

Man-made crises 'outrunning our ability to deal with them,' scientists warn

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The world faces a compounding series of crises driven by human activity, which existing governments and institutions are increasingly powerless to cope with, a group of eminent environmental scientists and economists has warned.

In today's issue of the leading international journal *Science*, the researchers say that nations alone are unable to resolve the sorts of planet-wide challenges now arising.

Pointing to global action on [ozone depletion](#) (the Montreal Protocol), high seas fisheries and antibiotic [drug resistance](#) as examples, they call for a new order of cooperative international institutions capable of dealing with issues like climate change - and enforcing compliance where necessary.

"Energy, food and water crises, climate disruption, declining fisheries, ocean acidification, emerging diseases and increasing [antibiotic resistance](#) are examples of serious, intertwined global-scale challenges spawned by the accelerating scale of human activity," say the researchers, who come from Australia, Sweden, the United States, India, Greece and The Netherlands.

"These issues are outpacing the development of institutions to deal with them and their many interactive effects. The core of the problem is inducing cooperation in situations where individuals and nations will collectively gain if all cooperate, but each faces the temptation to free-ride on the cooperation of others."

There are few institutional structures to achieve co-operation globally on the sort of scales now essential to avoid very serious consequences, warns lead author Dr Brian Walker of Australia's CSIRO.

While there are signs of emerging global action on issues such as climate change, there is

widespread inaction on others, such as the destruction of the world's forests to grow biofuels or the emergence of [pandemic flu](#) through lack of appropriate animal husbandry protocols where people, pigs and birds co-mingle.

"Knowing what to do is not enough," says Dr Walker. "Institutional reforms are needed to bring about changes in human behaviour, to increase local appreciation of shared global concerns and to correct the sort of failures of collective action that cause global-scale problems."

"We are not advocating that countries give up their sovereignty," adds co-author Professor Terry Hughes, Director of the ARC Centre of Excellence in Coral Reef Studies at James Cook University.

"We are instead proposing a much stronger focus on regional and worldwide cooperation, helped by better-designed multi-national institutions. The threat of climate change to coral reefs, for example, has to be tackled at a global scale. Local and national efforts are already failing."

The scientists acknowledge that the main challenge is getting countries to agree to take part in global institutions designed to prevent destructive human practices. "Plainly, agreements must be designed such that countries are better off participating than not participating," they say.

This would involve all countries in drawing up standards designed to protect the earth's resources and systems, to which they would then feel obligated to adhere.

However they also concede that the 'major powers' must be prepared to enforce such standards and take action against back-sliders.

"The major powers must be willing to enforce an agreement - but legitimacy will depend on acceptance by numerous and diverse countries,

and non-governmental actors such as civil society and business," they add.

"To address common threats and harness common opportunities, we need greater interaction amongst existing institutions, and new institutions, to help construct and maintain a global-scale social contract," the scientists conclude.

More information: Walker, B., S. Polasky, V. Galaz, C. Folke, G. Engstrom, F. Ackerman, K. Arrow, S. Carpenter, K. Chopra, G. Daily, P. Erlich, T. Hughes, N. Kautsky, S. Levon, K. Maler, J. Shogren, J. Vincent, T. Xepapadeas, A. de Zeeuw. Looming Global Scale Failures and Missing Institutions. *Science* 325 (5946): 1345-1346.

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