



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra



**Agriculture & Food systems**



**Climate, DRR & Environment**



**Water**

*Working at the Green Nexus*

**Bridging Themes for Greater Impact:  
Enhancing Collaboration in Times of Global Crises**

# Housekeeping rules



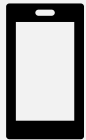
Please keep your microphone **muted** at all time.



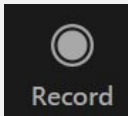
Please make sure to have your **full name** properly spelled out.



Use the **chat** to share reflections, resources and ask questions.



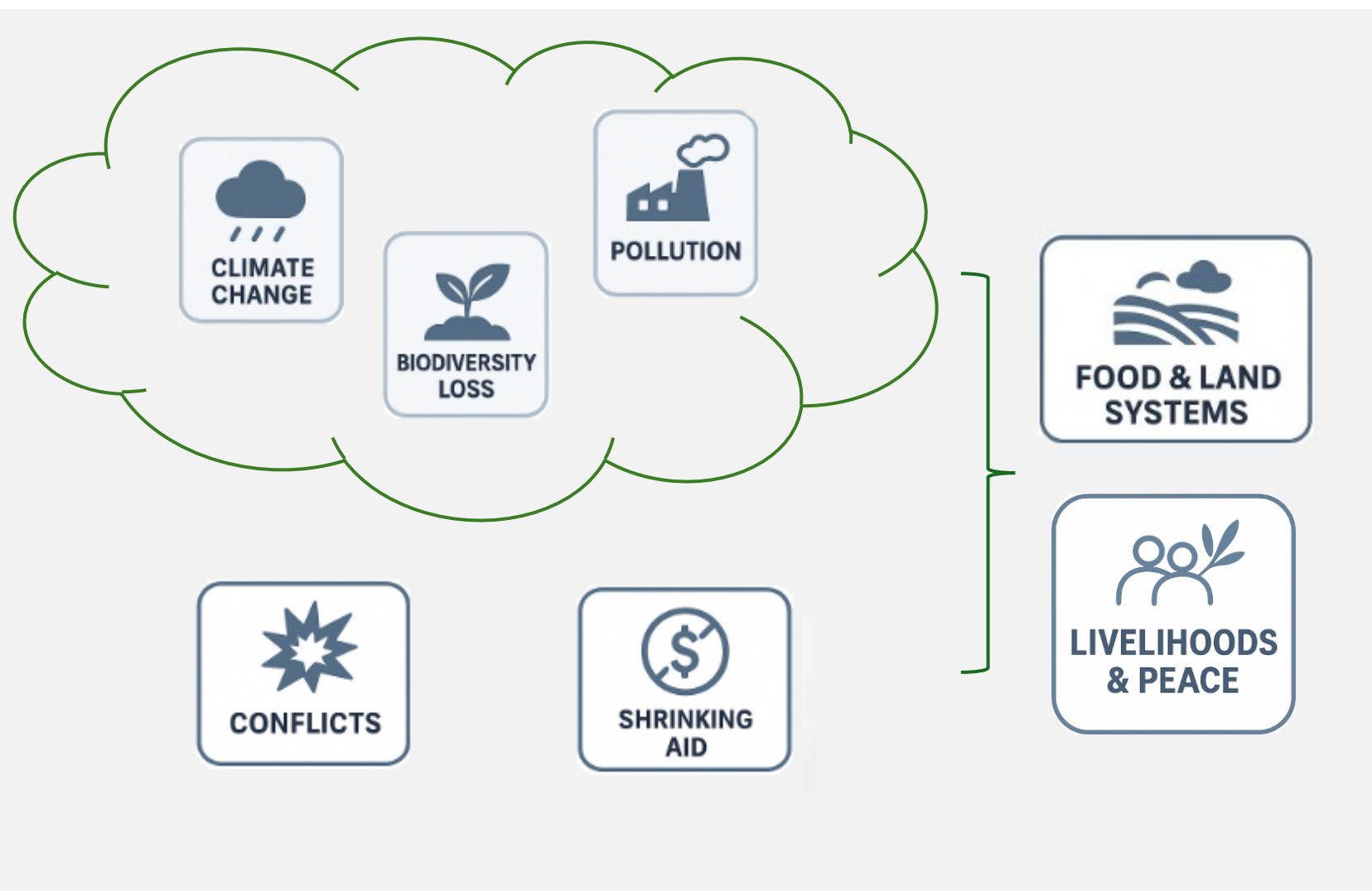
Keep your mobile phone at hand to join the interactive **Menti** sessions.



The keynote presentation will be **recorded**. The discussions will not be recorded.



# Background – Why ?



A healthy biosphere, with a rich biodiversity and functioning ecosystems, is the foundation to achieve the societal and economic goals of the SDGs. — © Source: Stockholm Resilience Centre



# What's being offered today?

- 1) Context : Global urgency & polycrises – where do we stand, major challenges  
*Clara Nicolai, Potsdam Institute for Climate Impact Research*
- 2) Anchoring through current examples : Who is doing what, and how  
*Panel discussion with regional advisors and thematic experts*
- 3) Open discussion  
*Q&A session from all participants*
- 4) Wrapping up & next steps  
*SDC Green Nexus network focal points*





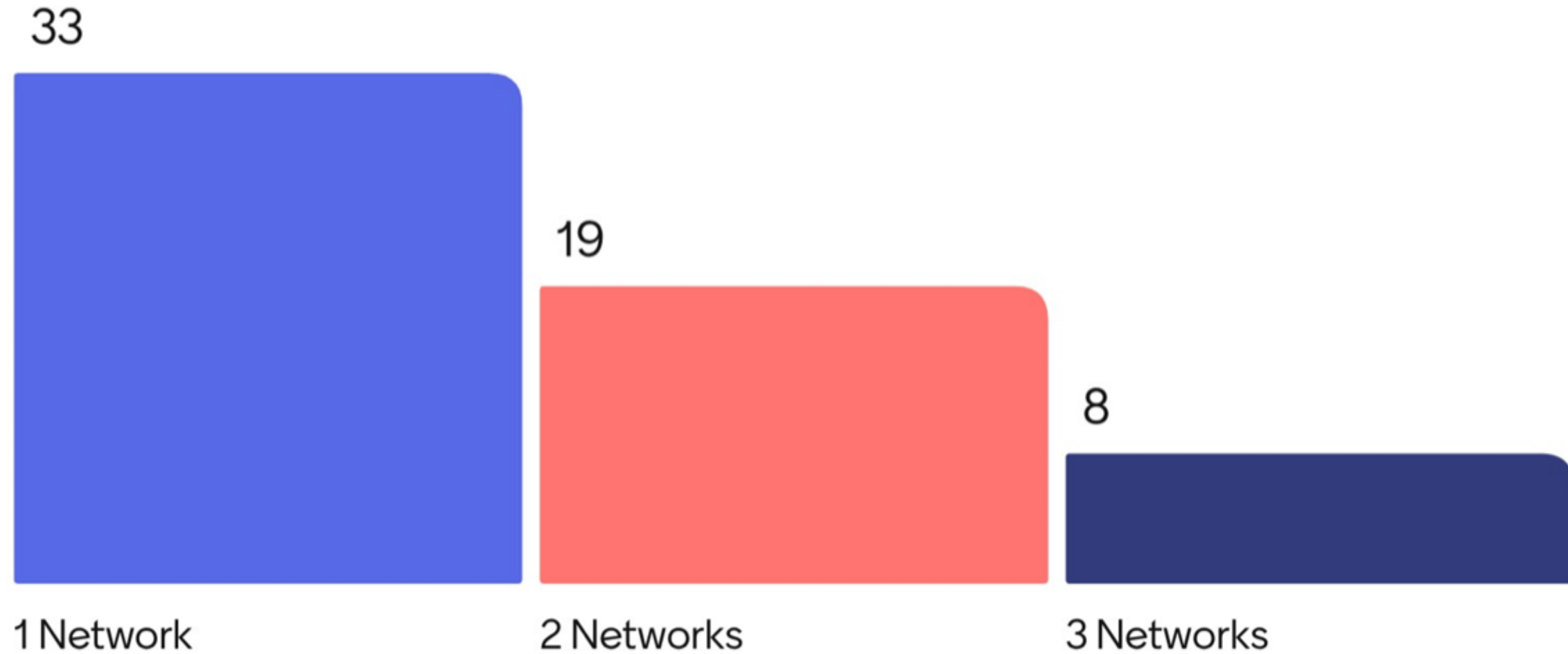
# Menti survey

First, we'd like to get a shared  
idea of who we all are in this  
webinar today

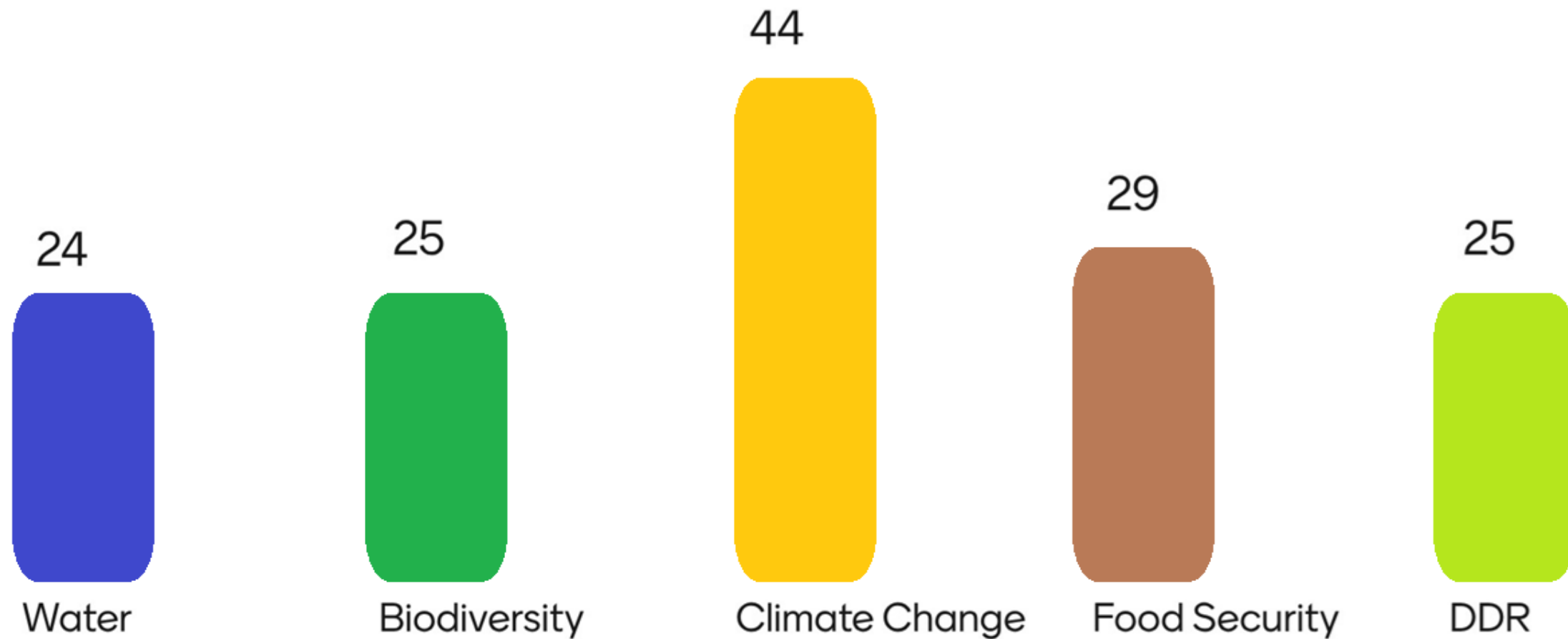
<https://www.menti.com/al16oghe9ow1>



Out of the three networks AFS, CDE and Water, how many are you part of ?



