Researchers argue that fostering global cooperation is critical to safeguard critical Earth system functions

January 23 2024

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Tipping elements of the Earth system should be considered global commons, researchers argue in a new paper published in *Proceedings of*

the National Academy of Sciences (*PNAS*).

Global commons cannot—as they currently do—only include the parts of the planet outside of national borders, like the high seas or Antarctica. They must also include all the environmental systems that regulate the functioning and state of the planet, namely all systems on Earth we all depend on, irrespective of where in the world we live. This calls for a new level of transnational cooperation, leading experts in legal, social and Earth system sciences say. To limit risks for human societies and secure critical Earth system functions they propose a new framework of planetary commons to guide governance of the planet.

"Stability and wealth of nations and our civilization depends on the stability of critical Earth system functions that operate beyond national borders. At the same time, human activities push harder and harder on the planetary boundaries of these pivotal systems. From the Amazon rainforest to the Greenland ice masses, there are rising risks of triggering irreversible and unmanageable shifts in Earth system functioning," explains Johan Rockström, Director of the Potsdam Institute for Climate Impact Research (PIK) and Professor of Earth System Science at University of Potsdam.

"As these shifts affect people across the globe, we argue that tipping elements should be considered as planetary commons the world is entrusted with, and consequently in need of collective governance."

The publication is the result of an almost two-year-long research process involving 22 leading international researchers. Legal, political and Earth system scientists make their case by building on the well-known idea of the global commons, but significantly expanding it to design more effective legal responses to better govern biophysical systems that regulate planetary resilience beyond and across national boundaries, such as natural carbon sinks and the major forest systems.

"We believe the planetary commons have the potential to articulate and create effective stewardship obligations for nation states worldwide through Earth system governance aimed at restoring and strengthening planetary resilience and promoting justice. However, since these commons are often located within sovereign territories, such stewardship obligations must also meet some clear justice criteria," social scientist and author Joyeeta Gupta says.

A planetary shift towards collective global scale solutions transcending national boundaries

Global commons or global public goods like the high seas and deep seabed, outer space, Antarctica and the atmosphere are shared by all states. They lie outside of jurisdictional boundaries and thus sovereign entitlements. All states and people have a collective interest, especially when it comes to resource extraction, that they be protected and governed effectively for the collective good.

The planetary commons expands the idea of the global commons by adding not only globally shared geographic regions to the global commons framework, but also critical biophysical systems that regulate the resilience and state, and therefore livability, on Earth. The consequences of such a "planetary shift" in global commons governance are potentially profound, the authors argue. Safeguarding these critical Earth system regulatory functions is a challenge at a unique planetary scale of governance, characterized by the need for collective global scale solutions that transcend national boundaries.

"Earth's critical regulatory systems are now being put under pressure by human activities at unprecedented levels," says author of the paper Louis Kotzé, Professor of Law at North-West University in South Africa and the University of Lincoln, UK; and researcher at the Research Institute

for Sustainability Helmholtz Centre Potsdam.

"Our existing global environmental law and governance framework is unable to address the planetary crisis and keep us from crossing planetary boundaries. This is why we urgently need planetary commons as a new law and governance approach that can safeguard critical Earth system regulating functions more effectively."

More information: Johan Rockström et al, The planetary commons: A new paradigm for safeguarding Earth-regulating systems in the Anthropocene, *Proceedings of the National Academy of Sciences* (2024). DOI: 10.1073/pnas.2301531121

Provided by Potsdam Institute for Climate Impact Research