Preface

It was a weekend road-trip around Wales, in part to mark our completion of a previously jointly edited collection – *Sustainable Development Goals: Law, Theory & Implementation* (Edward Elgar 2018) – which prompted the first initial thoughts for this project. While driving around South Wales we reflected on the multilateral nature of the Sustainable Development Goals, the innate political choices behind them, that multilateralism is often a shallow form of universalism and that although sustainable development is premised upon an integration of social, ecological and economic considerations at a project (or even programmatic) level, ultimately for development to be sustainable, it must also recognise the meta-ecological realities in which it occurs.

It was but a short step – if step is an appropriate metaphor in a car – from discussing the limits of multilateralism and the constraints of current international environmental law to considering the planetary boundaries approach developed out of the Stockholm Resilience Centre. Though recognising the inevitable social scientific scepticism of anything being presented, or otherwise considered, as objective, there was something appealing – if idealistic – in building normative regimes (or setting their objectives) around the fundamentally common-sensical premise of keeping humanity within the safe operating space of the planet. We, along with several lawyers, had been struck by the failure of many environmental rules to curtail ongoing degradation in almost all fields of our (sub-)discipline. Might there be some value in re-analysing what the law should be or, even more pertinently, *must become* in light of what the planet could safely bear, especially now that we were so obviously entering the Anthropocene? Even in the two years since we have started this project, the evidence for this has become more stark.

Of course, what invariably starts as idealistic and normative on a road-trip rightly becomes analytical and critical when further refined; so this peer-reviewed edited collection, we hope, demonstrates. We of course disregard neither the possibility that the planetary boundaries approach could – and should – prompt normative change, nor that law will have to play an increasingly important role in helping humanity to respect the planetary boundaries. But the relationship between them is not beyond contention. As both the introduction and many of the chapters indicate, there are invariably debates around what has been included, what has been omitted and how thresholds and boundaries have been set, measured and monitored. Nevertheless, as a framework for evaluating why law continues – almost entirely – to grapple inadequately with the most serious socio-ecological issues at a planetary scale, there is currently no better lens, we would argue, by which to consider current and putative legal developments. If law is unable to fully confront the myriad regulatory challenges flowing from the planetary boundaries, the past 50 years of innovation in law will have been in vain; we then must adapt to a life that is, by definition, inhospitable.

This motif of the road-trip, mirrored also by the image of the path on the front cover – a photo taken by Duncan – seems particularly pertinent. It reflects both the assumed linear progression that much of humanity remains convinced is its path, while simultaneously recognising the narrowness of the choices which humanity increasingly faces. The path, in particular, with limited vegetation on either side is a stark reminder of the risks we all face

if we do not curtail our excesses and stick within those circumscribed limits which, in the language of the planetary boundaries approach, offer us a ‘safe operating space’. The image is also a stark reminder of humanity’s increasing isolation from other living beings and its self-inflicted desolation and vulnerability as a result of our Promethean arrogance as it plays out on our home, planet Earth. How can we escape our own folly, if not seemingly inescapable subjugation to nature’s tyranny?¹

As lawyers, we are particularly interested in the underexplored role of law in, and its contribution to, keeping humanity within the planetary boundaries’ safe operating space. By drawing on the rich and diverse insights of leading law and governance scholars from around the world, the volume has been a group effort in so many ways. The completion of this project came at the height of the COVID-19 pandemic, and it is with admiration for – and immense gratitude to – the contributors that we managed to complete the project while we were all, at various stages, in lockdown and trying to find reassurance in the seemingly chaotic new normal. This was for all – and for many (as we write this) it continues to be – a hugely challenging time. It was also a time that highlighted the interconnectedness (and also the fragility) of the human family, while paradoxically – certainly in early 2020 as many countries were in ‘lockdown’ – it also indicated what it might take, and what it could mean, for humanity to decelerate the human development project in a time of socio-ecological decay.

We remain grateful to Ben Booth and Laura Mann of Edward Elgar, who have supported and sustained us, as they always do. We are also immensely grateful to Dr Gabriel Lopez Porras, Research Fellow in Earth System Law at Lincoln Law School, University of Lincoln, United Kingdom, for helping us finalise the manuscript before final submission. Finally, we wish to thank the anonymous peer reviewers for their constructive comments, which we believe further enriched this volume.

Duncan dedicates this book to his partner Alec, and Louis to his godchildren Christoff and Georg, the future generation.

