

# “An invaluable contribution to our planet’s welfare”: Johan Rockström awarded Tyler Prize for Environmental Achievement

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02/29/2024 - Johan Rockström will be awarded with the 2024 Tyler Prize for Environmental Achievement, a prestigious prize for scientific achievements often regarded as the 'Nobel Prize for Environment'. The scientific Director of the Potsdam Institute for Climate Impact Research PIK receives the honor for his pioneering work on the Planetary Boundaries framework, the science defining the safe operating space for humanity on Earth, which provides the boundaries for world development and a basis for human justice.



Johan Rockström. Credit: Jadranko Marjanovic

“Professor Rockström’s work embodies the spirit of the Tyler Prize,” says Tyler Prize Chair Julia Marton-Lefèvre. “He has elucidated the essential environmental limits within which humanity must operate to ensure a sustainable future” while “his scientific achievements, coupled with his ability to influence policy and

engage with the public, have made an invaluable contribution to our planet's welfare." The Tyler Prize Executive Committee awards the USD \$250,000 Prize to Rockström for his "science-based approach to sustainable development for people on a stable and resilient planet", emphasizing the need for a holistic, interdisciplinary approach to the mounting environmental crises.

Ottmar Edenhofer, scientific Director at the Potsdam Institute of Climate Impact Research (PIK), adds: "I'm very glad that Johan Rockström receives this outstanding award as an acknowledgement for his important work on planetary boundaries. The Planetary Boundaries, together with the concept of Global Commons, complement each other and combine risk research and solutions research, from the local to the global scale. Together, they build the conceptual framework of our scientific research work at the Potsdam Institute."

### **A safe operating space for humanity within Planetary Boundaries**

Johan Rockström is one of the most-cited researchers in the world. First published in 2009, his Planetary Boundaries framework determines the limits in which humanity can safely operate within the natural world, integrating the nine systems that determine the functioning and the state of the planet. They provide life-support to humans, and include systems we all rely upon, such as clean water, a stable climate, and vibrant biodiversity. This framework has helped shape public response to climate change and sustainable development, including the United Nations' Sustainable Development Goals.

Humanity is "well outside of the safe operating space" on six of the nine Planetary Boundaries, according to the latest update on the Planetary Boundaries, published September 2023 in *Science Advances*. "As a matter of urgency, we must recognize and act upon the vast scientific evidence that patient Earth is unwell as human pressures on the planet continue to rise, breaching Planetary Boundaries. We are at risk of destabilizing the entire planet", states Rockström. "Transgressing too many Planetary Boundaries could risk reaching tipping points that will undermine the Earth's life-support systems."

Rockström's ability to communicate complex science in an easy-to-grasp, accessible way has made him a well-respected public figure. He has co-authored books like "Breaking Boundaries: The Science of Our Planet", which became a Netflix documentary narrated by Sir David Attenborough, and has appeared alongside Leonardo DiCaprio in the documentary "Before the Flood". Several of his online talks have gone viral with millions of views and helped shape public discourse on environmental stewardship.

Rockström also recognizes his close collaborator, Will Steffen, Australian professor in Earth system science, who passed away in 2023. "It was really a joint and very close collaborative effort", says Rockström of the Planetary Boundaries framework. "It was Will Steffen and myself who advanced the original theory and methods of defining and quantifying Planetary Boundaries." The Planetary Boundaries science is an international collaboration across multiple Earth system science disciplines. "It is impossible for me to thank all the colleagues contributing to advancing the Planetary Boundaries science over the last 15 years, but I would in particular like to mention Katherine Richardson, professor in Oceanography at University of

Copenhagen, who led the 2023 science update, all my colleagues at the Potsdam Institute for Climate Impact Research (PIK) and at the Stockholm Resilience Centre (SRC) at Stockholm University. Without them we would not have had the insights we have today, of the necessity to keep our social and economic development within the safe operating space on Earth", he concludes.

Established in 1973, the Tyler Prize for Environmental Achievement recognizes global leaders in environment and sustainability. Past winners include Jane Goodall, Michael Mann, Daniel Pauly, and Gretchen Daily, among others. Johan Rockström will receive the Tyler Prize for Environmental Achievement at a ceremony in Potsdam, Germany, on May 17 2024.

### **More info about the Tyler Prize:**

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<https://tylerprize.org/>

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