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Book Reviews

Corporate Strategies and the Clean Development Mechanism: Developing Country Financing for Developed Country Commitments?, by *Søren Ender Lütken* and *Axel Michaelowa*, published by Edward Elgar Publishing, 2008, 192pp, £55.00, hardback.

Since its inception, the Clean Development Mechanism (CDM), established under Article 12 of the Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC),[1] has received a lot of attention. It has been described as a 'breathtaking success', spawning a market in a regulatory commodity that is worth billions of dollars[2] and engaging the private sector in the Kyoto Protocol's implementation.[3] The CDM has also been criticized for various reasons, including its administration and decision-making structures,[4] unequal geographical distribution of CDM projects, the mechanism's negligible contribution to sustainable development, its limited impact on technology transfer and so on. This book by Søren Ender Lütken and Axel Michaelowa adds an interesting dimension to the CDM debate through micro-economic analysis that examines the CDM from the perspective of corporate strategies.

The picture emerging from the book – that the CDM largely relies on unilateral projects financed by entities from non-Annex I countries – is somewhat surprising. It is also quite different from the vision that most experts had in mind when agreement on the CDM was reached at the Third Conference of Parties (COP-3) of the UNFCCC in 1997. The initial assumption was that the CDM would be 'a form of project-based joint implementation between Annex I and non-Annex I countries'.[5] In other words, developed countries listed in Annex I of the UNFCCC would invest in projects located in developing countries (i.e. non-Annex I countries) and such investments would provide 'for "win-win" opportunities, whereby industrialized countries are allowed to achieve their commitments through the most cost-effective and flexible means, and developing countries gain access to financial resources and clean energy technologies'.[6] Certainly, there were different views on whether the CDM should rely on projects designed by the private sector, or whether parties should adopt 'an interventionist approach' engaging governments and international development institutions in development of CDM projects.[7] However, in both cases, it was commonly assumed that financing for CDM projects would originate from Annex I countries. Concerning the private sector, the assumption was that companies in Annex I countries would direct their investment in CDM projects in developing countries where the marginal abatement cost is lower. Assessing the situation a decade later, Lütken and Michaelowa argue that the 'prime driver of investments and the prime source of finance for CDM projects is – and will likely remain – the investment appetite of domestic sponsors within non-Annex I countries' (at 108). The key focus in their book is in explaining this somewhat surprising finding and analysing the implications, including for the additionality of CDM projects.

Corporate Strategies and the Clean Development Mechanism consists of five chapters. Chapter I contains a brief introduction to global climate policy. Chapter II focuses on the CDM's role in global climate policy, describing a 'gold rush for CDM projects' and highlighting that 'less than three years after COP 7 in Marrakech, the CDM had become one of the hottest businesses on the planet, mobilizing billions of Euros and spawning a whole set of service providers as well as financial vehicles buying CERs [Certified Emission Reductions]' (at 26–27).

Chapter III focuses on corporate strategies regarding the CDM both in Annex I and non-Annex I countries. While the chapter begins with a lengthy theoretical discussion, it arrives at interesting conclusions. According to Lütken and Michaelowa, for companies based in Annex I countries, decision making concerning CDM investments is based on processes that corporations use when responding to what they perceive as a *threat*, in this case, a requirement to reduce greenhouse gas emissions. Such

[1] Kyoto Protocol to the United Nations Framework Convention on Climate Change (Kyoto, 11 December 1997).
[2] C. Streck and J. Lin, 'Making Markets Work: A Review of CDM Performance and Need for Reform', 19:2 *European Journal of International Law* (2008), 409, at 409.
[3] K. Kulovesi, 'The Private Sector and the Implementation of the Kyoto Protocol: Experiences, Challenges and Prospects', 16:2 *RECIEL* (2007), 145, at 150–152.
[4] See C. Streck and J. Lin, n. 2 above.
[5] J. Werksman, 'The Clean Development Mechanism: Unwrapping the "Kyoto Surprise", 7:2 *RECIEL* (1998), 147, at 153.
[6] Ibid., at 147.
[7] Ibid., at 153.

processes are different in character when compared to decisions relating to *opportunities* (at 65). Furthermore, responses to the authors' empirical study 'do not support the universally held assumption that emissions will generally be reduced where the marginal cost of abatement is the least' (at 76) but 'provide a consistent picture of a corporate sector that generally dismisses CDM investment as a relevant compliance option' (at 77). The authors thus conclude that companies in Annex I countries are unlikely to invest in the CDM outside their core businesses:

> . . . emission reduction is a secondary issue and only rarely influences corporate strategic decisions. The framing of the issue and the decision processes involved do not support the establishment of a global framework that ensures that investments in response to the emission constraint are directed towards the most cost efficient options (at 69).

