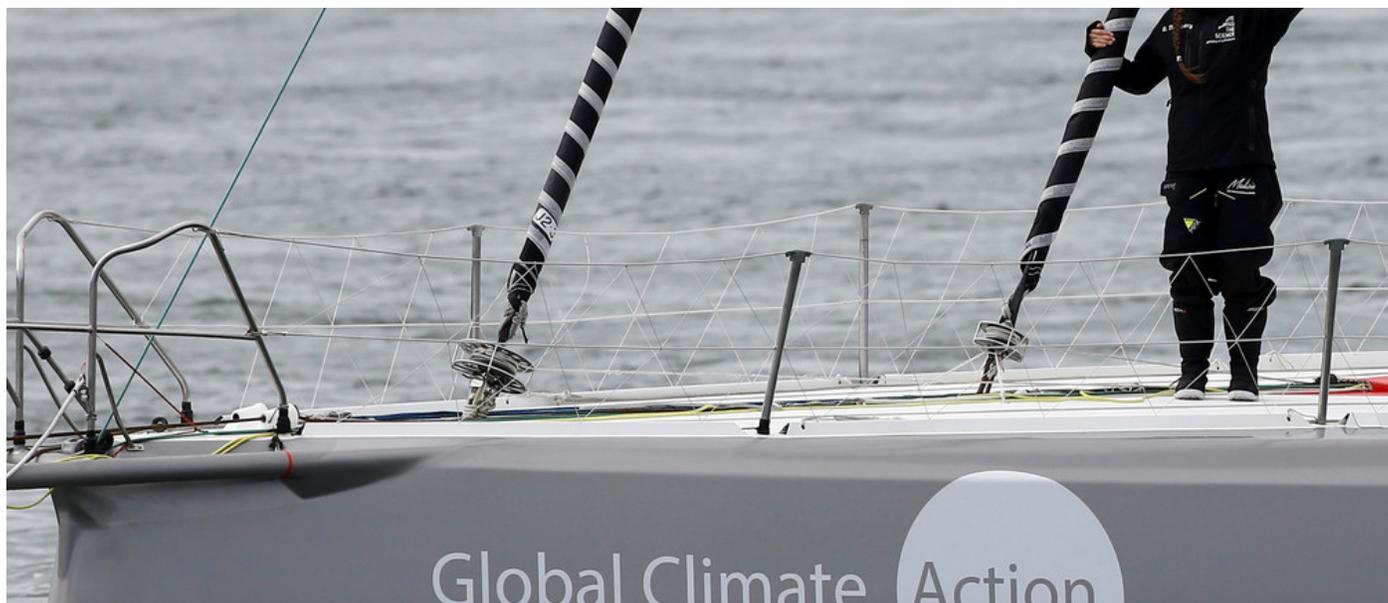


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## Economics can no longer ignore the earth's natural boundaries



policymakers, academics, and activists prepare for next month's United Nations climate summit in New York

Image: REUTERS/Henry Nicholls

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The Swedish climate truthsayer Greta Thunberg has [set sail](#) for the United States in a zero-emissions racing yacht to generate waves in a different part of the world – including at next month's [United Nations Climate Action Summit](#) in New York. She will arrive in America at a time of growing transatlantic awareness of the threat posed by climate change. But whether shifts in public opinion will translate into concrete action remains to be seen.

By treating inequality exclusively as a microeconomic issue, economists have been missing the point for decades. There is ample evidence to show that income disparities within countries have more to do with global financial forces than with local labor-market conditions.

Taking sustainability seriously means that we can no longer ignore our planetary boundaries. We need to start designing tools and policies to make all aspects of society more sustainable, before the costs of doing so become so large as to impoverish us. This has increasingly become a task not just for academics who specialize in the field, but for scholars and researchers generally. Sustainability should now be the lens through which we approach all policy-related empirical questions. We need challenge-driven, mission-oriented research, and that calls for a broad multidisciplinary effort.

