

## Climate and economic risks 'threaten 2008-style systemic collapse'

Environmental and social problems could interact in global breakdown, report says

The gathering storm of human-caused threats to climate, nature and economy pose a danger of systemic collapse comparable to the 2008 financial crisis, according to a new report that calls for urgent and radical reform to protect political and social systems.

The study says the combination of global warming, soil infertility, pollinator loss, chemical leaching and ocean acidification is creating a "new domain of risk", which is hugely underestimated by policymakers even though it may pose the greatest threat in human history.

"A new, highly complex and destabilised 'domain of risk' is emerging - which includes the risk of the collapse of key social and economic systems, at local and potentially even global levels," warns the paper from the Institute for Public Policy Research. "This new risk domain affects virtually all areas of policy and politics, and it is doubtful that societies around the world are adequately prepared to manage this risk."

Until recently, most studies of environmental risk tended to examine threats in isolation: climate scientists examined disruption to weather systems, biologists focused on ecosystem loss and economists calculated potential damages from intensifying storms and droughts. But a growing body of research is assessing how the interplay of these factors can create a cascade of tipping points in human society as well as the natural world.

The new paper - This is a Crisis: Facing up to the Age of Environmental Breakdown - is a meta-study of dozens of academic papers, government documents and NGO reports compiled by IPPR, a leftwing thinktank that is considered an influence on Labour policy.

The authors examine how the deterioration of natural infrastructure, such as a stable climate and fertile land, have a knock-on effect on health, wealth, inequality and migration, which in turn heightens the possibility of political tension and conflict.

The paper stresses the human impacts go beyond climate change and are occurring at speeds unprecedented in recorded history.

Evidence on the deterioration of natural systems is presented with a series of grim global statistics: since 2005, the number of floods has increased by a factor of 15, extreme temperature events by a factor of 20, and wildfires sevenfold; topsoil is now being lost 10 to 40 times faster than it is being replenished by natural processes; the 20 warmest years since records began in 1850 have been in the past 22 years; vertebrate populations have fallen by an average of 60 per cent since the 1970s, and insect numbers - vital for pollination - have declined even faster in some countries.

These processes amplify and interact with existing social and economic problems, potentially threatening systemic collapse similar to the 2008-9 financial crisis. Back then, a subprime mortgage crisis in the US exposed excessive risk-taking and triggered a global panic and the deepest recession since the 1930s. The IPPR study envisages a similar breakdown could occur if the US suffers relentlessly worsening damage from hurricane floods and forest fires, which would prompt a rush of insurance claims and threaten the viability of financial institutions.

"In the extreme, environmental breakdown could trigger catastrophic breakdown of human systems, driving a rapid process of 'runaway collapse' in which economic, social and political shocks cascade through the globally linked system - in much the same way as occurred in the wake of the global financial crisis of 2007-08," the paper warns.

There are other potential cascades. The paper warns of the vulnerability of food systems that rely on just five animal and 12 plant species to provide 75 per cent of the world's nutrition. The lack of diversity weakens resilience to the growing risks of climate disruption, soil deterioration, pollution and pollinator loss. Previous research - cited by the IPPR - estimates a one-in-20 chance per decade of a simultaneous failure of maize production in the US and China, which provide 60 per cent of the global supply.

Migration is also likely to increase as a result of longer droughts and more extreme heat, particularly in the Middle East and central and northern Africa.

Laurie Laybourn-Langton, the lead author of the report, said the climate crisis was likely to create 10 times more refugees from that region than the 12 million who left during the Arab spring.

"There would be repercussions in Europe. Rightwing groups use the fear of migration, as we saw during the EU referendum in Britain," he said. "What is that going to look like when far more people are forced from homes due to environmental shocks? What does that mean for political cohesion."

Several other recent interdisciplinary studies have highlighted the dangers of mutually reinforcing impacts. In December, the authors of a paper published in Science warned the risks were far greater than assumed because 45 per cent of tipping points were interrelated and could amplify one another. Last August, scientists warn these domino effects could push the Earth into an almost uninhabitable "hothouse state".

Studies of financial and social tipping points are scarcer, but concern is growing. Last month, the top three global risks identified by the World Economic Forum were extreme weather, climate policy failure and natural disasters. Water shortages, accelerating biodiversity loss and large-scale involuntary migration also ranked in the top 10.

"Of all risks, it is in relation to the environment that the world is most clearly sleepwalking into catastrophe," its annual risk report warns. "The results of climate inaction are becoming increasingly clear. The accelerating pace of biodiversity loss is a particular concern."

The IPPR report, which launches a wider 18-month project on this topic, urges policymakers to grapple with these risks as a priority, to accelerate the restoration of natural systems, and to push harder on the "green new deal" transition towards renewable energy. In particular, it says, "the younger generations will need help in finding the energy and a sense of control that often eludes them as they begin to realise the enormity of inheriting a rapidly destabilising world".

Wider discussion is the first step, according to Laybourn-Langton, who said he was shocked by the paucity of public debate relative to the scale of the problems.

"People are not frank enough about this. If it is discussed at all, it is the sort of thing mentioned at the end of a conversation, that makes everyone look at the floor, but we don't have time for that now," he said. "It's appearing more in media, but we are not doing enough."

This article first appeared at the Guardian

BusinessGreen is part of the Guardian Environment Network