Which of the following themes do you cover in your daily work?



## **PART 1 :**

# **Keynote speech – Global context & polycrises**

**Clara Nicolai, M.Sc.**

*Potsdam Institute for Climate Impact Research (PIK)*





# Sustainable Development in the Face of Global Urgency and Polycrises



**Keynote | 10 November 2025**

Clara Nicolai, Coordination Planetary Boundaries Science Lab  
Potsdam Institute for Climate Impact Research

Planetary Boundaries  
SCIENCE LAB



POTSDAM INSTITUTE FOR  
CLIMATE IMPACT RESEARCH

# Agenda

- How can we assess the state of the planet using the **Planetary Boundaries**?
- What is the **Planetary Health Check Report** & why is it published annually?
- How do we **prioritize** in the face of polycrises?
- How can the Planetary Boundaries **guide** sustainable development?



How can we assess the state of the planet  
using the **Planetary Boundaries**?



# Beyond Climate: The Planetary Crisis Unfolding

Amazon rainforest could reach 'tipping point' by 2050, scientists warn

'We need to respond now,' says author of study that says crucial forest has already passed safe boundary and needs restoration

Indonesia's tropical Eternity Glaciers could vanish within years, experts say

El Niño weather pattern could accelerate melting, leading to sea level rise



ing effect that helps stabilise the climate. Photograph: João

emperatures put Earth in 'itory', say scientists

icates climate crisis is taking place

Earth 'well outside safe operating space for humanity', scientists find

First complete 'scientific health check' shows most global systems beyond stable range in which modern civilisation emerged



Climate models have suggested that the safe boundary for climate change was surpassed in the late 1980s Photograph: Alamy

Venezuela loses its last glacier, shrinks down to an ice field

Scientists reclassify Humboldt after it melted faster than expected



ites the melting of

melting Antarctic ice predicts rapid slowdown of deep ocean circulation by 2050

Research by Australian scientists suggests 40% of the world's population by 2050 could be affected by sea level rise

Human-caused heating behind extreme droughts in Syria, Iraq and Iran, study finds

Millions of people's lives wrecked by droughts that used to happen once every 250 years but now expected once a decade



A fisherman walks across a dry patch of land in the marshes in Dhi Qar province, Iraq. Photograph: Anmar Khalil/AP

'Paying in lives': health of billions at risk from global heating, warns report

the climate crisis is 'costing lives and livelihoods' due to heat, food insecurity and infectious diseases, say

Jamaica's dengue fever outbreak shows the deadly toll of heat



West Antarctica now shows signs of collapse

After how much carbon emissions danger



Global heating is accelerating, warns scientist who sounded climate alarm in the 80s

Study delivers dire warning although rate of increase is debated by some scientists amid a record-breaking year of heat



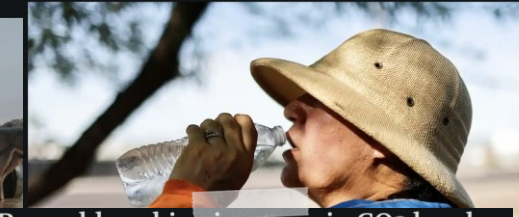
The research suggests that a 'dangerous' burst of heating will be unleashed, pushing temperatures 2C hotter by 2050. Photograph: Dmitry Rukhlenko/Travel Photos/Alamy

Temperatures see WA have top 15 hottest places in world as heatwave expected to peak on Tuesday

Australia news live blog for latest updates on heatwave, including morning and afternoon news emails, free app or daily

Brutal heatwave cooks US south-west, an early sign of sizzling summer ahead

Millions of Americans are sweltering as experts warn early heat could herald next record-smashing summer



Record-breaking increase in CO2 levels in world's atmosphere

Experts issue warning after finding global average concentration in March was 4.7ppm higher than same period last year



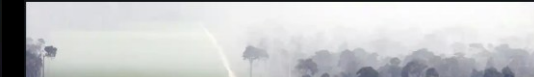
Climate crisis increasing frequency of deadly ocean upwells, study finds

Intense patches of cold water rising from the depths are killing sharks, rays and other creatures, researchers say



Ecological tipping points could occur much sooner than expected, study finds

Amazon rainforest and other ecosystems could collapse 'very soon', researchers warn



Climate crisis costing \$16m an hour in extreme weather damage, study estimates

Study shows at least \$2.8tn in damage from 2000 to 2019 from worsened storms, floods and heatwaves



Canada risks more 'catastrophic' wildfires with hot weather forecast

Worst-ever fire season in 2023 saw 15m hectare burned, eight firefighters killed and 230,000 people evacuated



A wildfire burns south of Fort McMurray, Alberta, near Highway 63 on 7 May 2016. Photograph: Nathan Hayward/AP

Drought turns Amazonian capital into climate dystopia

Forest fires leave Manaus with second worst air quality in the world, while low river levels cut off communities



February on course to break unprecedented number of heat records

Rapid ocean warming and unusually hot winter days recorded as human-made global heating combines with El Niño



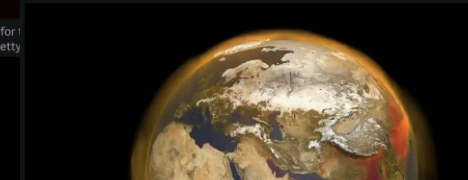
Global heating will pass 1.5C threshold this year, top ex-Nasa scientist says

James Hansen says limit will be passed 'for all practical purposes' by May though other experts predict that will happen in 2030s



Climate-heating gases reach record highs, UN reports

World Meteorological Organization sees 'no end in sight to the rising trend', largely driven by fossil fuel burning



'Unprecedented mass coral bleaching' expected in 2024, says expert

2023 is first year of potential pair of El Niño years and since 1997, instance of these pairs has led to mass coral mortality



'Biodiversity catastrophe': how the world could look in 2050 - unless we act now

The climate crisis, invasive species, overexploitation of resources and pollution

Climate crisis: average world incomes to diminish by nearly a fifth by 2050

Cost of environmental damage will be six times higher than price of limiting global heating to 2C, study finds



Europe unprepared for rapidly growing climate risks, report finds

Dangers of wildfires, extreme weather and other factors outgrowing preparedness, European Environment Agency says



New Zealand records hottest September on record

Some parts of the country exceeded normal daily maximum temperatures for the peak of summer

Water level at Amazon port in Brazil hits lowest point in 121 years amid drought

Port in Manaus records lowest water level since 1902, leaving boats stranded and unable to deliver food and water to remote villages



Aerial view showing a boat and a person in a flooded area. Photograph: Michael Dantas/AFP/Getty Images





**Humanity's  
Safe Operating Space**  
(Holocene-like conditions)



**Resilience**

Ability to absorb global change,  
including human pressures.



**Habitability**

Conditions that sustain life  
and support human societies.



**Stability**

Predictable planetary patterns,  
cycles & phenomena.