In contrast, for companies based in non-Annex I countries, investing in CDM projects is seen as an opportunity, making them 'natural emerging prime CDM investors' (at 108). However, the authors find that:

> . . . while decision processes in non-Annex I corporations generally support the development of business as usual CDM projects with weak additionality arguments, they do not support the large scale CDM project development seen in the market, if they were to be truly additional investment responses (at 88).

These findings lead to the book's most interesting discussion in chapter IV on the implications of the CDM's reliance on unilateral projects and investment by companies from non-Annex I countries. The authors first clarify that by 'unilateral projects' they mean 'projects that either exclusively are financed by non-Annex I sponsors or include no more Annex I party capital than is offset by the value of CERs in an ERPA [emission reductions purchase agreement]' (at 112).

If one accepts that CDM projects are unilaterally developed and financed, then 'the CDM generation capacity has its origin, not in additional FDI [foreign direct investment] but in non-Annex I domestic financing and financial capacity' (at 112). Proceeding from this assumption, the authors assess unilateral CDM investment capacity in non-Annex I countries and present two interesting case studies on China and India, the leading CDM host countries. To this reviewer, the analysis raises important questions concerning additionality, in other words, the requirement designed to safeguard the environmental integrity of the Kyoto Protocol according to which CDM projects must result in 'reductions in emissions that are additional to any that would occur in the absence of the certified project activity'.[8]

Discussing what they characterize as market-driven unilateralism in India, Lütken and Michaelowa indicate that:

> As predicted under a predominantly unilateral project development structure, many Indian projects, particularly in renewable energy and waste heat recovery from heavy industry, have stimulated an intensive debate about their additionality. Investment in wind and biomass power generation is very attractive for Indian companies (at 129).

On China's 'state-imposed unilateralism', the authors stress that China has benefited from a decision by the CDM Executive Board not to regard policies enacted after the adoption of the Marrakesh Accords in November 2001 when determining baselines (at 130–131). This is because China enacted national targets in 2006 for wind energy and biomass:

> . . . this provides ample evidence that a regulatory circumvention of the additionality criterion has been necessary, not to ensure the Chinese allocation of investment funds to the tune of €30 billion (or more) for wind energy and €40 billion of biomass, which would happen in any case, but to ensure that these investments generate CERs . . . It is, of course, illusionary to believe that these investments would be taken off the table if the CDM was abolished (at 131).

As the authors point out, debate about the additionality requirement and its stringency has been 'raging over many years' (at 133) and the CDM Executive Board 'has introduced several policy principles regarding additionality determination but their application remains inconsistent' (at 134). Difficult as it may be, the additionality requirement is crucial for the environmental integrity of the CDM and the Kyoto Protocol: since non-Annex I countries have no emission caps, CERs generated by CDM projects increase the overall amount of carbon credits in the system and only lead to benefits in terms of climate change mitigation if they are based on real emission reductions. One way of interpreting the analysis and findings in the book is that many of the CDM projects in the current portfolio might not be strictly speaking additional – but rather, they are based on investments by companies in non-Annex I countries that would have taken place anyway – thereby raising concerns over the environmental integrity of the mechanism that is widely perceived the most successful aspect of the Kyoto Protocol. It will be interesting to see whether and how other experts try to counter these arguments.

The analysis also raises questions concerning fairness of the unilateral nature of CDM

[8] See Kyoto Protocol, n. 1 above, Article 12.5(c).

investments. As we saw above – the original assumption was that CDM investments would come from developed countries. According to the authors, however, 'while unilateralism may intuitively seem unfair, it is not a straightforward evaluation' (at 142). Instead, the outcome is 'a somewhat blurred picture, which at least does not render unilateralism distinctively unfair – depending, though, on the characteristics of the projects that materialize as CDM projects' (at 144). If a CDM project is not truly additional, it cannot be argued that an investor from a non-Annex I country has deviated his funds towards a financially less attractive option. Also:

> While the economy of a host country as a whole does not benefit significantly from the re-labelling of 'business as usual' projects, additional revenues are, of course, raised through CERs (for the project sponsors) or through taxation of CERs accruing to host country regulators (at 138).

