

Policymakers must recognize global economic risks posed by ecosystem 'tipping points,' says report

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The collapse of key ecosystems would severely harm the global economy, researchers have warned. Researchers from UCL's Institute for Innovation and Public Purpose (IIPP) and the Global Systems Institute at the University of Exeter reviewed the likely impacts of

"ecosystem tipping points" such as the dieback of the Amazon rainforest, tropical peatland collapse and widespread die-off of coral reefs.

Their [report](#) says such events can "reverberate globally," with effects including reduced food and [energy security](#), and damage to buildings, croplands and infrastructure—with [financial costs](#) for households, businesses and governments.

Ecosystem tipping points are not well represented in [economic models](#) that aim to quantify the risks of environmental change, meaning financial risks are significantly underestimated and new approaches are needed, the report says.

"Stable natural ecosystems underpin all economic activity," said Lydia Marsden, from UCL's Institute for Innovation and Public Purpose.

"Pressures on nature from human activity—such as pollution, deforestation and [climate change](#)—are increasing the risk of ecosystem tipping points: irreversible changes that can occur rapidly and on a large scale.

"Such tipping points would compromise the many vital services provided by these ecosystems to the economy.

"For example, a partial collapse of the Amazon rainforest would reverberate across rainfall patterns globally, affecting sectors from hydropower to agriculture to global shipping, in fundamentally unpredictable and irreversible ways.

"Preventing these changes from happening should be of utmost importance to any policymaker tasked with preserving economic and financial stability."

Jesse Abrams, from Exeter's Global Systems Institute, said, "Policymakers need to prioritize these ecosystems when assessing nature-related risks.

"Currently, the risks are underestimated, and action to prevent them isn't happening on the necessary scale.

"Policymakers should consider a wider range of economic models that can better represent the impacts of crossing tipping points, such as the fact key ecosystems cannot be replaced, and the role of shorter-term, high-magnitude shocks.

"Ultimately, a much more interventionist approach that prioritizes eliminating the negative pressures on these critical ecosystems is needed."

The report argues for a "precautionary approach" to prevent ecosystem tipping points and thereby protect the [global economy](#), which will require much more than better modeling.

Policymakers, including [central banks](#) and ministries of finance, should coordinate to intervene where economic activity—and associated financial flows—are implicated in pressures on ecosystems.

More information: Ecosystem tipping points: Understanding the risks to the economy and the financial system. www.ucl.ac.uk/bartlett/public-...ystem-tipping-points

Provided by University of Exeter

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