Freshwater Use



Biosphere Integrity



Climate Change



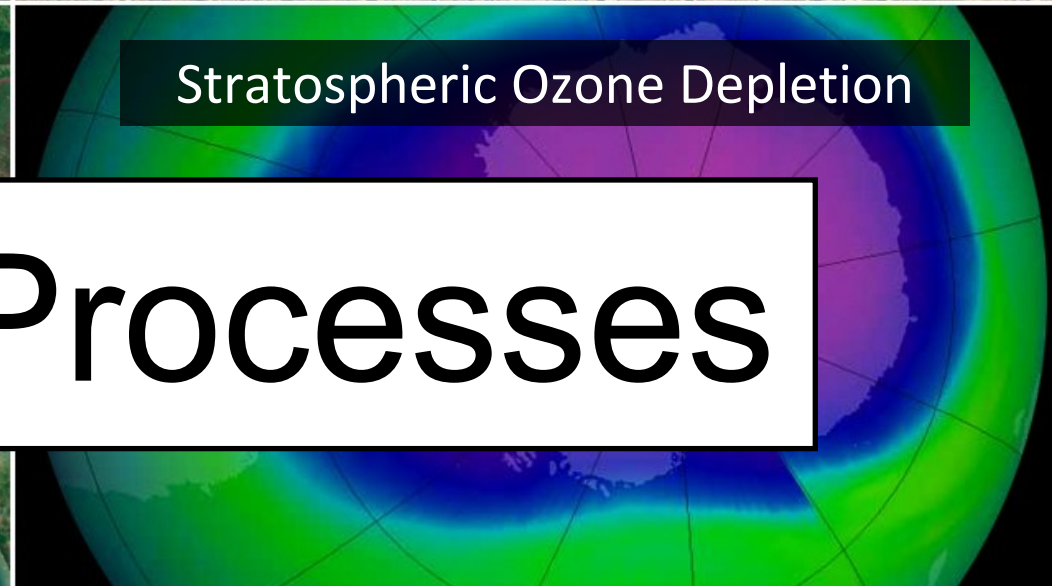
Land-System Change



Biogeochemical Flows



Stratospheric Ozone Depletion



# 9 Planetary Boundary Processes

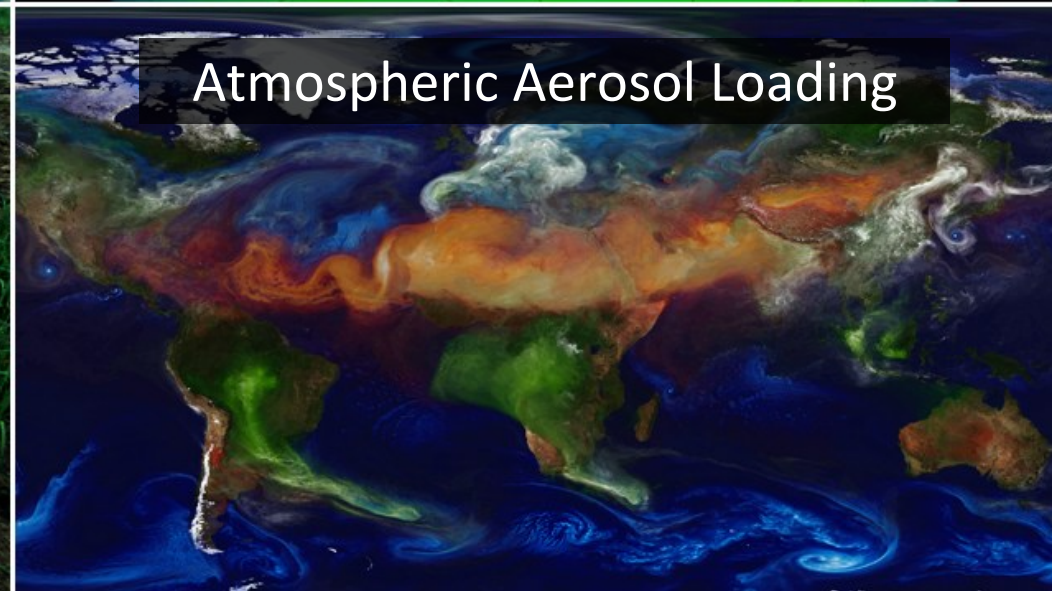
Ocean Acidification



Novel Entities



Atmospheric Aerosol Loading





Water Cycle Disruption



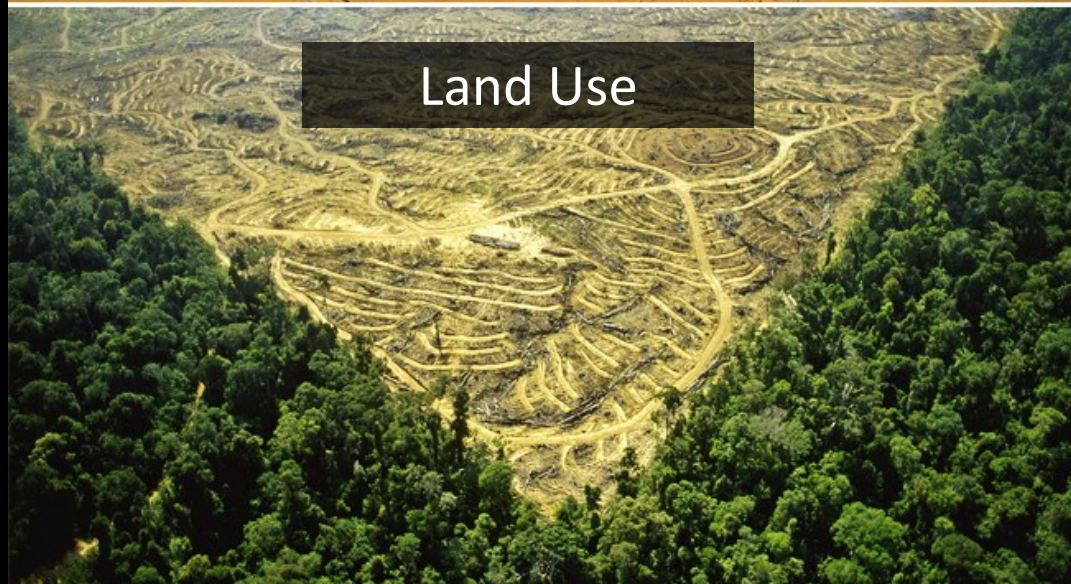
Damage to Nature



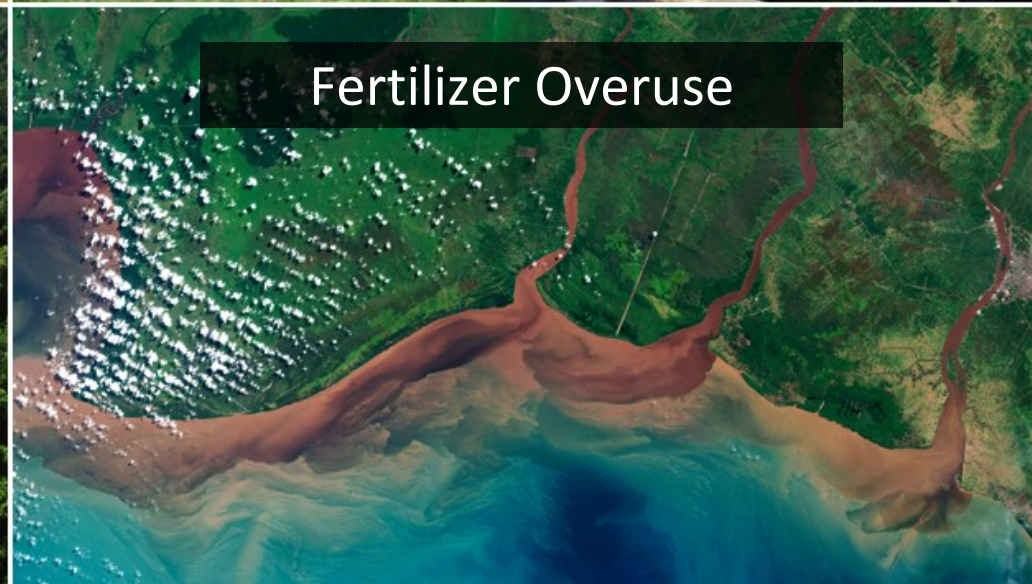
Climate Change



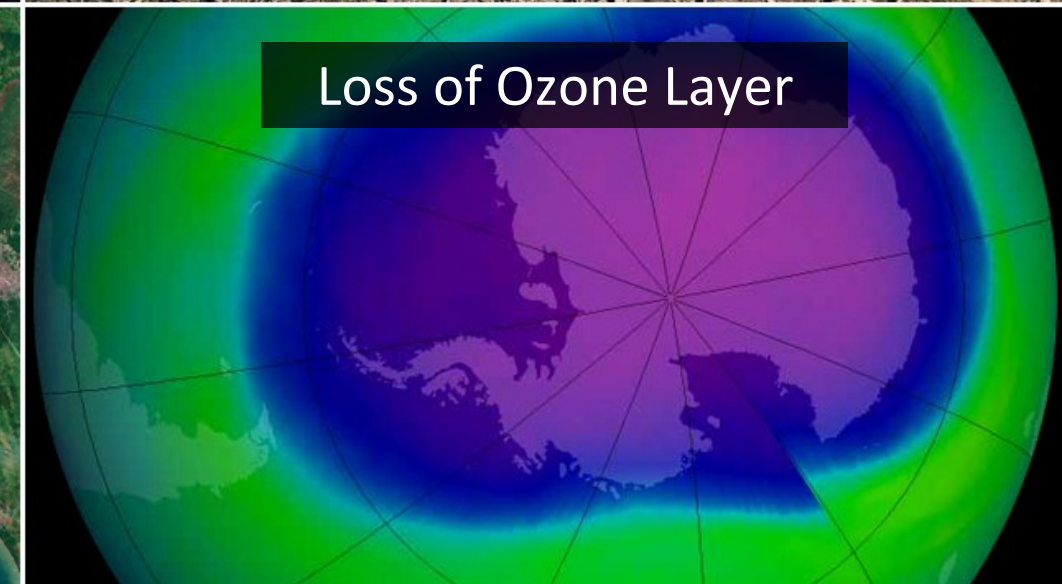
Land Use



Fertilizer Overuse



Loss of Ozone Layer