For a 'truly additional project', however, they could be perceived as unfair as it is developing countries that divert their investment funds towards emission reductions while developed countries only contribute toward the value of emission reductions (at 143). In the view of the authors, however, a fairness determination is subtle and should rest upon developing countries' assessment of the alternatives (at 145).

Overall, the analysis by Lütken and Michaelowa leads to conclusions that seem to cast shadows over the dominant image of the CDM's success in fuelling the international carbon market and attracting new investment for climate-friendly projects in developing countries. The analysis is therefore relevant for the ongoing negotiations concerning the future of the UNFCCC climate regime and the Kyoto Protocol. Negotiating texts developed by the *Ad Hoc* Working Group on Long-term Cooperation under the UNFCCC and the *Ad Hoc* Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol both contain numerous proposals to improve the CDM and create new market mechanisms for the post-2012 period. But will these proposals help in addressing the shortcomings identified in the book, especially given that additionality is a loaded topic that has been debated since the inception of the CDM?

In the book, the CDM's future beyond 2012 is taken up several times, including in chapter V, which is dedicated to the question as to whether the CDM will survive beyond 2012. Despite having raised serious questions concerning the functioning of the CDM in its present form, Lütken and Michaelowa reach a conclusion that is supportive of the CDM and its continuation. And indeed, during the past decade, enormous efforts have gone into developing the detailed rules and institutions that govern the CDM. The mechanism has also engaged a large number of new actors in climate change mitigation efforts and raised awareness of climate change in the private sector and developing countries. It would thus be very sad to see the CDM disappear – despite its many flaws, the mechanism still seems like one of the most positive elements of the UNFCCC regime. However, the important doubts concerning the CDM's environmental integrity cast by Lütken and Michaelowa should not be ignored. Further discussion on this issue by the academic community and climate policy makers would seem to be necessary. In any case, it is easy to concur with the authors' final conclusion and their broad but ambitious terms of reference for international climate negotiators: What they will need to accomplish is an outcome that ensures the continuation of the CDM, while raising environmental ambition and ensuring integrity of the post-2012 climate regime.

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China and International Environmental Liability: Legal Remedies for Transboundary Pollution, edited by *Michael Faure* and *Song Ying*, published by Edward Elgar, 2008, 392pp, £85.00, hardback.

Interest in China continues to grow strongly among European and international environmental lawyers, as seen in the recent International Union for the Conservation of Nature Academy of Environmental Law Colloquium held in Wuhan in November 2009 (at which the first named co-editor was the distinguished speaker) and continues this year with events such as the EU-China Conference on Environmental Law being hosted by the Faculty of Law, Ghent University in September. This book, which among other things takes a comparative multidisciplinary approach, had its origins in cooperation between Peking and Maastricht Universities, is a significant demonstration of this growing interest, co-edited by prominent European and Chinese legal academics from those institutions with experience in international and comparative law.

China and International Environmental Liability brings together authors primarily from Europe (Gerrit Betlem, Michael Faure, James Harrison, André Nollkaemper, Marjan Peeters, Thomas

Richter) and China (Gou Haibo, Huang Chiachen, Li Dan, Li Junhong, Song Ying, Wang Canfa, Wang Hui, Wang Jin and Yan Houfu), with another author, Jack Jacobs, from Israel. They collectively bring a breadth of experience in international and private law which is used as a lens through which to examine the remedies available for transboundary environmental pollution in an integrated manner, which is the stated first goal of the book. Administrative and criminal law are also considered in the mix of domestic remedies to supplement the international law of treaties and custom. Each of these remedies is considered in the second goal, which is to apply them to China, and in particular the pollution incident in 2005 in the Songhua River, which constitutes the final third of the text. After an introduction setting out the history and reasons for the book, a further 11 chapters follow, arranged in three parts; comparative conclusions are set out in a final chapter in a part of its own at the end.

