Exploring the Future of Environmental Challenges: Current Trends and Emerging Issues

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Climate change

- 2024 was the warmest year on record
- 2024 was the first year with an average temperature exceeding 1.5°C above the pre-industrial levels
- The State of the Global Climate 2023 report shows increased: GHG emissions, surface temperatures, ocean heat and acidification, sea level rise, reduced Antarctic sea ice cover and glacier retreat.
- Heatwaves, floods, droughts, wildfires, and rapidly intensifying tropical cyclones all evident

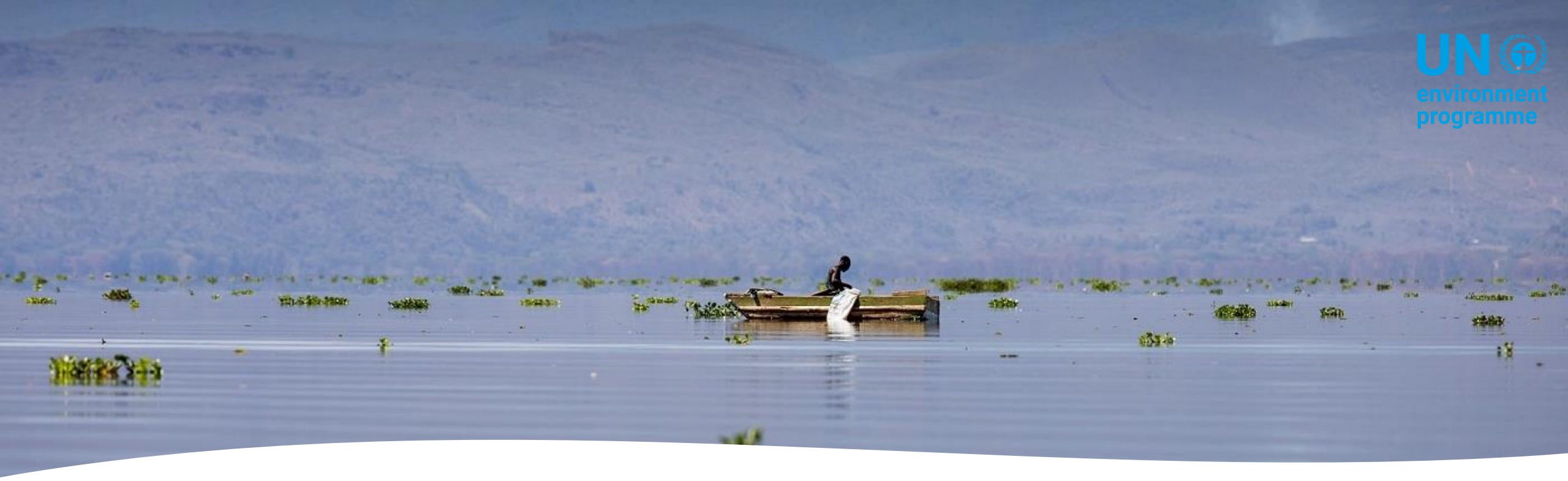
Note: One or two years that exceed 1.5°C above the pre-industrial level does not imply that the Paris Agreement has been breached. With the current rate of warming at more than 0.2°C per decade, the probability of breaching within the 2030s is highly likely (Copernicus 2025).

Source: WMO (2023)State of the Global Climate 2023, https://library.wmo.int/records/item/68835-state-of-the-global-climate-2023

Copernicus 10 January 2025 Global Climate Highlights 2024.

- 66% of ocean area is impacted by human activities, including from fisheries and pollution (IPBES, 2019).

- 90%: The world’s marine fish stocks are fully exploited, overexploited or depleted (FAO, 2018).



- 75% of the Earth’s land surface has been significantly altered by human actions, including 85% of wetland areas (IPBES,2019).

>50%: Global population living in areas experiencing highest impacts from declines in biodiversity, water availability and quality and food security, and increases in health risks and negative effects of climate change (IPBES, 2024).