Rising Ocean Acidity



Pollution



Air Pollution

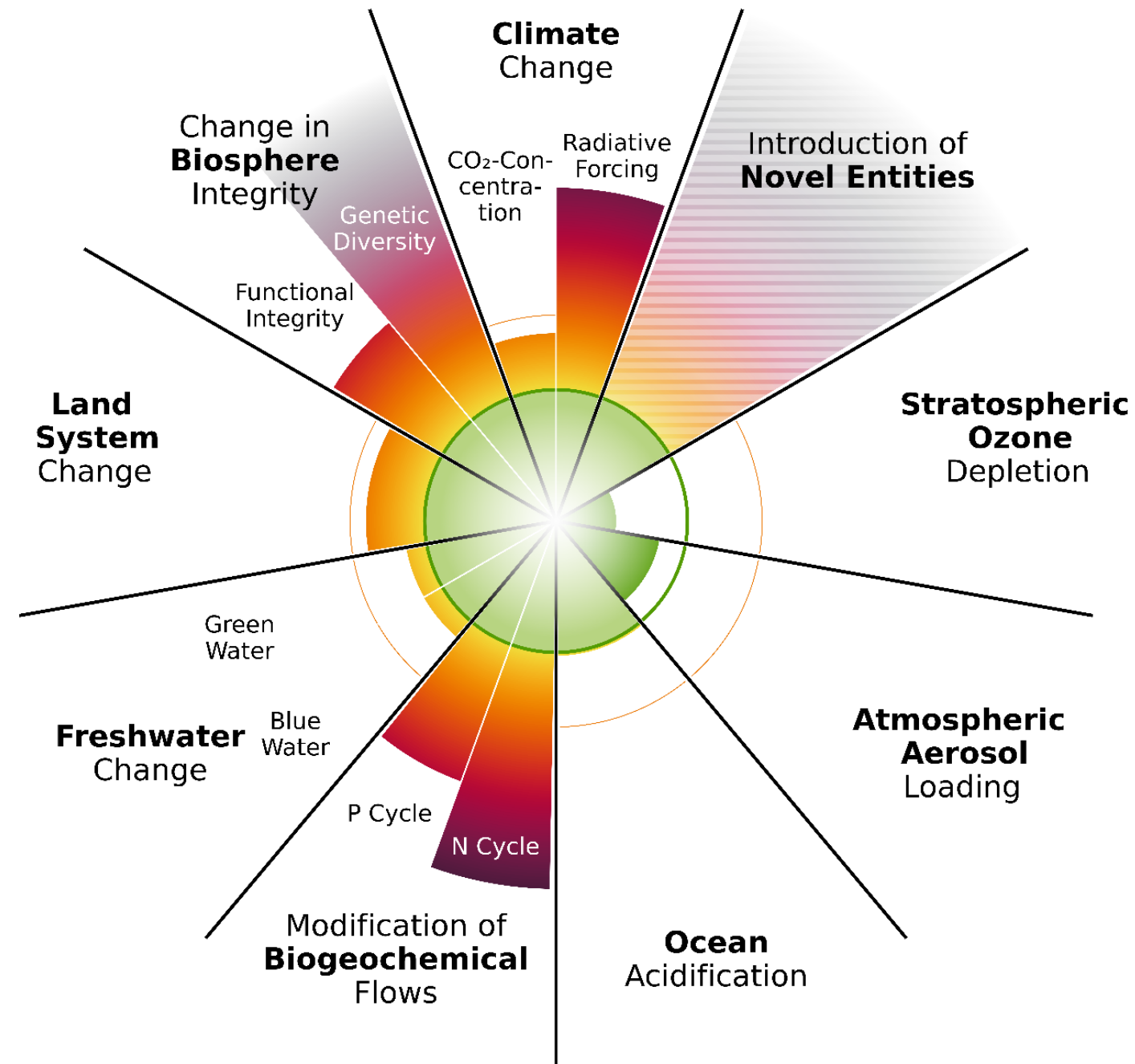


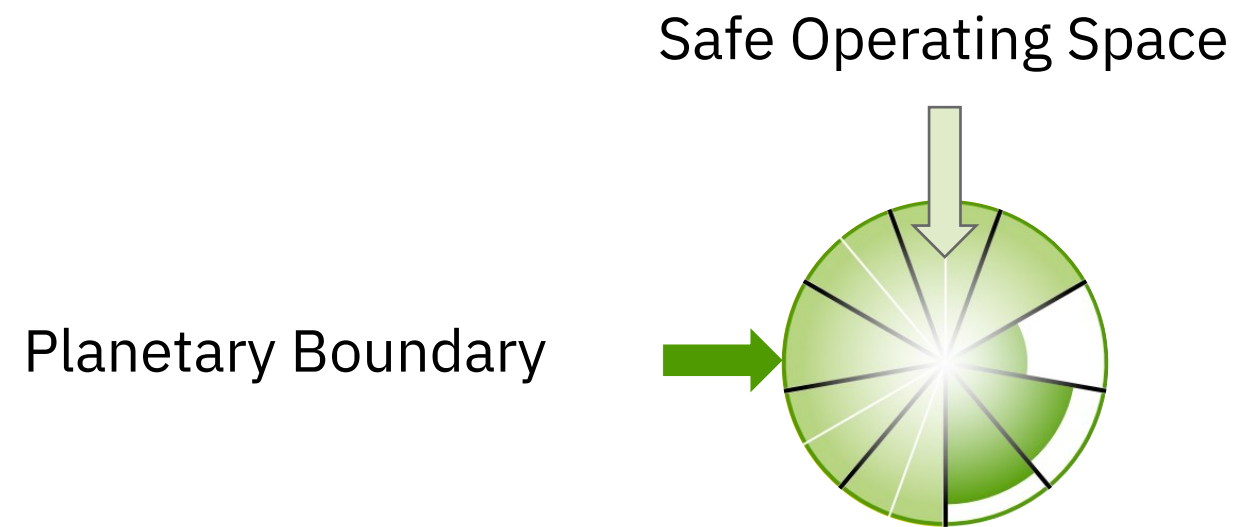


# What the Planetary Boundaries Framework is (not!)

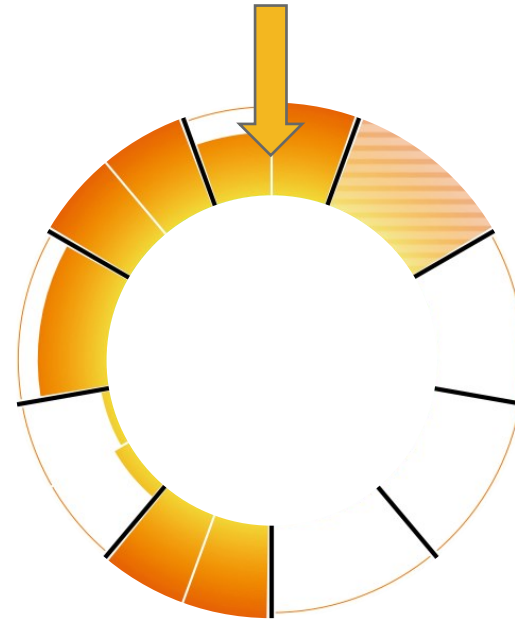
- Based on natural sciences – not socioeconomic factors
- Complementary – not in competition – to the SDGs
- Ever-evolving – open to be expanded or corrected where scientifically required







Zone of Increasing Risk

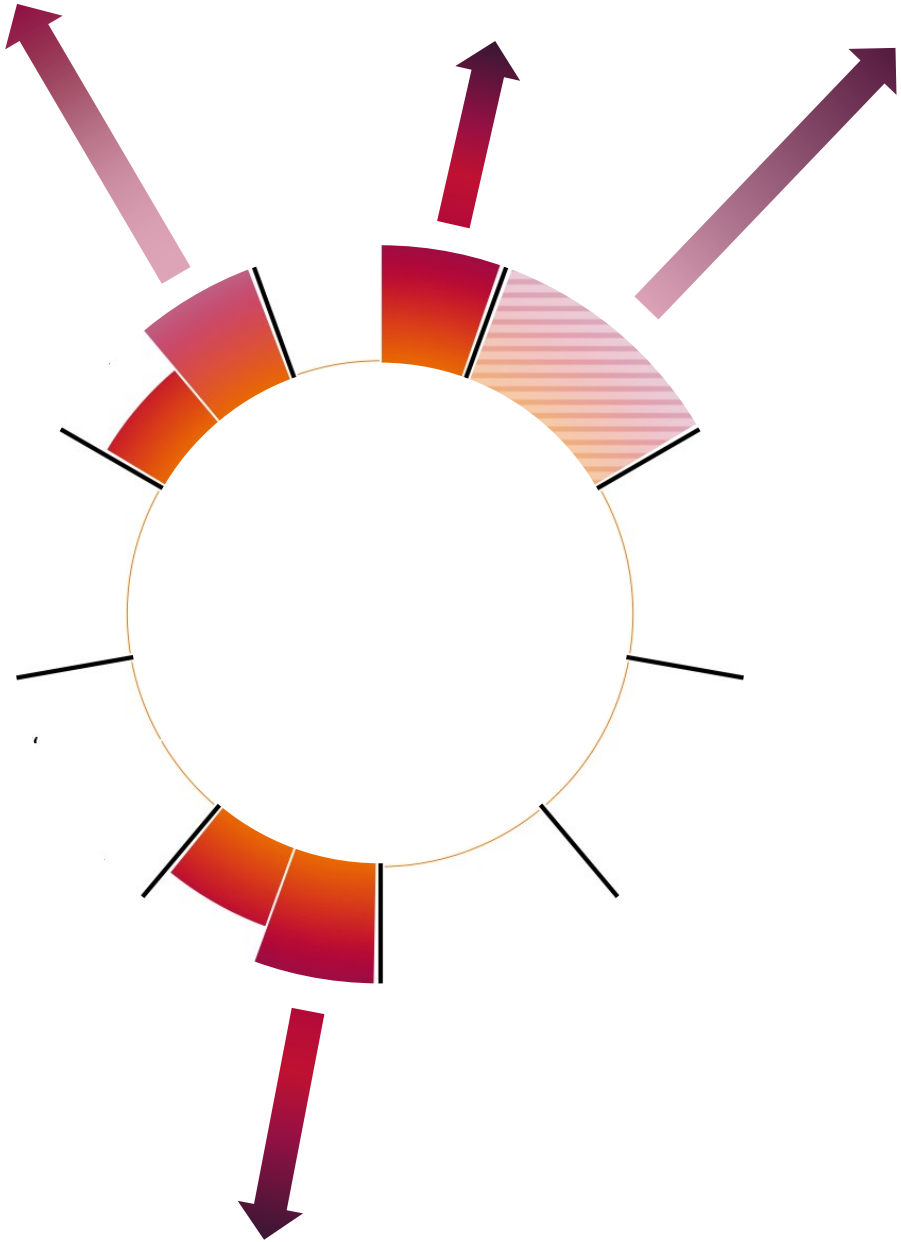


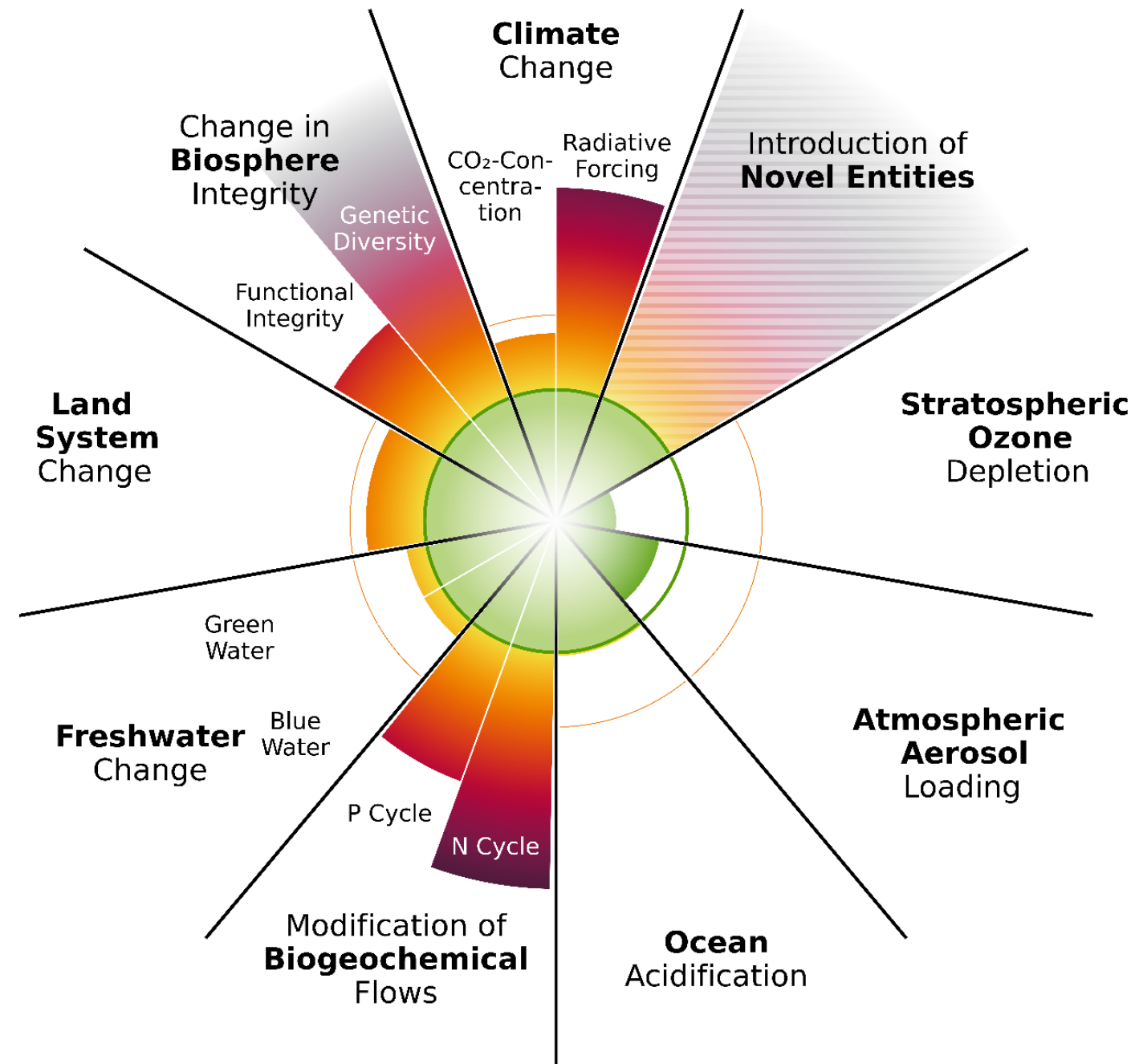
Planetary Boundaries are **already transgressed !**