Part I is entitled 'International Environmental Law and Conventions', and has four chapters. In chapter 2, Nollkaemper analyses the concept of cluster litigation in cases of transboundary environmental harm, with reference to the different fora for access to justice. In chapter 3, Harrison explores the case concerning the Pulp Mills on the River Uruguay and the convention between the parties to it, Argentina and Uruguay, which in part was designed to resolve transboundary pollution disputes. This case has just been determined by the International Court of Justice (ICJ), with one of the findings of the Court (of relevance to chapter 8 of the book and of particular interest to this reviewer) that the practice of environmental impact assessment (EIA):

> has gained so much acceptance among States that it may now be considered a requirement under general international law to undertake an environmental impact assessment where there is a risk that the proposed industrial activity may have a significant adverse impact in a transboundary context, in particular, on a shared resource.

In chapter 4, Wang Hui considers the international legal framework and its application to China of provisions for transboundary vessel-source marine pollution; and in chapter 5 Gou Haibo evaluates the International Law Commission (ILC) proposal on the role of the origin State in transboundary damage.

Part II is entitled 'National Environmental Law in a Transboundary Legal Context', and also has four chapters. In chapter 6, Faure (the first named co-editor) and Betlem apply national liability law to transboundary pollution and examine lessons from the Dutch Civil Code in Europe and the citizen suit in the *Pakootas Case* in the USA. In chapter 7, Peeters considers legal aspects of the joint governance of transboundary river basins, focusing on the International Meuse Commission and the Commission for the Protection of the Rhine. In chapter 8, Jacobs considers EIA as a customary obligation to prevent domestic and transboundary environmental damage, without the benefit of the ICJ's findings in the *Pulp Mills Case* (above); as noted, these provide some support for this, although the Court rather surprisingly failed to recognize the significance of public consultation, which it did not believe was part of that obligation. In chapter 9, Richter analyses Chinese and European law (EU and German) dealing with transboundary environmental crimes, setting the scene for the *Songhua River Pollution Case*, the subject of part III.

The pollution of the Songhua River in North-Eastern China in late 2005, resulting from a serious chemical incident in the city of Jilin and which led to the pollution of the Amur River in Russia, is undoubtedly the inspiration for the entire book, and the preceding chapters in parts I and II provide a framework and background to the analysis of the situation by the Chinese authors that follow. Chapter 10 by Wang Jin, Huang Chiachen and Yan Houfu reflects on the incident and points to four potential disputes arising from it, making suggestions for improved governance. These are claims by the Russian Government against the Chinese Government; the Russian Government against the polluter, PetroChina; the Russian victims against the Chinese Government; and the Russian victims against PetroChina. Chapter 11 examines the incident from the perspective of Chinese environmental law and makes suggestions as to how it should be improved, pointing specifically to the need for the establishment of a regime providing for compensation for environmental damage. Finally, Song Ying (the second named co-editor) analyses the international law aspects of the Songhua River incident with reference to applicable legal principles and responsibility and liability issues.

The organization of the book deserves some comment. While the editors had at their disposal chapters by experienced and well-known authors, the ordering of the material and the links between them could have been improved. Given the focus on China, part III may best have been part I, setting out the incident in detail at the start and the inadequacies of the domestic and other legal frameworks brought to bear (or not) on the dispute. The current parts I and II could then have followed, commenting on how alternative approaches in other jurisdictions and under other legal systems could have played a part in resolving the specific dispute and similar disputes in other contexts.

Further to the general organization of the book, closer linkages, clearer headings and more focused explanations for the chapters chosen would have helped. For example, the material in part I is extremely diverse, with chapter 4 concerning vessel-source marine pollution (which is not of apparent relevance to the case) and chapter 3 on the *Pulp Mills Case* (which was not at all clear from the title).

Part II is similarly diverse, with the chapters on EIA and transboundary river basins failing to provide linkages with issues in a Chinese context. Although customary international law is focused upon with respect to EIA, more could have been said with respect to transboundary EIA, which has in fact been applied beyond the context of the Espoo Convention (itself only briefly discussed) in Asia. While China's involvement with transboundary EIA has been notably restrained, mention could still have been made of the, admittedly limited, role China has in the protection and management of the Mekong and Tumen river basins and the provisions for transboundary EIA, which, given capacity building and political will, could play a greater role in avoiding similar disputes and enhancing China's relations with its neighbours. Similarly with respect to the chapter on transboundary river basins, some comment on China's role would have been helpful to contextualize and integrate the material. As it stands, putting aside the efforts of the introduction and the conclusion to do this, and some authors who have made a point of doing so (such as Richter in considering transboundary environmental crimes), there are times when the reader is left thinking that the chapters are largely written on a stand-alone basis without clear direction to position themselves in a book with stated aims of integration and application to China.