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Plastic pollution crisis

- Humanity produces more than 430 million tonnes of plastic annually (a figure expected to double by 2040), two-thirds of which are short-lived products that soon become waste, filling the ocean and, often, working their way into the human food chain
- Plastics – complex mixtures with many additives (stabilizers, fillers, plasticizers, colorants, flame retardants, curing agents)
- Plastics and Additives may degrade to form other chemicals and micro-plastics enabling environmental and human health exposure
- Over 3200 identified chemicals of concern.

Critical Shifts

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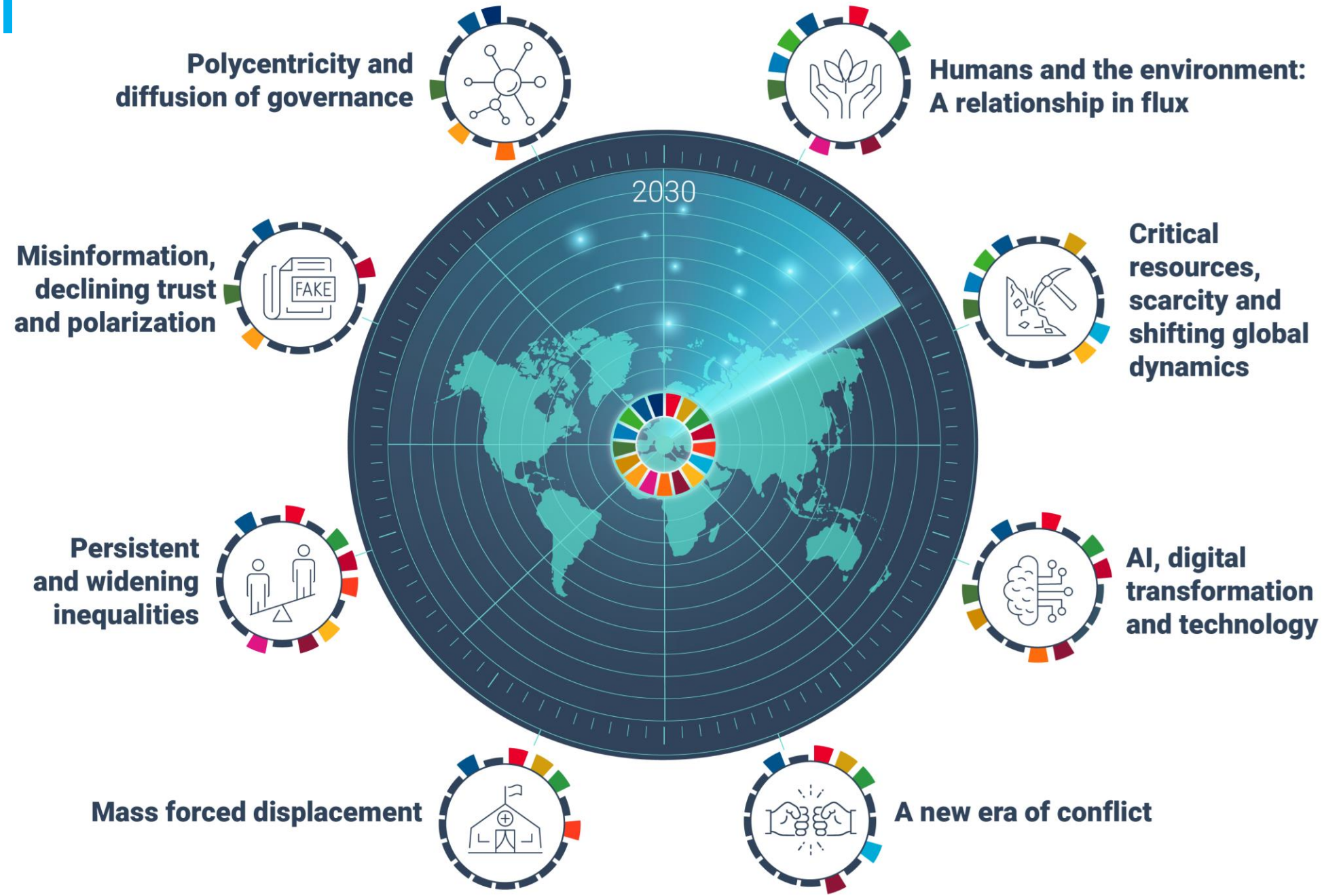
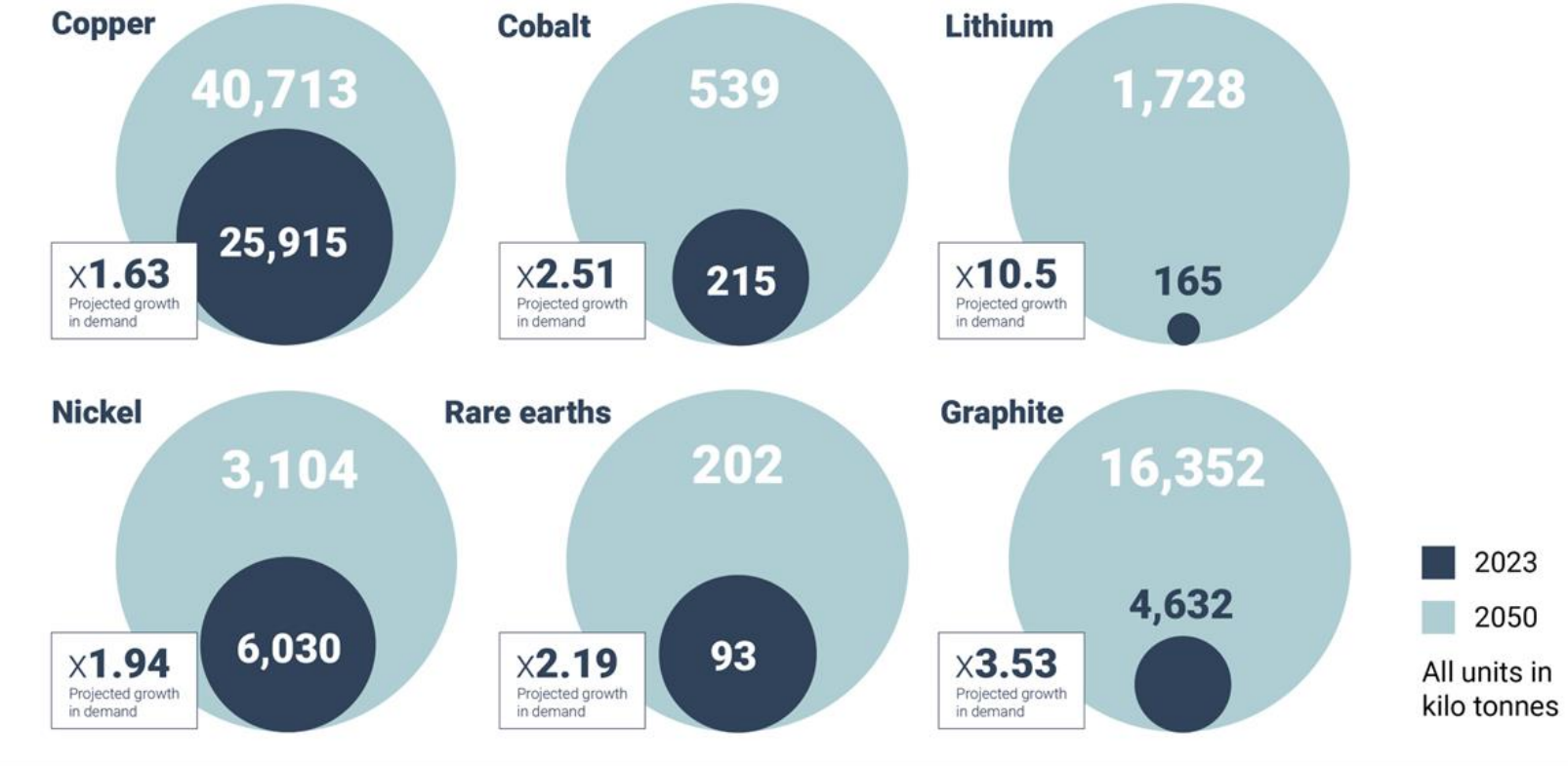


CRITICAL SHIFT

Resources, scarcity and competition shifting global dynamics



Global transition to clean energy expected to create massive demand increase for critical minerals, especially those used in manufacturing batteries and electricity networks, key inputs in emerging technologies and markets