High-Risk Zone



High-Risk Zone





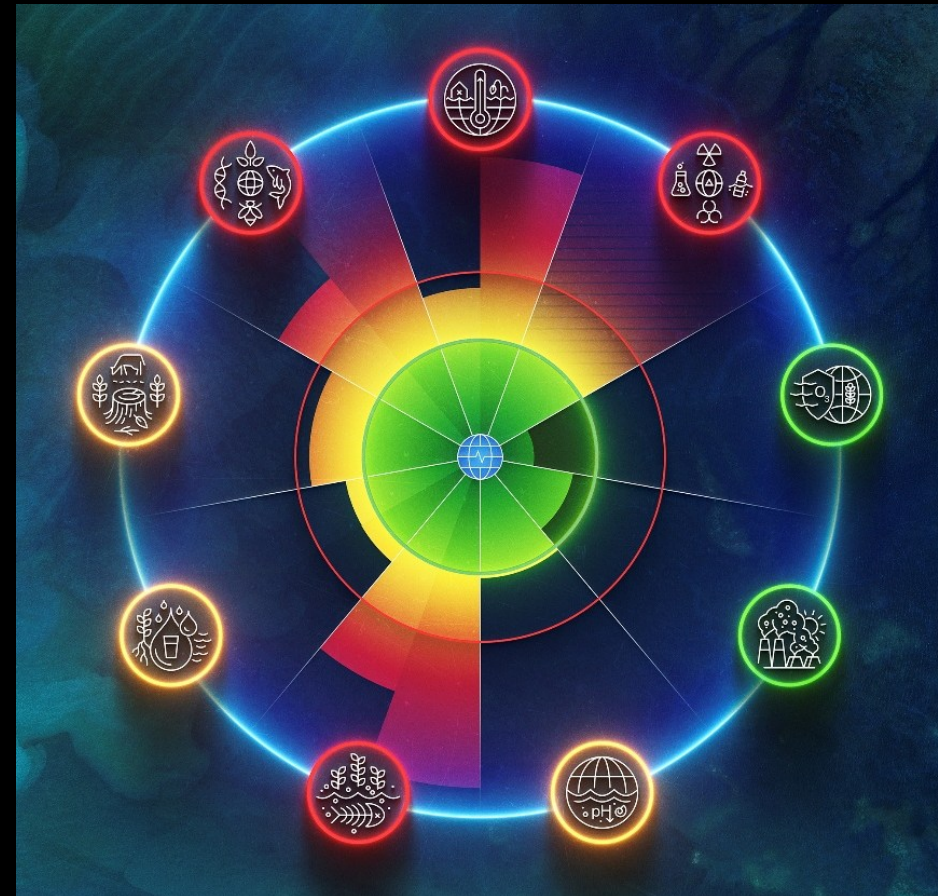


What is the **Planetary Health Check Report** & why is it published annually?









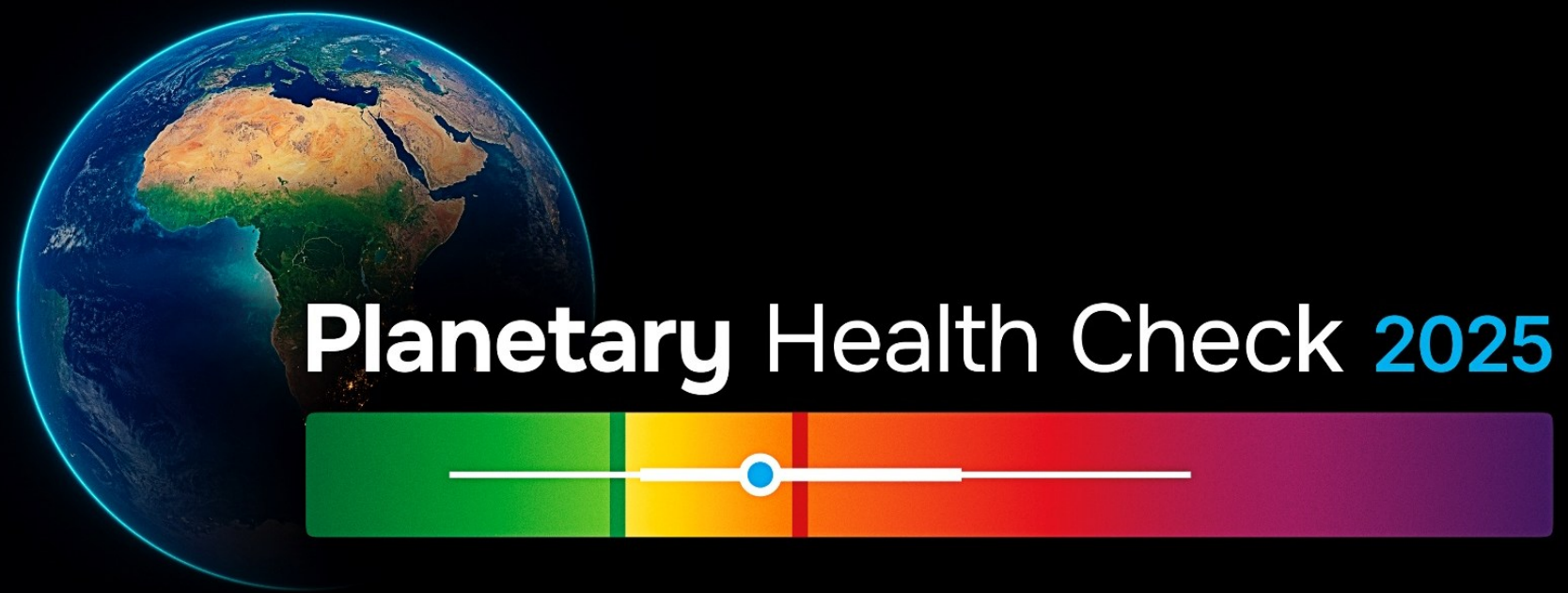
# Planetary Health Check 2025

A Scientific Assessment of the State of the Planet



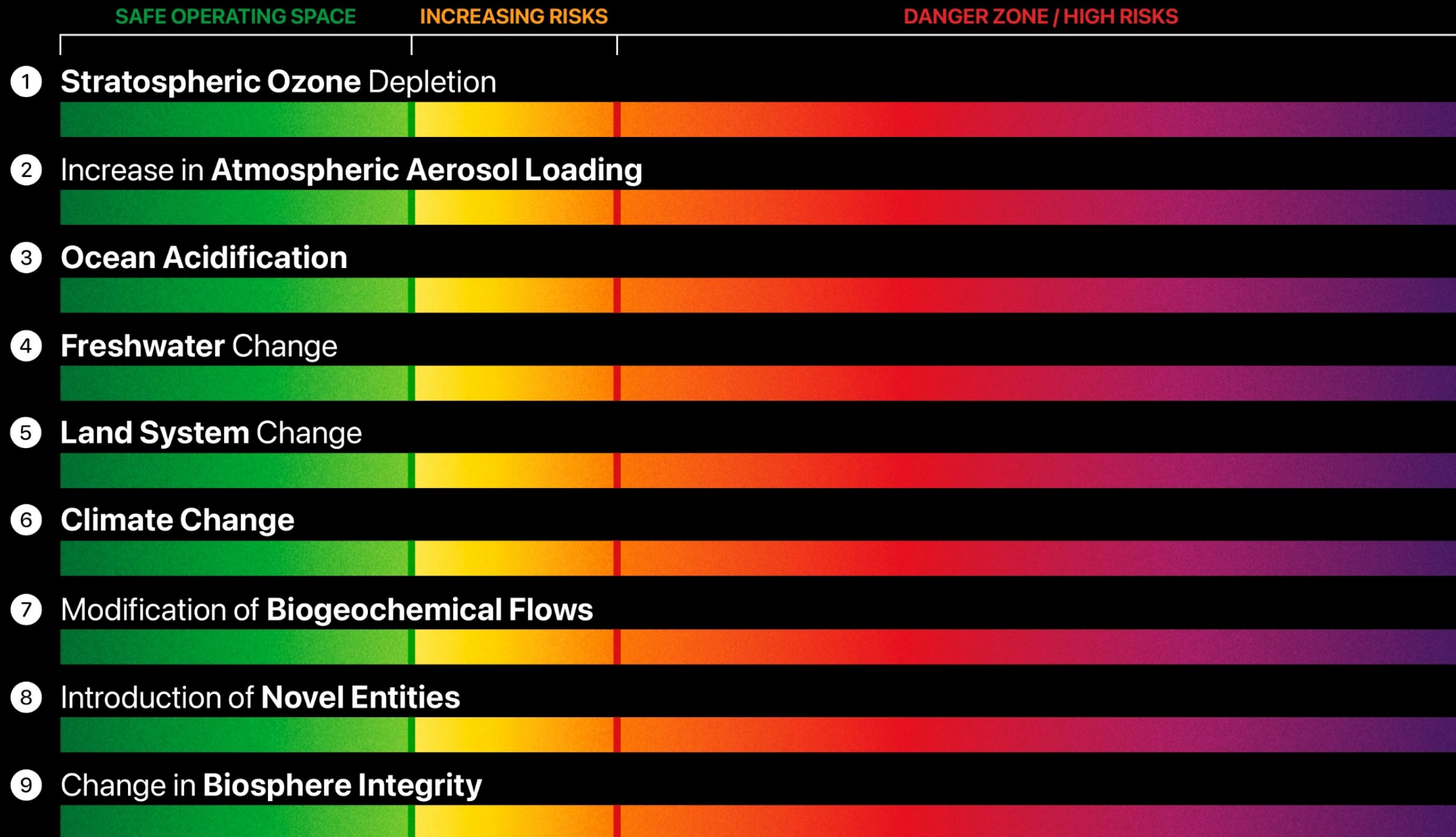


# Representing planetary health in one metric



# THE PLANETARY BOUNDARIES

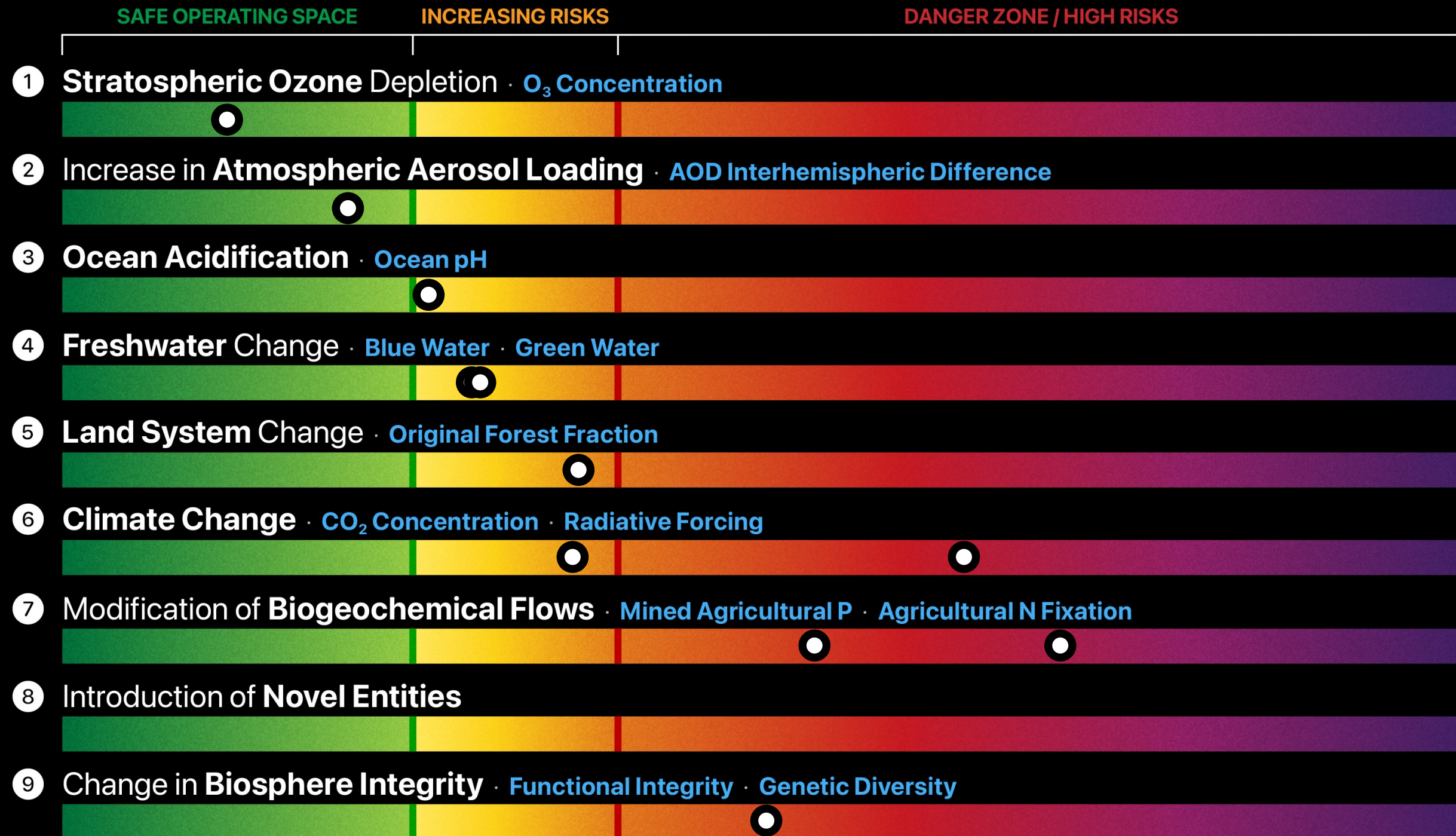
Nine pillars of Earth's stability, resilience, and habitability





# THE PLANETARY BOUNDARIES

Nine pillars of Earth's stability, resilience, and habitability



How do we **prioritize**  
in the face of polycrises?