Despite these criticisms, the quality of the individual contributions is for the most part very high. Stand-out chapters for this reviewer are those by Nollkaemper on cluster litigation, Faure and Betlem on national liability law, and by Wang Canfa, Yu Wen-xuan, Li Dan and Li Jun-hong on the Songhua River incident. The phenomenon of cluster litigation whereby private claimants who are injured by transboundary environmental harm use multiple options to pursue claims is clearly presented by Nollkaemper, with reference to both the *Pulp Mills Case* and the Songhua River incident. Advantages of such an approach are that the combination of domestic and international fora may significantly enhance the prospects of environmental compliance, bringing comprehensive and effective remedies to victims. Although there are acknowledged limitations, the use of national liability law (tort) to solve transboundary environmental disputes, which involves the extraterritorial application of national tort law, is particularly recommended by Faure and Betlem where pollution is kept within defined boundaries and polluters can be identified. In such circumstances, it is usual for the national tort law of the victim's State to be applied to pollution originating in the polluter's State.

The chapter by Wang Canfa *et al.* is an excellent analysis of the problems of China's current legislation to deal with incidents of this kind, highlighting systemic failure to take adequate precautionary measures to deal with such incidents, a focus on projects to the exclusion of underlying strategic proposals, which recommends strategic environmental assessment, and the focus on new legislation to the exclusion of the implementation of existing provisions. However, as the authors of chapter 10 acknowledge, some new environmental law is clearly needed, such as provision for insurance, emergencies, and settlement of transregional and transboundary disputes.

Comparative and concluding remarks by the editors helpfully summarize the preceding chapters with respect to the place of international law, its influence on domestic law and the application of domestic law to transboundary pollution. The final paragraph of the conclusion of the book is also the conclusion of this review, that whatever the difficulties of analysis and comparison, there is huge value in sharing experiences with environmental law, and this volume is a very capable demonstration of that as applied to China, which is perhaps the biggest challenge of them all.

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Biodiversity Conservation, Law and Livelihoods: Bridging the North–South Divide – IUCN Academy of Environmental Law Research Studies, edited by *M. Jeffery, J. Firestone* and *K. Bubna-Litic*, Cambridge University Press, 2008, 612pp, £83.00, hardback.

The relevance of the Convention on Biological Diversity (CBD) to sustainable livelihoods has been increasingly underscored by the CBD Secretariat, parties and stakeholders following the release of the Millennium Ecosystem Assessment (the Assessment) in 2005.[9] The Assessment was the first global scientific process, commissioned by former United Nations Secretary-General Kofi Annan, to assess the

[9] Millennium Ecosystem Assessment, *Ecosystems and Human Well-Being: Biodiversity Synthesis* (World Resources Institute, 2005).

consequences of ecosystem change on human well-being. The Assessment provided, for the first time, global scientific evidence of the urgent need to address environmental sustainability and its link to poverty reduction. It effectively drew attention to the benefits people obtain directly or indirectly from ecosystems (ecosystem services), such as food, water, timber, fibre, climate and water regulation, floods and disease prevention, recreational, aesthetic and spiritual benefits, as well as soil formation, photosynthesis and nutrient cycling. Since its release, the Assessment has contributed to refocusing multilateral negotiations and initiatives, and is now significantly shaping the revised strategic plan of the CBD.

In light of these scientific and policy developments, the theme of the edited book under review – focusing on the legal challenges, solutions and implications of biodiversity conservation for sustainable livelihoods and North/South equitable relations – is certainly a timely and extremely interesting one.

The volume collects the proceedings of the third colloquium of the International Union for Conservation of Nature Academy of Environmental Law Research Studies, which was held in Sydney, Australia, in July 2005, gathering over 130 experts from 27 countries. Diversity is certainly the main characteristic of the collection, which spans across international, regional, comparative and country-specific law. Great diversity characterizes also the choice of authors of the 30 contributions to the book, including well-known academics, Ph.D. researchers and practitioners.

