

## PRESS RELEASE:

### **Heat surges risk ecosystem collapse and threaten an unborn generation, 10 new climate insights reveals**

Geneva, Stockholm, October 28th, 2024 – Surging global temperatures that are making our planet increasingly uninhabitable are disrupting our oceans' vital planetary processes, pushing the Amazon to the brink of large-scale collapse, and threatening an unborn generation by heightening chances of pregnancy complications and even loss.

Launched today by a consortium of globally renowned social, natural and climate scientists, the annual synthesis report '10 New Insights In Climate Science' unveils the overwhelming impacts of climate change that risk reversing decades of progress on maternal and reproductive health, contributing to more extreme and costly El Niño effects, and jeopardising one of our most vital natural carbon sinks, along with seven other key climate insights.

The report spans a vast range of climate research and is designed to equip policymakers with the latest and most pivotal climate research published over the past 18 months. The climate science is synthesised to highlight the policy implications that can inform negotiations at COP29 and policy through 2025 and beyond.

*"This report confirms that the world faces planetary scale challenges, from the rise of methane emissions to the vulnerability of critical infrastructure. It shows that rising heat, ocean instability and a tipping of the Amazon Rainforest could push parts of our planet beyond habitable limits. Yet, it also provides clear pathways and solutions, demonstrating that with urgent, decisive action, we still can avoid unmanageable outcomes,"* **said Prof. Johan Rockström, co-chair of The Earth League.**

Ahead of COP29, scientists are once again supporting policymakers and leaders with scientific insights that have clear policy implications for developing comprehensive mitigation and adaptation strategies. The report urges policymakers at COP29 to reflect on these insights in updating the submissions of their Nationally Determined Contributions (NDCs) (due in early 2025), and drive attention to them within negotiations, including on the pivotal issues of climate finance.

*"Global temperature records continue to break, pushing the Paris Agreement's goals further out of reach and exacerbating threats to maternal health. This is particularly acute in climate-vulnerable nations as it's compounded with limited access to education and low incomes, in addition to the breakdown of critical infrastructure which further compromises food security, sanitation and healthcare services. Preparedness for heat extremes, including early warning systems, must be a priority at the national and regional scale. Without action, the consequences could be catastrophic. Without systemic shifts, future generations will be impacted,"* **said Prof. Dr Jemilah Mahmood, executive director of the Sunway Centre for Planetary Health.**

The report also spotlights two major challenges to the natural world. Ocean warming persists and sea surface temperature records continue to be broken leading to El Niño events that

are far more severe than previously understood. According to the report, the projected additional global economic losses due to increases in El Niño frequency and intensity resulting from global warming could be almost \$100 trillion over the 21st century.

Furthermore, concerns are mounting that the Amazon nears critical thresholds, with deforestation, forest degradation and climate change shifting parts of the forest from carbon sinks to carbon sources. Urgent action is needed to preserve its resilience by safeguarding its ecological and cultural diversity.

The report highlights that, although there is an urgent need for ambitious policies that drive significant emissions reductions, these must be perceived as fair by the citizens for them to be accepted and, hence, effective. Climate policies perceived as unfair can give rise to entrenched resistance, limiting the success of policies and in some cases contributing to civil unrest.

*“Ignoring citizens’ readiness and needs when designing and implementing climate policies will ultimately lead to many missed opportunities in the near term through undermined and ineffective climate policy. According to the IPCC, [40% of the world are already highly vulnerable to the ever-rising global temperatures](#). Policymaking in every country must be inclusive and carefully navigate a variety of socio-economic factors, to enhance policy acceptability,” said Prof. Joyashree Roy at the Asian Institute of Technology.*

The ‘10 New Insights in Climate Science’ series, launched with the UNFCCC at the COPs since 2017, is a collaborative initiative of Future Earth, the Earth League and the World Climate Research Programme, synthesising the key recent developments in climate change research. This year’s report represents the collective efforts of more than 80 leading researchers from 45 countries.

