

# Foreword

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Human activities are putting pressures on Planet Earth on such a scale that there could be abrupt global environmental change.

Scientists have proposed a new approach to global sustainability by identifying and defining “planetary boundaries” within which humanity can operate safely. Nine planetary boundaries have been identified: climate change; ocean acidification; stratospheric ozone; biogeochemical nitrogen cycle and phosphorus cycle; global freshwater use; land system change; loss of biological diversity; chemical pollution; and atmospheric aerosol loading. The scientists observed that humanity has probably already transgressed three of these planetary boundaries: climate change, biodiversity loss, and changes to the global nitrogen cycle.<sup>1</sup>

Moreover, the scientists noted that these systems are interdependent in the sense that Planet Earth’s various systems function as a whole. They put forward the hypothesis that transgressing one or more planetary boundaries may tip Planet Earth into a state which could trigger non-linear, abrupt environmental change within continental-to planetary-scale systems. Moreover, because of the interdependence of these systems, transgressing one may shift the position of, or result in transgressing, other boundaries. The scientists emphasized that changes to Planet Earth’s functioning system do not mean that the planet will not survive – it will, but in another state, but humans are the ones who will be affected. The social impact of transgressing planetary boundaries will depend on the social-ecological resilience of the affected societies.<sup>2</sup>

Humans are thus part of a complex web of relationships involving Planet Earth, without which we cannot exist. It is simply not possible to maintain human well-being within degraded ecosystems.

While there are large uncertainties and knowledge gaps that still need to be filled, the concept of there being planetary boundaries lays the

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<sup>1</sup> Rockstrom, J. et al., “A Safe Operating Space for Humanity”, *Nature*, Volume 461, 2009, pages 472–5.

<sup>2</sup> *Ibid.*

groundwork for society to think about a new approach to governance and management of Planet Earth to ensure a safe space for human development. A new approach to avert the environmental crises humans have created requires change on many fronts throughout the world. We need to transform not only our economic and political systems, but also our legal and financial systems.

Cormac Cullinan, the author of *Wild Law*, argues that the law must protect and enforce the rights of Nature as well as those of humans. To date, environmental laws have failed to stop environmental destruction. Cullinan believes today's laws do not work because they were never intended to serve the environment. Our laws are designed to regulate the manner and rate of exploitation of natural resources and not to enforce limitations on human behaviour in the interests of preserving the ecological balance of Planet Earth. He argues, therefore, that recognizing that Nature has legally enforceable rights would enable the machinery of the state to be used to safeguard ecosystems, rivers, mountains and other species against human exploitation and, in so doing, would begin a process of fundamentally restructuring legal and political systems.<sup>3</sup> His view is no longer "pie-in-the-sky". In 2008, Ecuador adopted a constitution which recognized that Nature has legally enforceable rights.

What role can taxation play in this early phase of that transformation? It is clear enough that society needs to discourage certain activities that harm ecosystems and encourage activities that restore and strengthen them. A tax can be imposed on undesirable activities. The question is how to structure such a tax and deal with the politics that inevitably arise as we implement new ways of doing things.

Ideas for new taxes are coming from a variety of sources, including scientists. For example, James E. Hansen, one of the world's best known climate scientists, proposes a special tax to deal with coal. He has repeatedly emphasized that burning fossil fuels (coal, oil, gas) will eventually threaten humanity's survival because fossil fuels produce carbon dioxide (CO<sub>2</sub>) that stays in surface reservoirs – atmosphere, ocean, soils and biosphere – for millennia. Climate response to CO<sub>2</sub> begins slowly, because of the inertia of the ocean and the ice sheets on Antarctica and Greenland. He says global warming so far is equivalent to Earth having the sniffles. He points to the events of 2010 – China's droughts followed by floods, Moscow's heat wave, and Pakistan's extensive floods – and while people can get through these problems, the real challenges will

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<sup>3</sup> Cullinan, C., "Wild Law and the Challenges of Climate Change", *Soundings*, Issue 37, 2007, pages 116–26.

affect our grandchildren if this generation does not rapidly reduce CO<sub>2</sub> emissions.

