

crafted in a style that invites the reader to look further into the issues raised. It should become a first point of reference for many on the subject.

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Science and the Precautionary Principle in International Courts and Tribunals.

By CAROLINE E. FOSTER [Cambridge: Cambridge University Press, 2011, 375 pp, ISBN 978-0-52151-326-5, Hardback, £74.00]

Though numerous scholarly publications—in Europe at least—have been devoted to the controversial principle of precaution, it comes as no surprise that some of the facets of this all-encompassing environmental principle are still dogged with controversies. Needless to say that the reversal of the adjudicative burden of proof has produced as much controversy as does the principle itself.

Under international law, the classical apportionment of the burden of proof, whereby each party proves the facts upon which its claim or its defence is based faces its limits in cases imbued with scientific uncertainty. Indeed, the State likely to be affected by risk-bearing activities authorised by another State has to bear the brunt of the burden of proof that there is a likelihood of harm. However, under municipal law, the State could easily require the operator to establish the safety of its operation. Hence, the reversal of the burden of proof under municipal administrative law is much more favourable to the national interests than the classic adjudicative burden of proof.

If the absence of scientific certainty may no longer serve as a pretext for delaying the adoption of measures to protect the environment, international courts have been called on in several cases to reassess the classical apportionment of the burden of proof in cases permeated by uncertainty. Foster explores in-depth whether this may be adjusted by means of presumption, with the aim of mitigating the inequality between the parties in terms of the affected State's ability to demonstrate without a shadow of a doubt the facts sustaining its claim.

It is the author's view that in order to demonstrate that the subject matter of a claim brought before an international court of tribunal is such that a reversal in the burden of proof might be called for, the claimant should demonstrate the extent to which the precautionary principle interplays with the substantive rules at issue. In addition, such a reversal would be subject to specific thresholds, such as the existence of a certain degree of uncertainty and the scale of the harm. As a result, a low initial burden of proof rests with the State invoking precautionary measures. In so doing, Foster raises questions of immense practical importance. Such a reversal offers a way to ensure that in many international disputes proper account is taken of the uncertainty permeating a number of risk-bearing activities. Moreover, she succeeds in demonstrating that

burden shifting need not be an all-or-nothing proposition. It might be possible to lower the burden of proof from beyond all reasonable doubt to a balance of probabilities.

The scope of the book is much broader than the theme outlined above. Other issues, such as the impact of the precautionary principle on revision proceedings and requests for a determination of nullity, are discussed. As a matter of course, the author is well aware that the incremental changes she suggests will have to overcome many hurdles. Given that international law is subject to a decentralised law-making process, international courts and tribunals 'must consider most attentively the implications of their procedural decisions'. Furthermore, given that in many cases the facts and the law are to a great extent intertwined, it is difficult to draw the line between fact-finding and making determinations of law.

To conclude, with a sharp increase of international litigation in the environmental field, this is a timely and thought-provoking book. Even after this impressive analysis, however, it may be said that the topic still provides scope for further in-depth research.

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International Law in the Era of Climate Change. By ROSEMARY RAYFUSE and SHIRLEY V. SCOTT [Cheltenham: Edward Elgar, 2012, 378 pp, ISBN 978-1-84980-030-3, Hardback, £97.00]

Numerous commentators view climate change in the positive sense of providing a change in narrative (detecting increasing signs of human kind seeking a more sustainable presence in the Earth system): see for instance, Mark Lynas' *The God Species – How the Planet Can Survive the Age of Humans* (Fourth Estate 2011). Lynas attributed this in part to the transforming potential of international climate negotiations. An antidote to such optimism is offered by Rayfuse and Scott at the very start of this edited volume. Their opening chapter points in blunt terms to continuing disappointments both over and post-Kyoto, and the overwhelming hurdles posed by 'the broad range of political and economic interests at stake' (p 4). Yet the editors would agree with Lynas at least to the extent that the narrative has changed: with, in their own context, significant implications for the future development of discrete environmental law regimes that offer a wide range of international cooperation and coordination.

The book is rich in challenging ideas. It also has a distinctive focus: rather than adding to increasingly voluminous commentaries upon the development and content of international climate change law, it 'is about the impact of climate change, and our responses to it, on both the substance and processes of the broader corpus of public international law' (p xi). In other words, the attention is directed at impacts, both direct and indirect, on existing international law regimes, in all their variety and heterogeneity of both objectives and subject matter. The treatment