To that end, Michael Grubb of the University of Cambridge, along with two co-authors, made a monumental contribution with his 2014 book [Planetary Economics: Energy, Climate Change, and the Three Domains of Sustainable Development](#). Grubb marshals a broad range of tools from within the economics discipline to chart the way to a sustainable society. That framework will need to be broadened beyond economics, but it provides a useful starting point.

The “three domains” in the book’s subtitle concern human behavior, and how it can be influenced through regulation, traditional market-based pricing, and innovation. Transforming a system requires action in all three areas. For example, better regulation can change human behavior in a way that reduces prices and spurs innovation, in turn yielding even better regulation and lower costs.

Unfortunately, these three traditional domains within economics have each evolved separately, developing their own languages, evidence, policy recommendations, professional societies, and journals. The goal of a “planetary economics” is to integrate the domains within a single community, whose sole objective is to build a civilization that can exist within Earth’s boundaries.

This is already happening on the margins. Evolutionary and institutional economists are talking to organizational and behavioral economists about how individual social and economic choices make up complex systems over time. Complexity economists like W. Brian Arthur have been studying such questions for decades. And, in parallel, “Solow Residual” economists have drawn on all three domains to make sense of unexplained factors in economic growth.

But this multidisciplinary intermingling is not happening nearly fast enough. What we need is a new field of planetary social science to unite different perspectives, conceptual frameworks, and analytical tools – from political science, sociology, anthropology, and psychology. Just as we cannot ignore the climate science, nor can we ignore the geopolitical and security challenges that will confront a warming planet.

Beyond the participation of individual consumers, private corporations, and civil society, building a sustainable global economy will require active state intervention. Governments urgently must adjust regulatory frameworks, reset market incentives, and expand the hard and soft infrastructure needed for innovation to thrive. Moreover, policymakers should be prepared to take calculated risks, and to recalibrate policies based on feedback.

The sub-discipline that has perhaps come closest to integrating other disciplines, including medicine and environmental science, is public health. In [Survival: One Health, One Planet, One Future](#), George R. Lueddeke, the chair of the One Health Education Task Force, shows how public health can be incorporated into a wide range of fields to address individual, population, and ecosystem health.

Another crucial area, of course, is education. In 2015, the international community adopted the UN's [2030 Agenda](#) and the 17 Sustainable Development Goals, one of which (SDG 4) regards high-quality universal education as a key to building “peaceful, just, and inclusive societies.” Yet progress toward this goal, particularly in developing countries, is being hampered by inequality, poverty, financial shortfalls, extremism, and armed conflict.

In advanced economies, education systems need to prepare students for a world that is undergoing fundamental social, economic, and technological change. Young people today will need the skills not just to cope with the ongoing transformation, but to lead it. That means education policy, too, must become challenge-driven. In practical terms, every university should consider creating a compulsory course on systems thinking and cross-disciplinary approaches.

Meanwhile, public- and private-sector organizations around the world are being asked to integrate the SDGs into their daily operations. In *Survival*, 17 organizations, ranging from the US Centers for Disease Control and Prevention to the World Wildlife Fund, tell Lueddeke how they are adopting a more multidisciplinary approach. But, in general, it is clear that many – if not most – countries have yet to consider the costs of implementing the SDGs fully. Without their active participation, success is unlikely.

In fact, most national finance ministries have not fully bought into the 2030 Agenda. In advocating sustainability, we must not create new vulnerabilities in the form of over-indebtedness. Recent experience shows that financial crises can rapidly undermine economic and political achievements, sometimes reversing decades of development or jeopardizing future economic growth and stability.

As Greta Thunberg steps onto new shores, those in power should consider their responsibility to all generations. We urgently need to create the conditions for the emergence of a planetary social science that can inform our policy decisions. Ultimately, the planet will carry on. But whether

humanity survives will depend on the leadership shown today, and on the systems of governance and scholarship that we build for the future. There is nothing like the prospect of extinction to focus the mind.

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