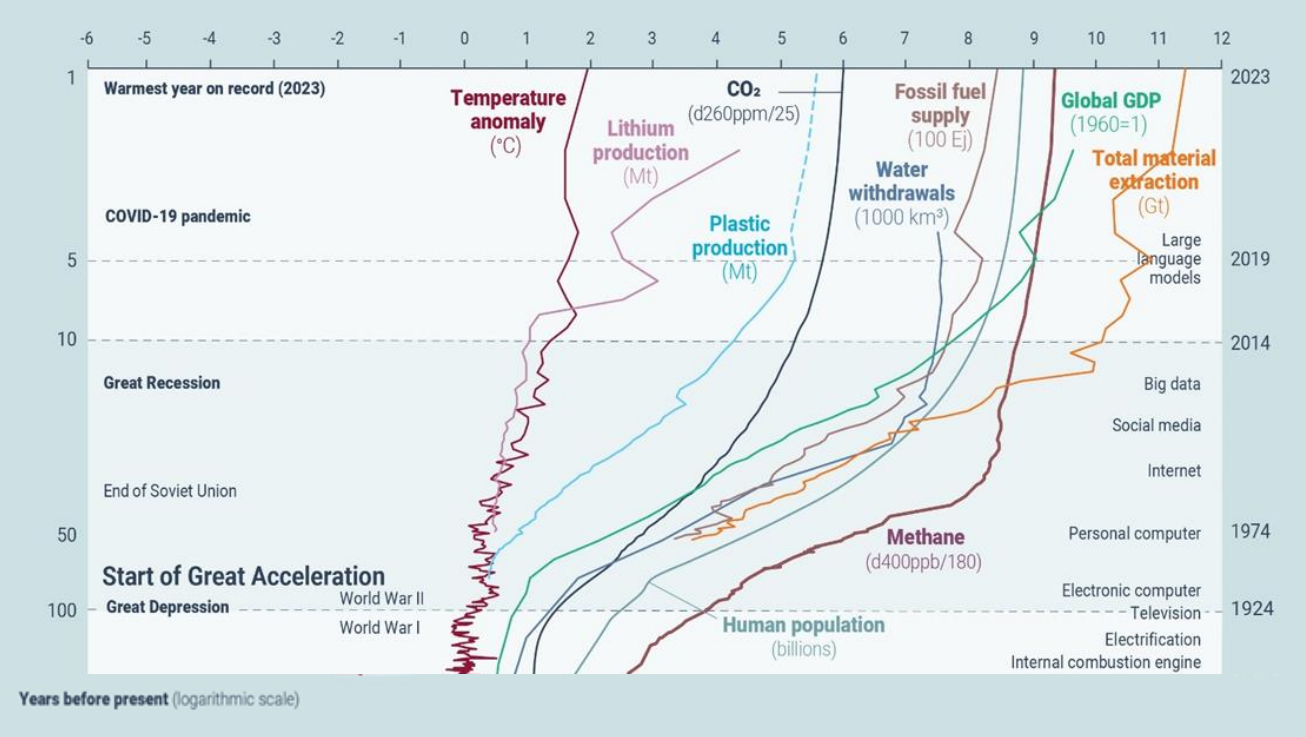
Projected growth in demand for critical minerals in 2050 to achieve net zero emissions

Source: IEA 2024

- As countries discover more sources for materials, **competition** and potential **confrontation** likely to increase.

CRITICAL SHIFT

Humans and the environment: A relationship in flux



The Great Acceleration – human-driven social, technological and environmental changes have surged dramatically since the mid-20th century, representing the start of a major shift in our collective relationship to each other and to the Earth system.

- The human condition and the health of **our planet** are inextricably linked.
- **Accelerating climate crises:** record-breaking climate events surge in number, velocity and scale, wreaking havoc across the globe.
- By 2050, ~**25%** of the **global population of adults** will be exposed to chronic and acute dangerous heat extremes, putting up to 246M older people at risk—largely in Africa and Asia.
- Continuing **environmental degradation** and cascading shocks are pushing natural ecosystems and humans to limits.

