

Science-Based Targets

ISSUE Economic growth has brought billions out of poverty and improved the well-being of many more. While these are important results and admirable goals, our current paths toward economic growth have come at a cost. All fundamental parts of the Earth system that support this growth are now under pressure and at risk of collapse.

The good news is we have seen the first serious attempt to reset the goals of the system—the Sustainable Development Goals. These 17 universal goals form the first global roadmap to end poverty and hunger, ensure sustainable water access for all, fight inequalities, tackle climate change, and more.

To help reach and support these goals, businesses and policy makers need science to identify clear targets for maintaining Earth's life-support systems, the global commons. In 2009, Johan Rockstrom and his colleagues published the planetary boundaries framework identifying nine critical Earth system processes. In 2015, they proposed that industrialized societies had pushed Earth beyond four of the boundaries—relating to climate, biodiversity, land use, and fertilizer use. For climate, the Paris Agreement provides a global science-based target for industry, societies, and indeed all humanity. Unfortunately, many other dimensions of the Earth system lack overall science-based targets or have targets set to expire in 2020. These are no less critical to our survival and well-being, and as a result, the delivery of the UN 2030 Agenda is at risk.

In October, 2016, the GEF and IUCN convened The International Dialogue on Our Global Commons to

engage leading environment, innovation and system design thinkers and analysts from across sectors of society in an unprecedented strategic discussion to assess the latest evidence as to the pressures our global commons face, and discuss how best to transform the systems that drive these pressures. The need for science-based targets emerged from the conferences as a fundamental need, and GEF is continuing to support efforts to develop those targets.

SOLUTION

The climate change 2°C model is worthy of both emulation and improvement when applied to other environmental dimensions. The climate target adopted in the Paris Agreement, while grounded firmly in science, also represents a compromise among many diverse governments, industries, and institutions. As such it inevitably falls short of what many consider an ideal goal. Significant uncertainties remain. Yet it has already proven to be a vital tool for communicating the urgency of action on climate change, as it is substantive yet both simple to grasp and politically feasible. Many businesses, local governments, and other actors have now adopted climate goals that translate the overall target into specific targets that work for them.

The challenge is to assess and quantify biophysical dimensions for a stable Earth system and to formulate them into actionable targets for a multitude of actors, both public and private. These targets would be equivalent to the Paris climate change target but for other essential dimensions of the Earth system, such as biodiversity, land degradation, nitrogen and phosphorous, among others. With the science in hand, decision makers could create policies and the world could coordinate its plans of action to meet the agreed-upon targets.

LOOKING AHEAD

The adoption of science-based targets will play a key role for protecting the Global Commons. The fact that many major corporations have integrated the climate target into their activities demonstrates how science-based targets for a range of environmental issues could actively tap the potential of the private sector. The GEF has set out to increase public and political discussion on the state of the global commons—and on what can be done to improve it.

The international scientific community has been analyzing these Earth system processes for decades. The next step is to use that knowledge to develop

science-based targets that any nation, city, or company can use to guide its actions. Without such targets we risk compromising the ambitious vision of the SDGs. And, perhaps more importantly, without them we may unwittingly cross into an unsafe operating space for humanity. In particular, the roundtable emphasized the urgent need for a post-2020 biodiversity mission and vision that are aligned with science-based targets.

Science can be a slow process. Revolutions are rare, and potentially-breakthrough ideas can languish in academia rather than crossing over to effective practice and policy. Frustration with science and scientists is almost inevitable, given the urgency and scale of transformation required. But progress is already evident, and developing clear, science-based targets to guide future action will be a key to building on that progress.

As the world embarks on the 4th industrial revolution—a suite of technological transformations ranging from artificial intelligence, to robotics, molecular biology, and nanotechnology—there will be real opportunities to make the wholesale and transformative changes necessary to stay within a safe operating space on Earth. Science-based targets can channel this innovation toward common objectives that just might save the planet and the life it supports.