# Three tough truths about climate

What I want everyone at COP30 to know.



By **Bill Gates** published 7 days ago

[Home](#)

→ TRUTH #1 ←

**Climate change is a serious problem, but it will not be the end of civilization.**

→ TRUTH #2 ←

**Temperature is not the best way to measure our progress on climate.**

→ TRUTH #3 ←

**Health and prosperity are the best defense against climate change.**

# Three tough truths about the Planetary Boundaries

TRUTH #1:

We can modify our physical environment  
– but cannot argue with physics.



Los Angeles  
January 2025



Josh Edelson / AFP

Valencia  
October 2024



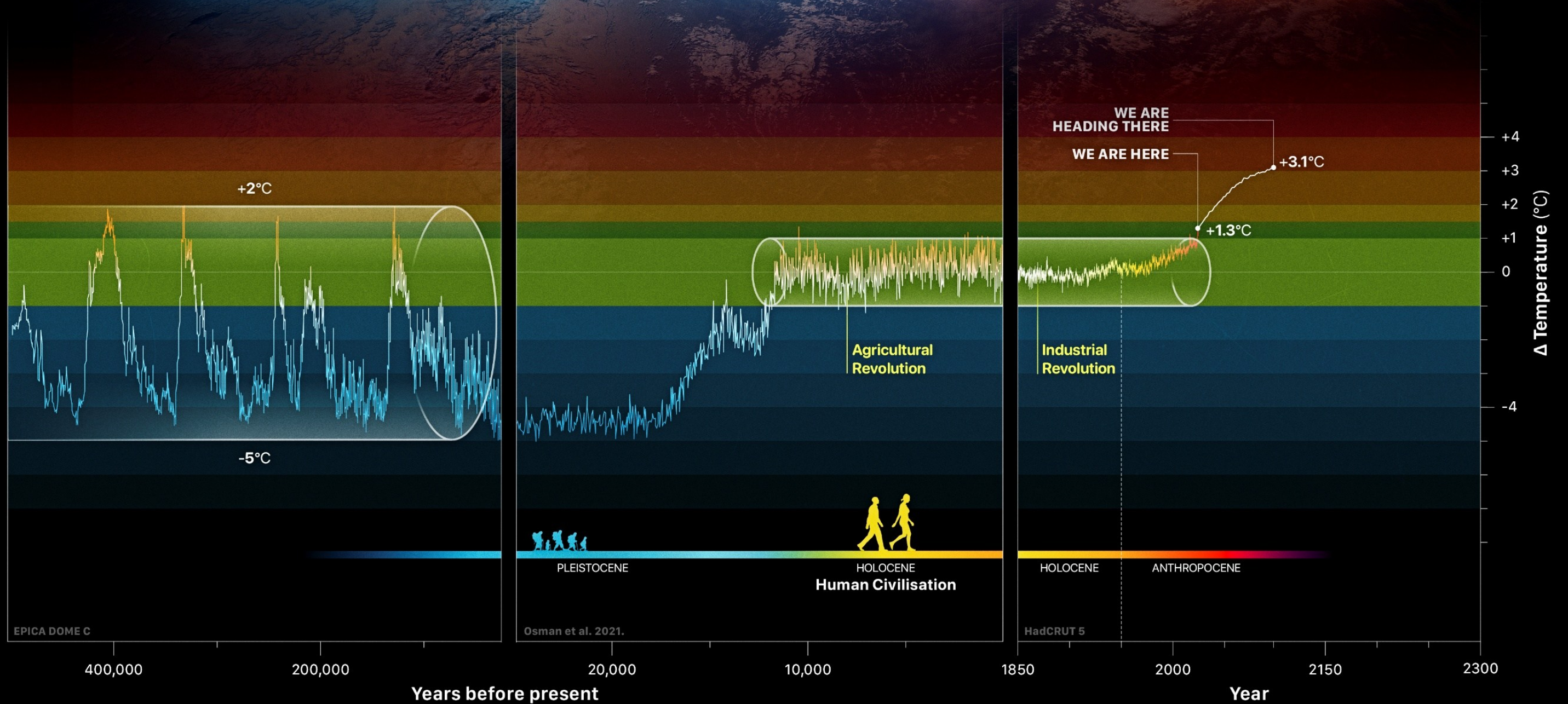
Alberto Saiz / AP



## TRUTH #2:

We do not have all the answers –  
so the precautionary principle matters.

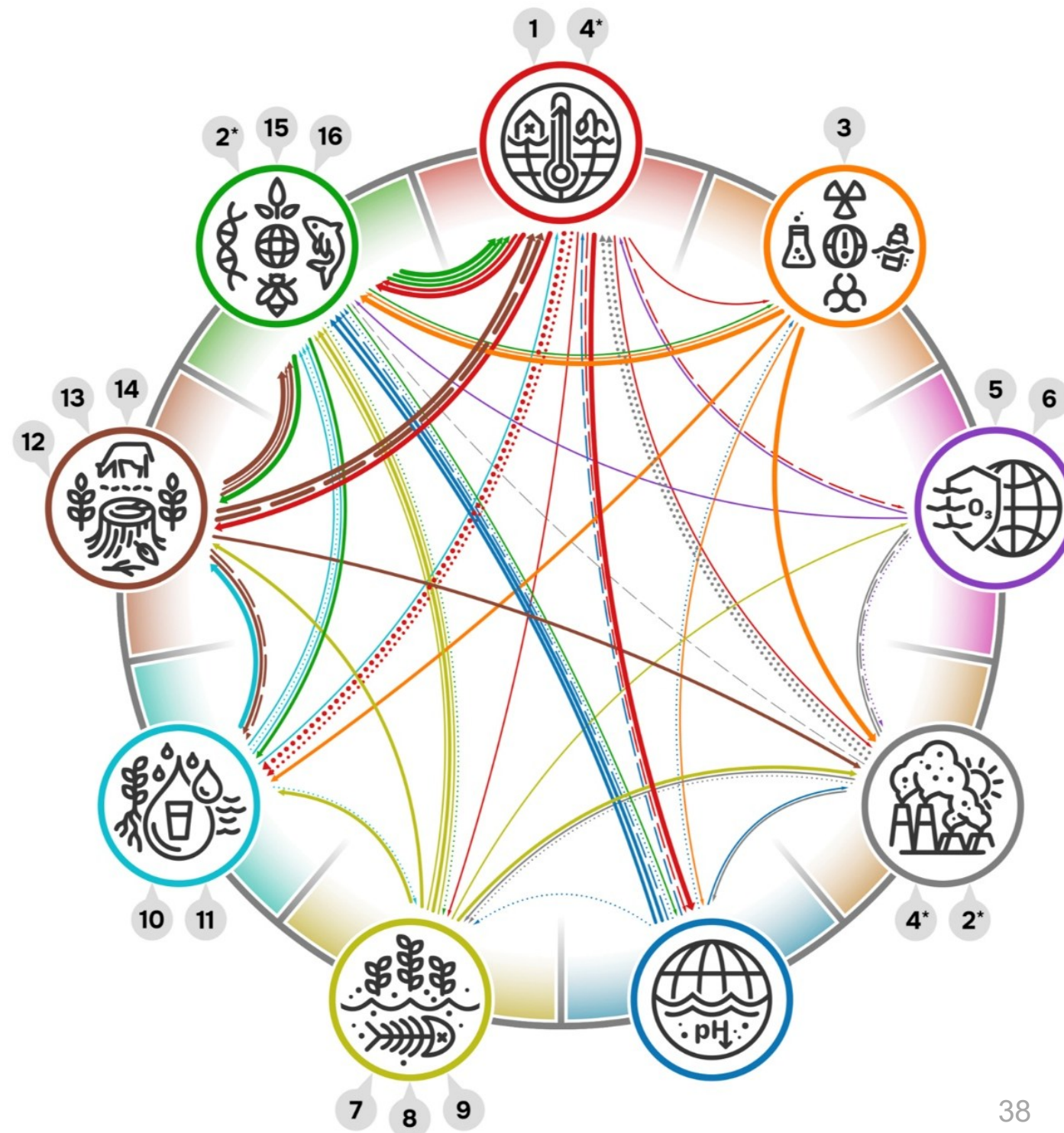
# Humanity's Journey on Earth



TRUTH #3:  
Complex problems (usually)  
require complex answers.