**ENDS**

Full list of insights:

1. **Tackling rising methane levels.** *Methane levels have surged since 2006. We know the science, cost-effective solutions exist. Now, enforceable policies must be put in place to drive reductions across fossil fuel and waste sectors, as well as agriculture.*
2. **The climate implications of reduced air pollution.** *Reduced air pollution has improved public health significantly, but the impacts of reduced aerosols interact with the climate in a more complex way. Mitigation and adaptation strategies must not ignore this.*
3. **Increasing heat is making more of the planet uninhabitable.** *Rising temperatures and humidity levels are pushing people beyond the confines of habitable climatic conditions. Heat action plans must address this and prioritise the most vulnerable groups.*
4. **Climate extremes are harming maternal and reproductive well-being.** *Climate extremes are jeopardising pregnant women and unborn children and in turn, threatening decades of progress on maternal and reproductive health. Effective intervention must also integrate efforts to advance gender equity and climate justice.*

5. **The devastating global impacts of ocean changes.** *New research highlights the risk of more extreme and costly El Niño events under climate change, and even the threat to the stability of the Atlantic Meridional Overturning Circulation (AMOC).*
6. **Biocultural diversity can bolster the Amazon's resilience against climate change.** *While regional and local actions can strengthen the forest's resilience to climate change, these efforts will be insufficient if they are not coupled with rapid emissions reductions globally.*
7. **The vulnerability of critical infrastructure.** *Critical infrastructure is becoming increasingly vulnerable to more frequent and intense climate hazards. Artificial Intelligence (AI) tools can enhance its resilience against climate change.*
8. **The challenges for climate-resilient development in cities.** *Very few cities have integrated mitigation and adaptation strategies in their climate action plans. A social-ecological-technological systems (SETS) approach can help guide climate-resilient development.*
9. **Governance gap and competition for energy transition minerals.** *As demand for energy transition minerals (ETMs) grows, so do supply chain risks, geopolitical tensions, and socio-environmental impacts in the Global South. Closing governance gaps in the ETM global value chain is necessary to ensure a just and equitable energy transition.*
10. **Fairness, acceptance and resistance of climate policies.** *Perceptions of fairness are a key determinant for public acceptance of climate policies, whilst ignoring citizens' concerns can fuel resistance. Participatory decision-making and clearly communicated revenue-use plans can help increase acceptance of climate policies.*

## **NOTES TO EDITOR:**

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### **Spokespeople**

- Prof. Johan Rockström, Director, Potsdam Institute of Climate Impact Research
- Peter Schlosser, co-chair of The Earth League
- **Reproductive health expert:** Adelaide Lusambili, Associate Professor, Environmental Health and Governance, Africa International University
- **Policy fairness expert:** Ana Maria Vargas Falla, Senior Lecturer, Department of Sociology of Law, Lund University, Sweden

We have spokespeople for all the insights upon request.

### **Additional quotes:**

*"The urgency to respond to climate change has never been clearer. Every degree of warming, every delay in action, accelerates the transition from climate crisis to climate catastrophe. We have to translate our existing knowledge to action much faster to preserve*

*Earth's life-supporting systems and bring humanity back to a state where it is in balance with the Earth system on which it depends."* **Peter Schlosser, vice president and vice provost of Global Futures, Arizona State University, and co-chair of The Earth League**

*"Our oceans are hotter than ever now, leading to disruptions in global weather patterns and marine ecosystems. We're witnessing increasingly severe storms and widespread coral bleaching. This year's report provides crucial scientific insights to underpin commitments by world leaders at COP29 to significantly step up their ambition. It's only by reducing greenhouse gas emissions that we can reduce further risks and costs to societies and ecosystems."* **Wendy Broadgate, Global Hub Director at Future Earth.**

**About Future Earth:** Future Earth is a global network of researchers developing and synthesising knowledge to support transformations towards sustainability. With a strong focus on systems-based approaches, Future Earth seeks to deepen our understanding of complex Earth systems and human dynamics across different disciplines and leverage this understanding to underpin evidence-based policies and strategies for sustainable development. Learn more at [futureearth.org](https://futureearth.org).

**About The Earth League:** The Earth League is an international alliance of institutional and individual members, who work together to respond to issues such as climate change, depletion of natural resources, land degradation, water scarcity, and food security. While addressing existing and emerging problems created by resource use beyond our planet's capacity, the Earth League explores how problems can be anticipated and avoided through strategic action and innovation. Learn more at [the-earth-league.org](https://the-earth-league.org).

**About the World Climate Research Programme (WCRP):** WCRP coordinates and guides international climate research to develop, share, and apply climate knowledge that contributes to societal well-being. WCRP addresses aspects of climate science that are too large and too complex to be tackled by a single nation, agency, or scientific discipline. Through international science coordination and successful partnerships, WCRP helps lead the way in understanding the fundamentals of the climate system and in determining its interactions with human activities. Learn more at [wcrp-climate.org](https://wcrp-climate.org).

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