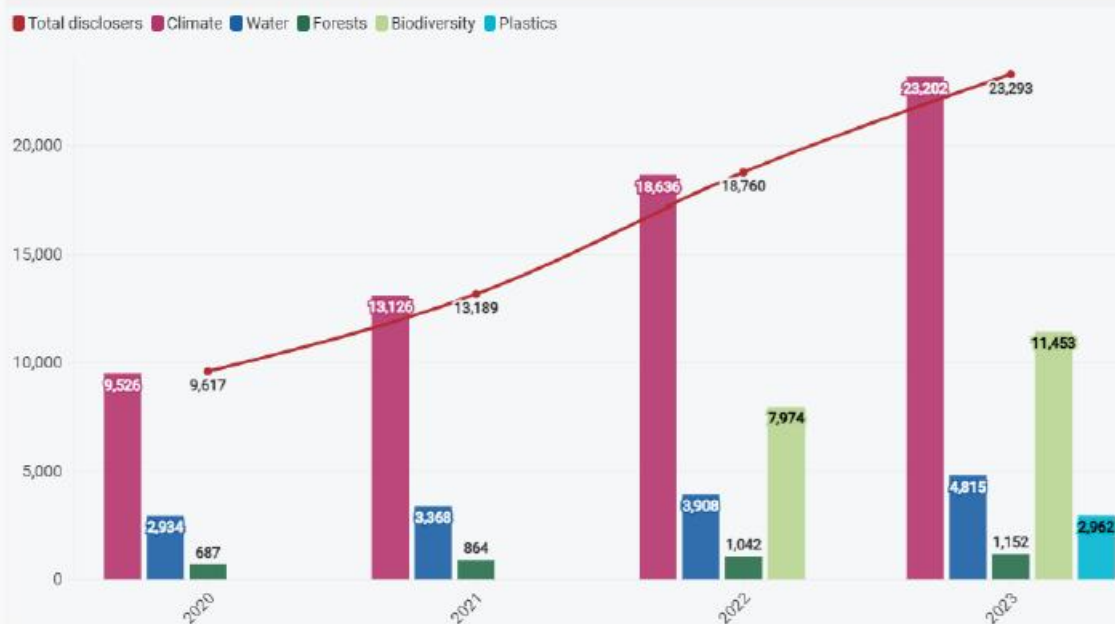


CNG-Diesel Hybrid Public Bus (Indonesia)  
Hokusan Co., Ltd.

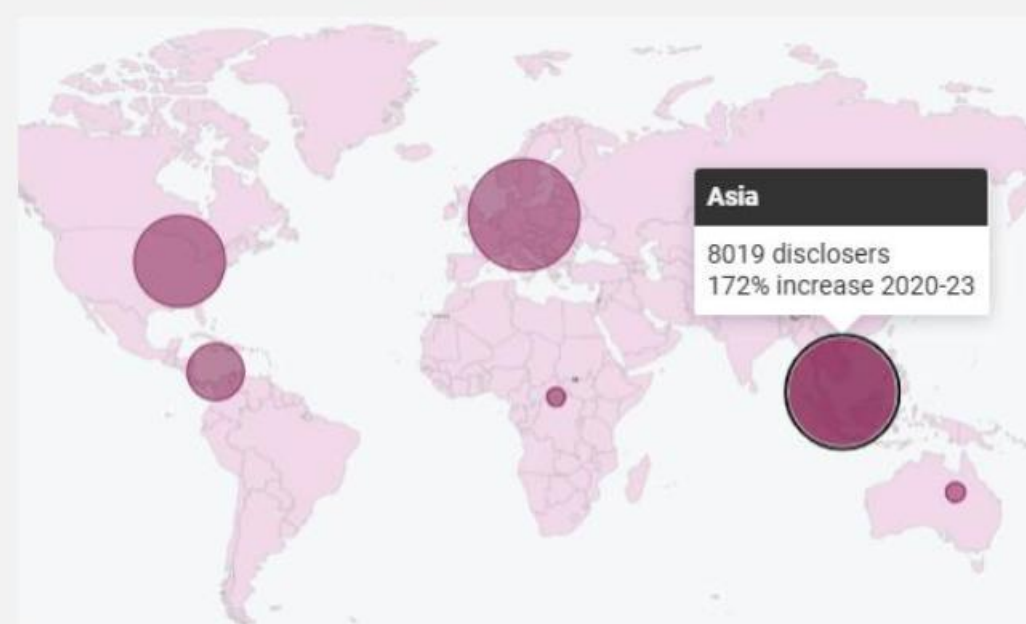
**Other initiatives**



- CDP is a global non-profit that runs the world's environmental disclosure system for companies, cities, states and regions. Founded in 2000 and working with more than 700 financial institutions.
- Nearly 25,000 organizations around the world disclosed data through CDP in 2023, including more than 23,200 companies and over 1,100 cities, states and regions.
- CDP is a founding member of the SBTi, RE100 and We Mean Business Coalition.