# The causal network of Planetary Boundary processes




## PB INTERCONNECTIONS

**COLOR**  
 Planetary  
 Boundaries  


**WIDTH**  
 Interconnection  
 Relevance

**SOLID LINE**  
  
 Connection increasing  
 transgression

**DASHED LINE**  
  
 Connection decreasing  
 transgression

**DOTTED LINE**  
  
 Connection with both  
 effects possible

## PB DRIVERS

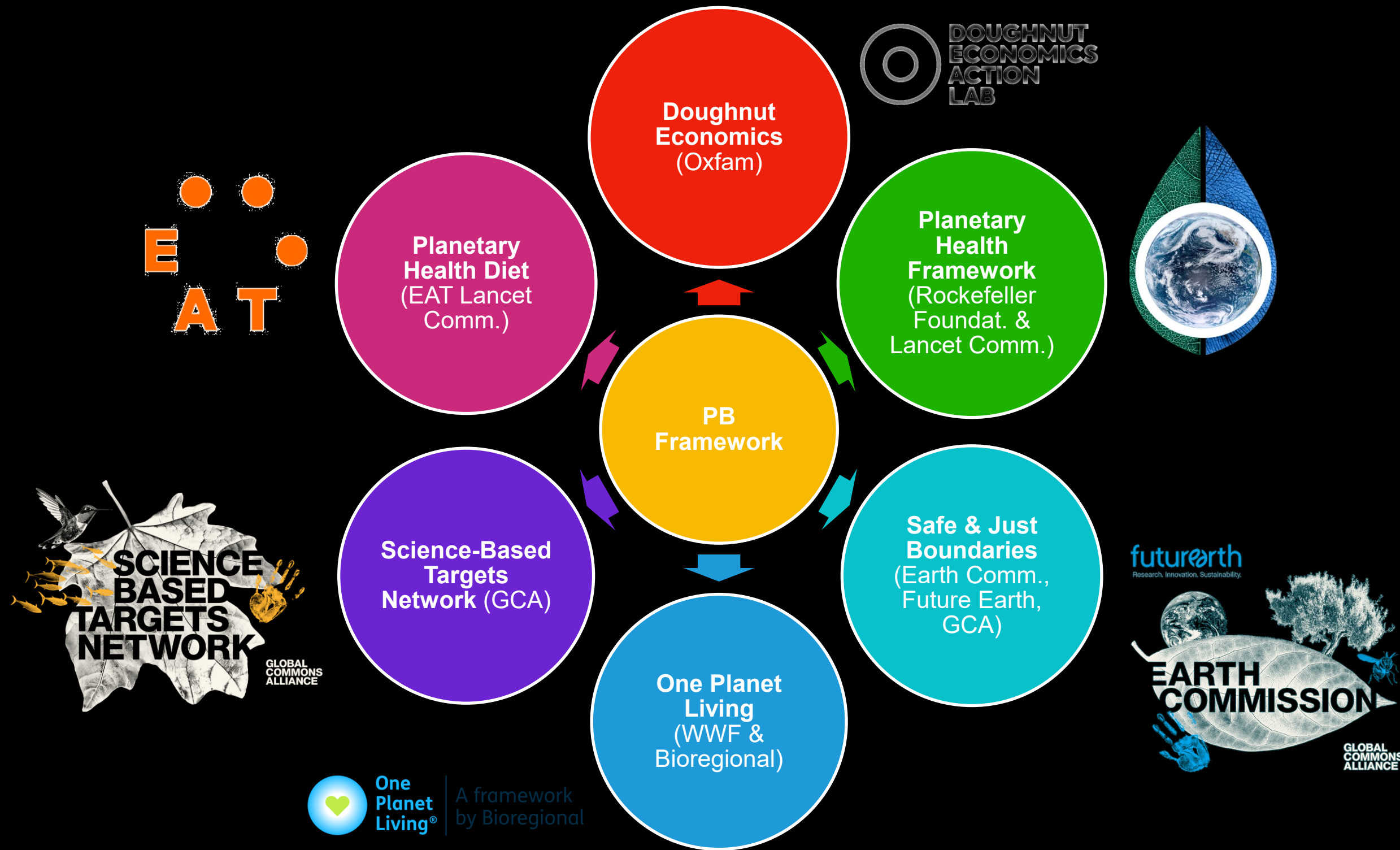
\* same driver shown twice for different PBs

- 1 Emission of non-CO<sub>2</sub> greenhouse gases (other pathways than fossil fuel burning)
- 2 Biomass burning
- 3 Release of untested synthetic chemicals
- 4 Fossil fuel burning
- 5 Emissions of synthetic chlorofluorocarbon molecules
- 6 N<sub>2</sub>O release to the atmosphere (in multiple contexts, mainly agriculture)
- 7 Application of industrially-fixed N to fields as fertilizers

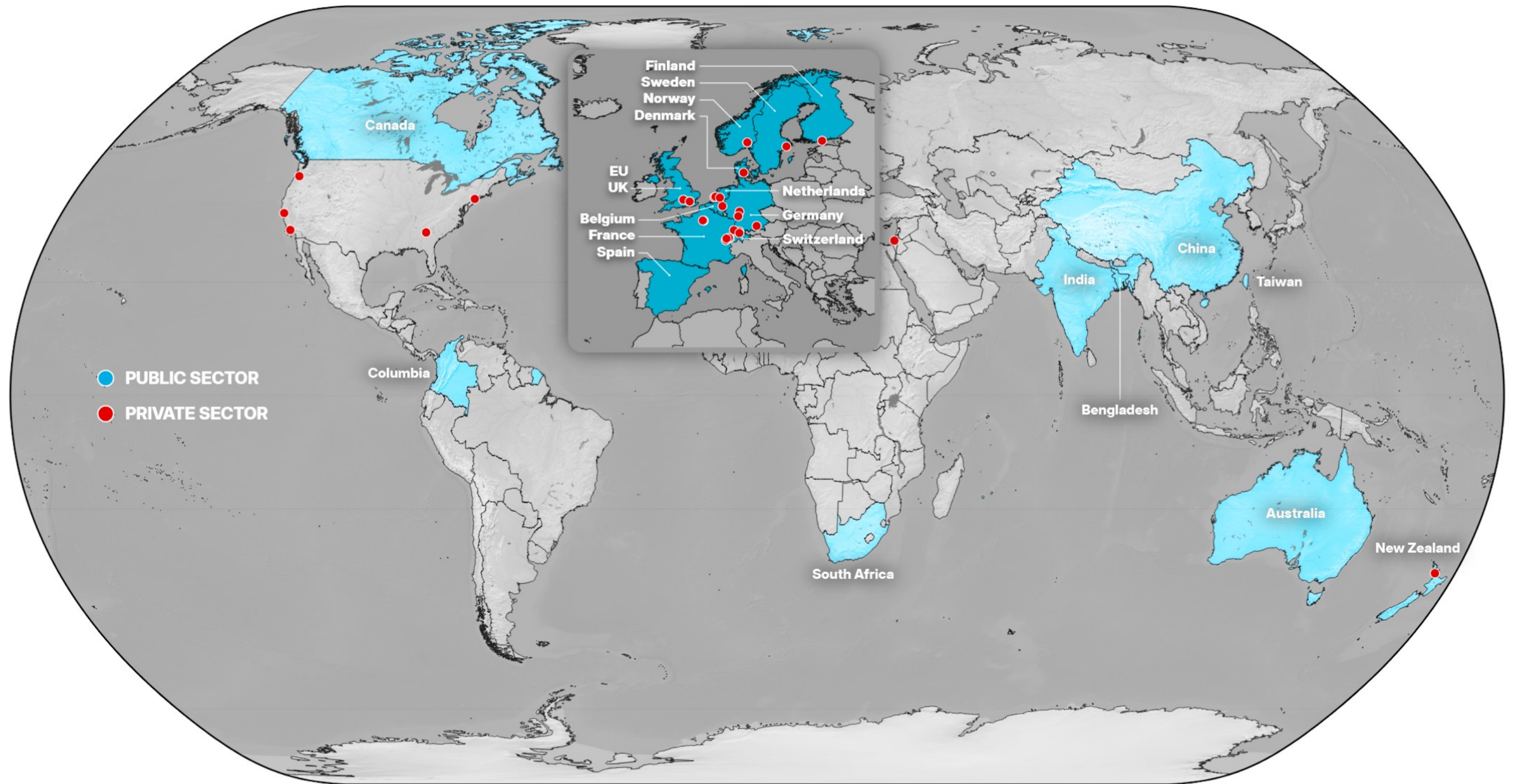
- 8 Cultivation of N-fixing crops
- 9 Application of mined mineral P to fields as fertilizers
- 10 Industrial and household water use
- 11 Irrigation and agriculture
- 12 Expansion of livestock grazing
- 13 Expansion of cropland
- 14 Expansion of settlements and infrastructure
- 15 Introduction of invasive species
- 16 Harvesting biomass

How can the Planetary Boundaries  
**guide** sustainable development?

# Frameworks founded on the Planetary Boundaries







**FIGURE 14 - Planetary Boundaries applied around the world.** Attempts to operationalize the Planetary Boundaries framework in different national, regional and business contexts (not comprehensive).



# Planetary Boundaries (PBs) from global to local

## Global

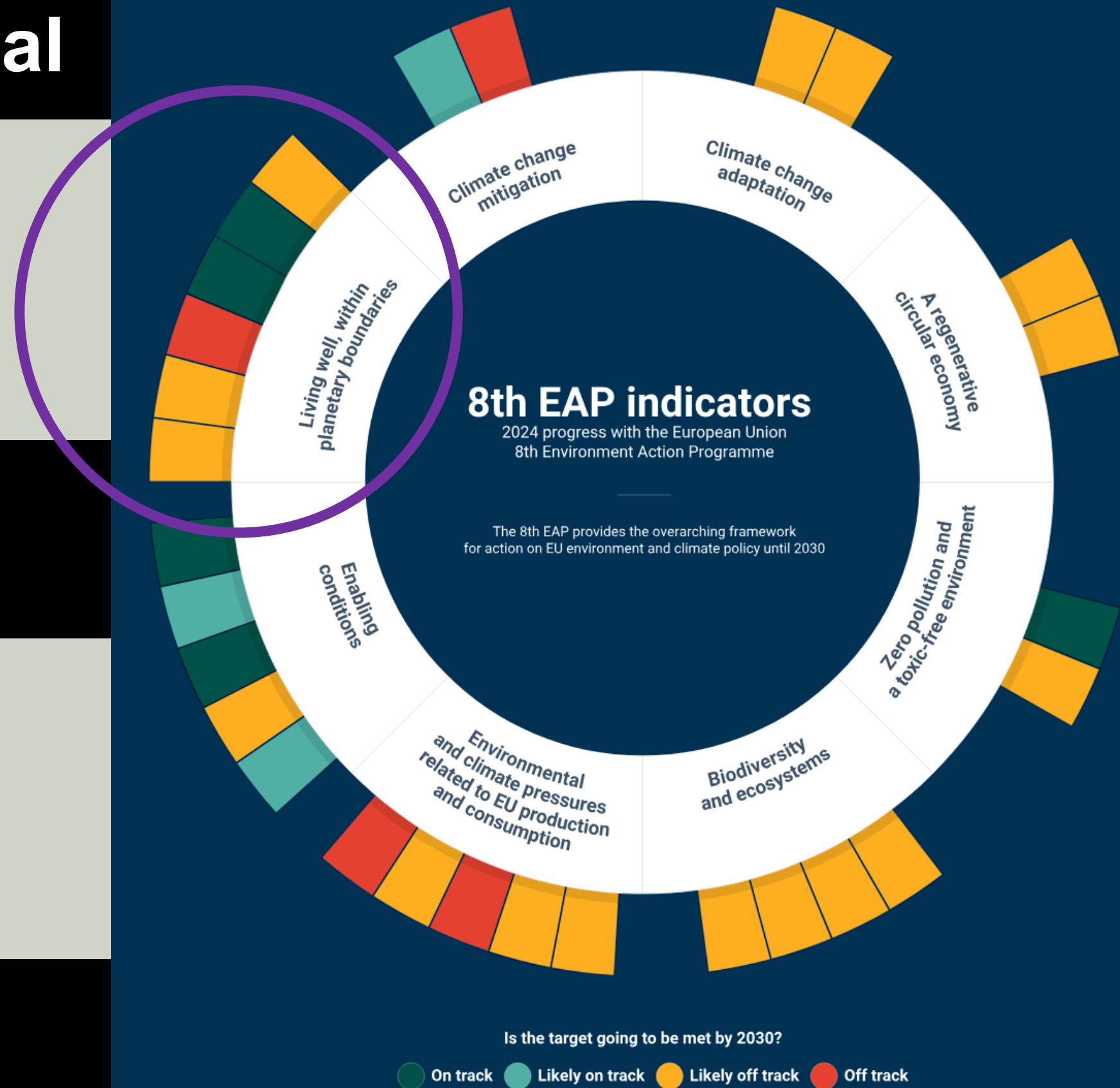
- › PBs shaped UN **SDGs** & **Paris Agreement** (e.g. climate targets align with PB for 1.5–2°C).