Hansen argues that governments must recognize that burning fossil fuels will increase CO<sub>2</sub> and will cause Planet Earth as we know it today to become a different planet – ultimately, a desolate ice-free planet with much higher sea levels than today. For humans, the transition will be painful and out of humanity's control. Hansen wants society to phase out coal burning and leave fossil fuels in the ground. The challenge is cost. Fossil fuels are cheaper than other forms of power in significant part because the companies that sell them and the consumers who use them are not required to cover the real costs of their impact on society. Public health costs, for example, (called “external costs” by economists) are borne by the public through sickness and paying medical bills. The fossil fuel industry is not made to cover these costs. If it were, then fossil fuels would not be as cheap as they are today.

Hansen's idea is to create a special carbon tax to be collected from fossil fuel companies. The money collected should be distributed monthly to the public on a per capita basis as a dividend to allow lifestyle adjustments and spur clean energy innovations. He argues that as the tax rises, it will make fossil fuels more and more expensive, and at some stage, there will be no reason to keep on burning them and they will be phased out and replaced by clean forms of energy. Hansen argues this “fee-and-dividend” approach provides the most rapid economically efficient path to a clean energy future and would cure us of our current fossil fuel addiction.<sup>4</sup>

Economist Richard Sandor, founder of the Chicago Climate Exchange, and known as the “father of financial futures”, argues in favour of using market means as another way to change behaviour. He points to the successful sulphur dioxide emissions trading scheme in the United States as an example, and advocates that society should think broadly about all the tools available to push the low carbon transformation. Sandor acknowledges that Hansen's worry about cap-and-trade schemes being exploited by business to line their own pockets is real, but he argues that this is not a reason to “throw the baby out with the bathwater”. Properly designed, cap-and-trade schemes have a role to play too.<sup>5</sup>

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<sup>4</sup> Hansen, J., *Storms of My Grandchildren: The Truth about the Coming Climate Catastrophe and Our Last Chance to Save Humanity*, Bloomsbury, 2009, page 241; Hansen, J., “Tell Barack Obama the Truth – The Whole Truth”, [http://www.columbia.edu/~jeh1/mailings/2008/20081229\\_Obama\\_revised.pdf](http://www.columbia.edu/~jeh1/mailings/2008/20081229_Obama_revised.pdf), 10 November, 2010.

<sup>5</sup> See, e.g., “Economics, Innovation and Persistence”, [http://www.kellogg.northwestern.edu/news\\_articles/2009/richardsandor.aspx](http://www.kellogg.northwestern.edu/news_articles/2009/richardsandor.aspx); see also “CCX's

It would be comforting to think that the transformation to an ecologically sustainable future has already begun. We see evidence of this in new scientific understanding that Planet Earth is one functioning system, that Planet Earth can be given legally enforceable rights, and that both market systems and taxation can expedite the transition. There is another challenge and that is time. Scientists worry about run-away climate change once a tipping point is reached and that humans will be catapulted from the current climate sweet spot into another state that is unsafe for us.

The macro policy rethinking advocated by commentators such as Hansen and Sandor provides us with frameworks for longer-term reshaping of the fundamentals of making carbon “pay its way” in a comprehensive and proper manner. The authors of the jurisdictional chapters in this book are, of necessity, more focused on analysing the interaction, *today*, between taxation (and related fiscal measures) and the environment. From these studies it is clear that a great deal is amiss in the way this interface works at present across all the jurisdictions under review. But this research also shows positive steps being taken – and great scope for further, positive tax policy development. We can see from this research how smart policy innovation can start right now – and also how it can build better foundations for the introduction of more comprehensive, globally effective policy frameworks such as those advanced by Hansen and Sandor.

Time is of the essence. The scholarship in this volume shows that lawyers and tax experts are engaged in finding solutions. Can green taxation make a difference? The answer is a resounding “yes”.

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Richard Sandor on Financial Innovation and the Protection of Our Air and Water”, <http://knowledge.emory.edu/article.cfm?articleid=1338>, 10 November 2010. For the *Hansen vs. Sandor* argument, see also Cheung, C.F. and Chen, S., “Fiery Exchange at Climate Dialogue”, *South China Morning Post*, November 5, 2010.