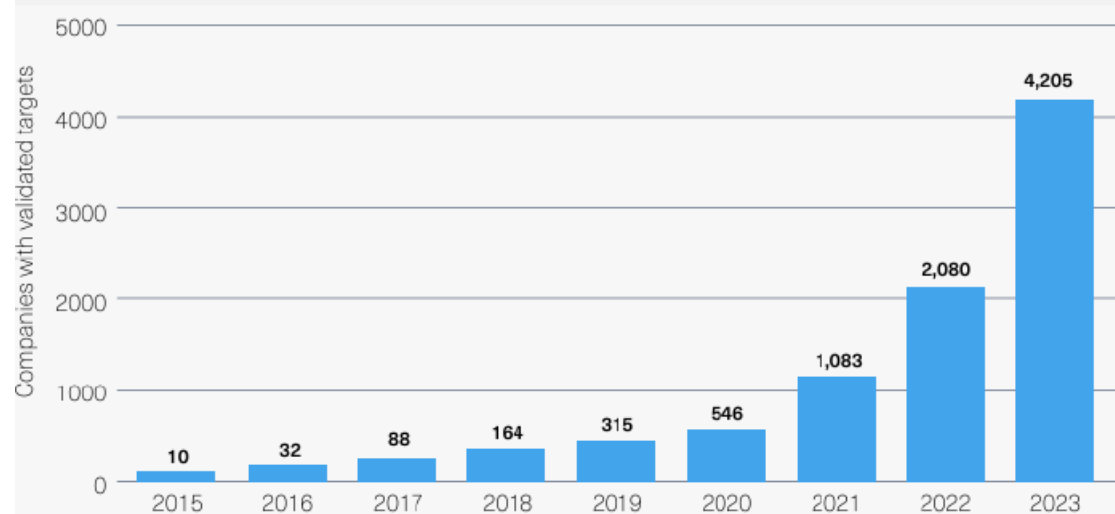
Number of disclosers



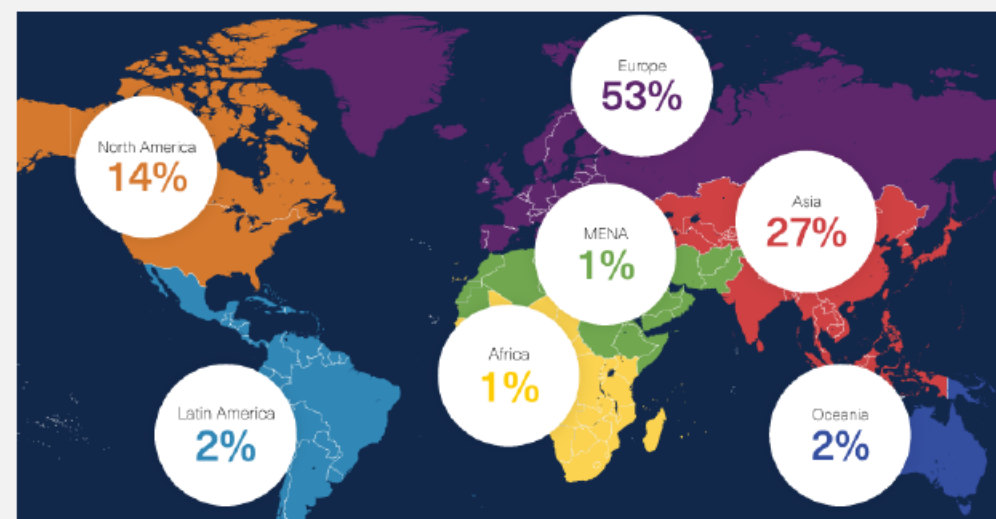
Distribution of disclosers

# Science Based Targets initiative (SBTi)

- The SBTi develop standards, tools and guidance which allow companies to set GHG emissions reductions targets.
- The SBTi is partnering with CDP, the United Nations Global Compact, the We Mean Business Coalition, the World Resources Institute (WRI), and the World Wide Fund for Nature (WWF).
- SBTi launched the **Corporate Net-Zero Standard** which enables corporates to develop near- and long-term science-based targets in line with net-zero and 1.5°C by 2050. Corporate Net-Zero Standard is under the major revision due by 2026.



Annual cumulative number of companies with approved targets and commitments



Distribution of companies and financial institutions with validated targets by region

**This is the end of the presentation.**

**Thank you for listening to my presentation.**