Duncan (Sheffield) and Louis (Heidelberg), June 2020

¹ We recognise, at this point, that we are purposely challenging, if not subverting, Thomas Paine’s belief that science would come to master the tyranny of nature (Thomas Paine, *The Age of Reason* (1794–1807)): ‘The Almighty Lecturer, by displaying the principles of science in the structure of the universe, has invited man to study and to imitation. It is as if He had said to the inhabitants of this globe, that we call ours, “I have made an earth for man to dwell upon, and I have rendered the starry heavens visible, to teach him science and the arts. He can now provide for his own comfort, AND LEARN FROM MY MUNIFICENCE TO ALL, TO BE KIND TO EACH OTHER.”’

'The planetary boundaries concept provides an ideal framework for connecting science with law at the global level. This book explores this connection in great detail, from our undeniable need for limits and the fundamental concepts of ethics, justice and governance to the comprehensive assessment of the legal implications of each of the individual boundaries.'

Will Steffen, The Australian National University, Australia

'Co-edited by Duncan French and Louis Kotzé – two of the foremost scholars in the field of environmental law in the era of the Anthropocene – this Research Handbook is the first comprehensive attempt to investigate, from a legal perspective, the human dimensions of scientific concepts of planetary boundaries. The book brings together a fascinating series of contributions from some of the leading legal thinkers in the field. At a time when raging fires and other "unprecedented" environmental disasters are providing increasing evidence of the consequences of failing to respect planetary limits, this book is a timely and important reminder of the contribution that can be made by law in ensuring that humanity and our environment remain within the planet's "safe operating space".'

Jacqueline Peel, University of Melbourne, Australia

'If international environmental law is to stay relevant in the face of overwhelming evidence of its inability to address the galloping environmental harms humanity is witnessing, it needs to embrace a fundamental reset of its premises, conceptual pillars, and governance models. Such a reset requires imagination – imagination that is outrageous in its ambition and fuelled by outrage. This Research Handbook, edited by two of the finest international environmental law scholars of our time, Duncan French and Louis Kotzé, is a work of such outrageous imagination. It challenges legal boundaries in its quest to protect planetary ones, and in so doing takes us closer to law and governance fit for environmental purpose.'

Lavanya Rajamani, University of Oxford, United Kingdom

'In the last two decades, a growing body of transdisciplinary research has brought to light the immense impact of certain human processes not just on "history" but on the Earth system. Yet, lawyers and legal researchers have remained conspicuously absent from this major effort, despite the very significant role that legal organisations play in enabling and, we must hope, controlling such impact. This ground-breaking volume fleshes out, for the first time, what law means for the Earth-shaping human processes that have come to characterise our epoch, the Anthropocene.'

Jorge Viñuales, University of Cambridge, United Kingdom

'A comprehensive, nuanced and expert examination of how international environmental law and governance should reflect the planetary boundaries that we are rapidly approaching or have already begun to violate, this volume could not be more timely. With interdisciplinary contributions from scholars in a wide variety of fields, the book is both an introduction of the concept of planetary boundaries to those who are not familiar with it, and a detailed exploration of its legal ramifications. It will be a foundational text for all future work in this area.'

John Knox, Wake Forest University School of Law, United States of America, and former United Nations Special Rapporteur on Human Rights and the Environment

'Duncan French and Louis Kotzé have assembled a must-read primer for anyone researching the legal context to the planet's environmental boundaries under unprecedented stress.

Read this book for an accessible, insightful and comprehensive account from some of the world's foremost scholars of environmental law.'

Benjamin J. Richardson, University of Tasmania, Australia

'This collection is a profound and deep meditation by an esteemed panel of authors on the role of law at a time of extreme risk and uncertainty. As the planet's capacity to uphold life support systems becomes increasingly tenuous, the law is invoked to provide the normative and regulatory frameworks to constrain human behaviour. By reflecting on law as an instrument of governance, the authors question how to facilitate a convergence between planetary and legal boundaries. This might include a focus on responsibilities rather than rights, on Indigenous knowledge and the Rights of Nature. The editors are to be congratulated for stimulating these insightful responses.'

Rosemary Lyster, University of Sydney, Australia

'By now well into the Anthropocene, human societies are running up against the limits of what the Earth system can sustain. This excellent volume offers a thought-provoking and engaging set of reflections on the natural, conceptual and intellectual dimensions of our planetary boundaries, and on the capacity of international environmental law to articulate and protect them. A compelling, indispensable addition to the Research Handbook series.'

Jutta Brunnée, University of Toronto, Canada

'This is a welcome overview of existing efforts and future possibilities of legally regulating activities that threaten to violate the biophysical conditions for human survival in the Anthropocene. The chapters systematically review the ways in which national and international law can be applied to keep humanity within the so-called planetary boundaries that define the Earth's "safe operating space". In interweaving natural-science insights on the Earth system with legal options and ethical perspectives, this volume outlines feasible reforms and offers hope.'

Alf Hornborg, Lund University, Sweden