# PBs from global to local

## Transnational

- › **EU's 8th Environment Action Program** aims for 'well-being within planetary boundaries'.





# PBs from global to local

## National

- **Germany** uses PBs as policy 'guardrails';
- **New Zealand** national PB report as a **guide into a sustainable future**;
- **Switzerland** held a referendum on **economic reform in line with PBs** this year.



Transformation  
gemeinsam  
gerecht gestalten

Deutsche Nachhaltigkeitsstrategie  
Weiterentwicklung 2025

A safe operating space for  
New Zealand/Aotearoa

Translating the planetary boundaries framework



# PBs from global to local

## Local

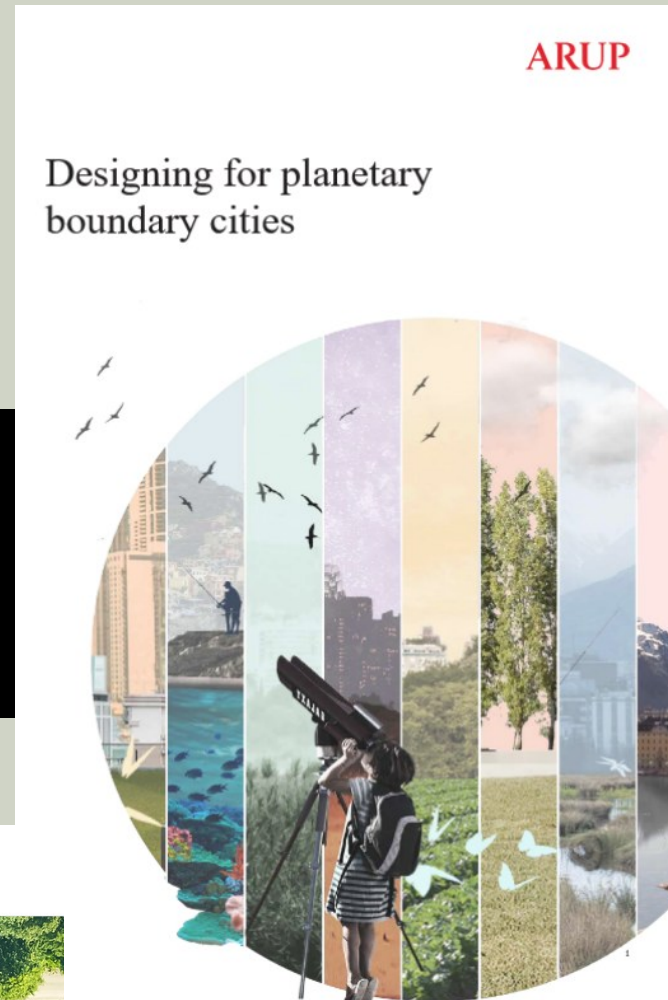
- › **Amsterdam** applies 'Doughnut Economics' to align city planning with PBs





# PBs for businesses

- › Arup
- › Houdini Sportswear
- › Ragn-Sells Group
- › ...



RAGN SELLS

Circular transition Sustainability About us



Conducting business within planetary boundaries

## CIRCULAR STYLES

2015

2023

61%

FALL 2015

85%

FALL 2023

40%

SPRING 2015

80%

SPRING 2023

*Houdini's advancement in share of circular styles from 2015 to 2023.*

# My personal recommendations

- Foster eye-level collaboration where possible.
- Prioritize knowledge transfer.
- Fight inequality not just between, but also within societies.
- Lead by example.





# Thank you

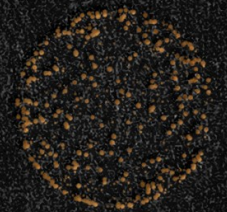
**planetary**healthcheck.org



**Planetary Boundaries**  
SCIENCE



PIK  
POTSDAM INSTITUTE FOR  
CLIMATE IMPACT RESEARCH



**Planetary**  
Guardians



# Menti survey

We'd like to get a sense of how everyone is feeling in the light of the information shared

<https://www.menti.com/al16oghe9ow1>





Please rate the following statements about addressing today's polycrisis.

How well do you feel you contribute personally to tackling today's poly crisis in your daily work?



To what extent do you feel your institution is keeping pace with today's poly crisis?



Strongly disagree

Strongly agree

# PART 2 :

## Panel discussion





# Today's panellists



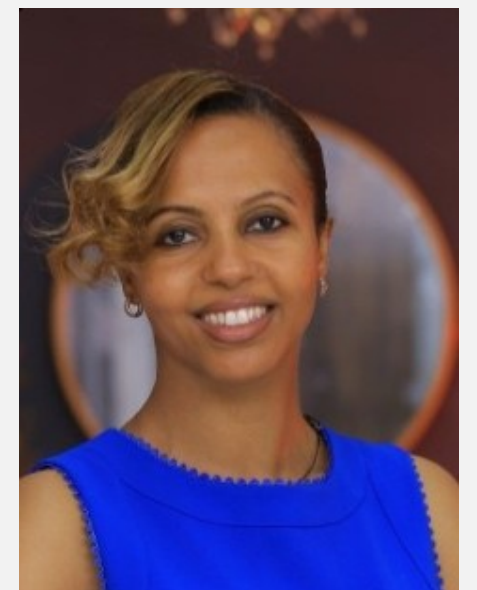
**Carmen Thönnissen**  
*Regional advisor*  
*Water and Environment*  
*SDC Skopje, Western Balkans*



**Lucien Blandenier**  
*Regional advisor*  
*Water, Sanitation, Climate, DRR*  
*SDC Amman, Middle East*



**Nicole Stolz**  
*Head of Department*  
*Development Cooperation*  
*Swissaid, Bern, Global*



**Meron Wubishet**  
*Water Food Climate*  
*Programme Director*  
*Addis, Helvetas Ethiopia*



## Clusters of negotiating chapters

Following the introduction of the revised methodology for the accession negotiations in February 2020, negotiating chapters are now divided in six thematic clusters.

- 1. Fundamentals
- 2. Internal market
- 3. Competitiveness & inclusive growth
- 4. Green agenda & sustainable connectivity
- 5. Resources, agriculture & cohesion
- 6. External relations



# REVISED ACTION PLAN

FOR THE IMPLEMENTATION OF THE SOFIA DECLARATION  
ON THE GREEN AGENDA FOR THE WESTERN BALKANS  
2025-2030



























**HELVETAS**  
ETHIOPIA





**HELVETAS**





**HELVETAS**  
ETHIOPIA



# Menti survey

What word best describes your  
feeling at the end of this  
discussion?

<https://www.menti.com/al16oghe9ow1>





What word best describes your feeling at the end of this discussion?

troubled hope okay neutral  
what now **confusion** bleak  
overwhelming consultation doubt transformation  
uncertainty motivation too complicated

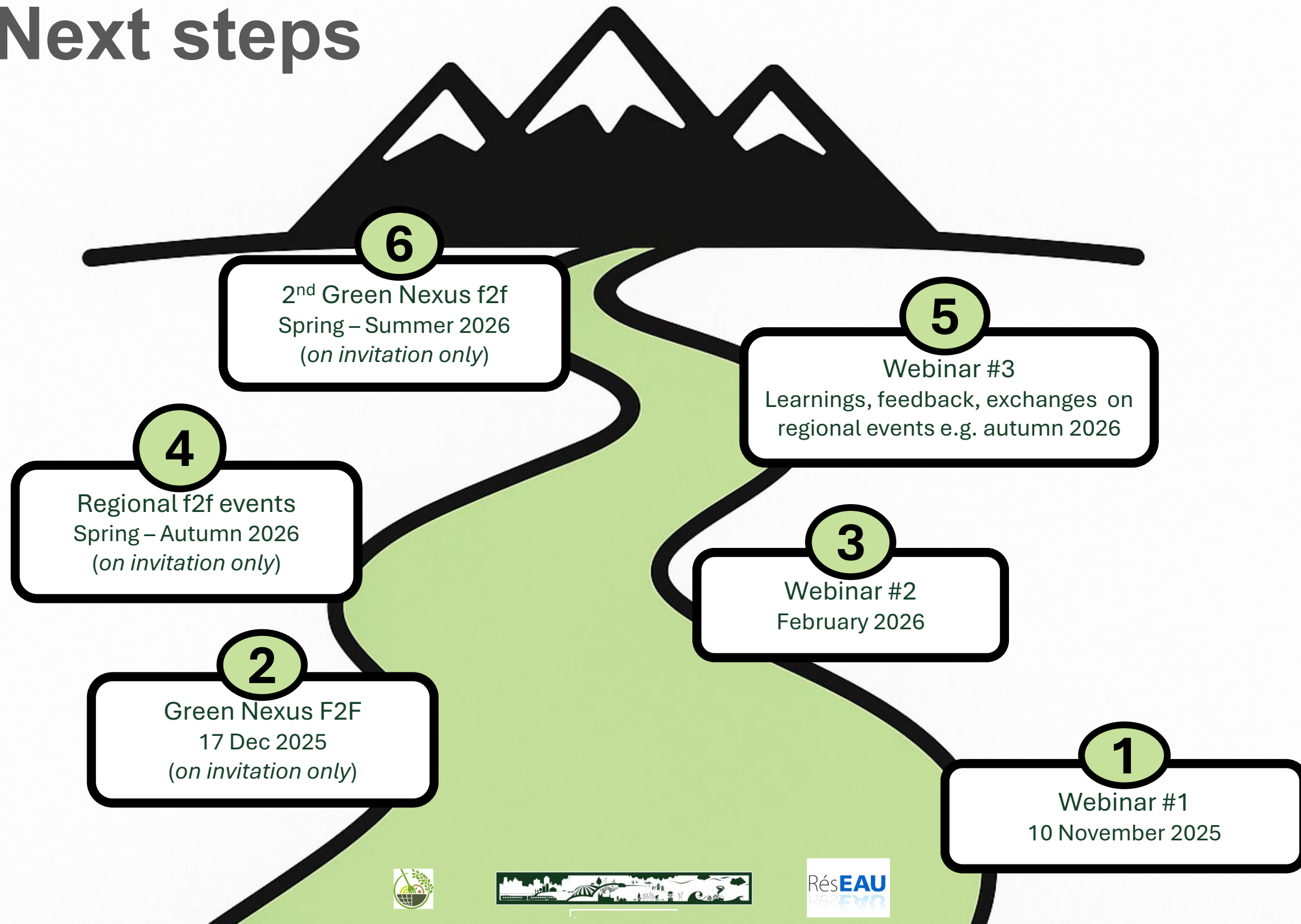


# Wrap-up





# Next steps





# Thank you !



**Agriculture & Food systems**



**Climate, DRR & Environment**



**Water**