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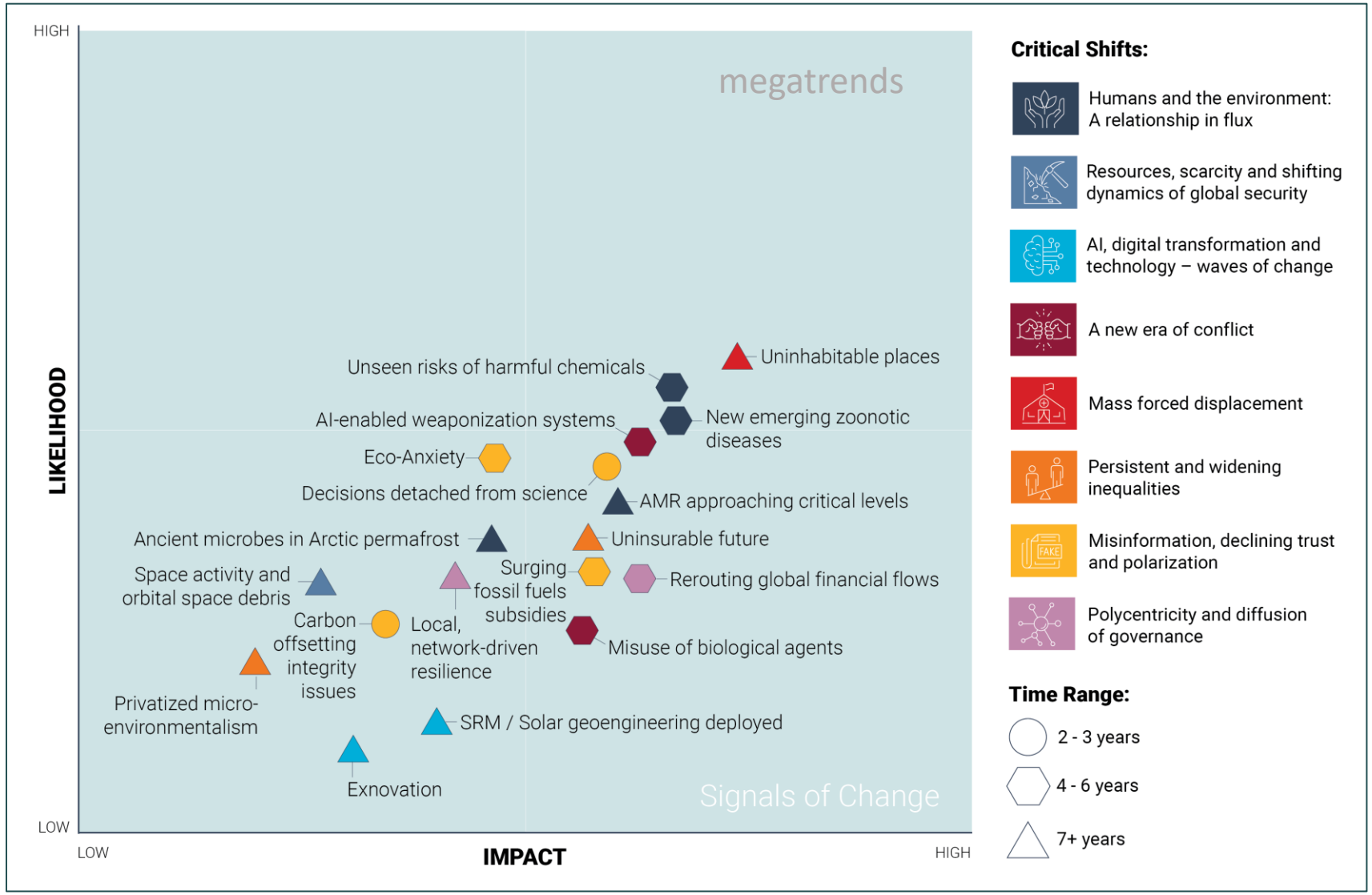
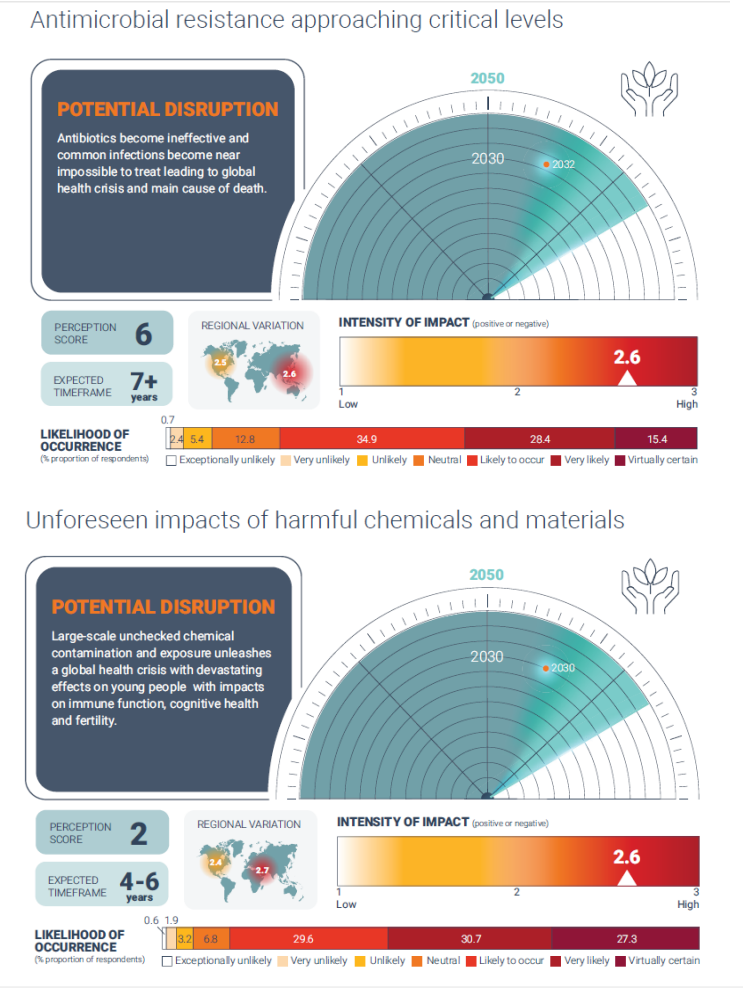
18 signals of change



Pollution: a major contributor to poor health

- An estimated one quarter of the global burden of disease linked to modifiable environmental factors (Factors include air pollution, water and sanitation, increasing heat waves and severe weather events, harmful exposure to chemicals and more). (WHO 202) https://www.who.int/publications/i/item/9789241565196
- In 2024, 94% of the global population exposed to PM2.5 levels > WHO guideline annual average
- Estimated 8.4 million deaths a year attributed to air pollution – significant costs to society.
- Global Health Security along with antimicrobial resistance - a top priority on the global public health agenda.

Signals of change



The establishment of the Panel has been agreed June 2025 Uruguay – 'Chemicals Waste and Pollution

Objective and functions

- **Objective:** "To strengthen the science-policy interface to contribute to the sound management of chemicals and waste and to prevent pollution for the protection of human health and the environment."

- **Functions:**
  - Undertake horizon scanning
  - Conducting assessments
  - Providing up-to-date information, identifying gaps, supporting communications and raising public awareness
  - Facilitating information sharing
  - Capacity building

Intergovernmental Negotiating Committee (INC) to develop an international legally binding instrument on plastic pollution, including in the marine environment

To be decided August 2025

Issues that have *and* are being considered

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Goal to prevent plastic pollution including in the marine environment

Plastic products

- What plastic products are considered > their use
- Product design improvements and introducing circularity
- Environmental
- What needs control of management i.e. single use; chemical additives
- Life Cycle analysis
- Ability for re-use / recycling
- Extended Producer Responsibility schemes > national
- Import / export considerations

What does this mean for Auditors

- With some of the critical shifts – ability to manage environmental outcomes is made more challenging
- Policies and regulations to manage environmental issues are even more important and implementation is key
- Need for criteria with which to assess performance in terms of environmental quality but also enablers such as Finance and not to measure ‘activity’ but to measure ‘impact’.
- Opportunity to establish short term objectives (agility) – to meet long term targets
- Opportunity to embrace the tech avalanche and AI with enhancements in data, analytics and intelligence - can improve performance and assessment

Thank you!

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