The six parts in which the book is divided discuss, respectively, the history and governance structure of international biodiversity law; biodiversity conservation, including needs, problems and pre-requisites, as well as implementation of the CBD, and national and regional legal and institutional tools and regimes; conservation measures, looking at both area-based and species-based measures; use of biodiversity components; processes affecting biodiversity, focusing specifically on land management and global warming; biosecurity issues, including invasive species and genetically modified organisms; and access and benefit sharing from the utilization of genetic resources, focusing specifically on the situation in Antarctica and indigenous intellectual and cultural property rights.

While the co-editors, in their introduction, promise a discussion of biodiversity law and its linkage with sustainable cultures, by addressing poverty, food security, sustainable livelihoods, health, vulnerability to natural disasters, conflicts over shared natural resources and ecosystem services, the various contributions address this overall theme to different degrees, and as a whole to a limited extent. Notably, there is no contribution that specifically focuses on the CBD, Article 8(j) – the key provision that links biodiversity conservation and sustainable use to traditional knowledge, innovation and practices.

Nonetheless, the statement that was adopted by the final plenary of the colloquium (inserted at the beginning of the book) stresses that particular attention to the interests of minorities, indigenous and marginalized peoples should be paid by specialized legal, policy and institutional mechanisms to ensure that these groups have priority in [sharing] the benefits derived from the sustainable use of biodiversity. Regrettably, this central and certainly critical point in the current study and practice of biodiversity law is only addressed in few of the many contributions of the book. One of the few exceptions is the chapter on community-based biodiversity conservation in the Pacific, authored by then Ph.D. researcher Justine Rose, who delves into the legal complexities of common property resource governance, assesses experience gained in implementation, engages in comparative analysis, and concludes by offering thought-provoking recommendations on a critical tool for ensuring benefit sharing from biodiversity conservation to local communities.

Most of the contributions, however, limit themselves to scratching the surface of biodiversity law, particularly in the pieces devoted to the CBD itself. Relevant chapters provide an overview of recent developments without going into detailed analysis or without suggesting approaches to analysis that may advance the debate on the legal significance of, and the implementation gap affecting, the CBD. This may be a reflection of the complex and multi-pronged processes that are currently ongoing in the framework of the CBD, resulting in a plethora of decisions and guidelines that few commentators dare to systematize and comment upon. Even the Secretariat of the CBD has discontinued the publication of its *Handbook to the CBD*, which provided a synthetic guide to the myriad of decisions adopted by the CBD Conference of the Parties.

Overall, while the book under review certainly provides a very wide and diverse collection of views on biodiversity law at the international, regional and national level, it leaves the reader with the feeling, in most cases, of paging through presentation notes, rather than re-elaborated contributions that have benefitted from further reflection and from the exchange of ideas with fellow presenters at the conference. As a result, few profound insights are offered as to the legal complexity of linking biodiversity and livelihoods, with a view to

ensuring fair relationships between the North and the South.

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Legal Design of Carbon Capture and Storage: Developments in the Netherlands from an International and EU Perspective, edited by *Martha Roggenkanp* and *Edwin Woerdman*, published by Intersentia, 2009, 360pp, US$95.00, paperback.

Carbon capture and storage (sometimes also called 'carbon capture and sequestration' or 'CCS') is by many, including the EU, seen as an important part of the palette of instruments that needs to be employed if anthropogenic climate change is to be effectively limited. Within the EU, this has resulted in the adoption of Directive 2009/31/EC on the geological storage of carbon dioxide (the CCS Directive), which is to be implemented in the Member States' legal systems by 25 June 2011. This book is the result of a research project initiated by the Groningen Centre for Energy Law and carried out between late 2007 and the summer of 2009. The research was thus undertaken in parallel with the development of the CCS Directive and the book contains both some brief but informative notes on that development and rather extensive analyses of various parts of the directive as finally adopted. This makes it a timely and highly relevant publication. Drawing on the expertise of 16 authors, most of whom are well-qualified academics, contributing with a total of 13 chapters on different aspects of CCS, the book covers a broad range of issues including some not dealt with by the CCS Directive.

In addition to providing a basic introduction to the technological and related safety aspects of CCS, the book contains chapters analysing, for instance, the significance of public international law, the project-based Kyoto mechanisms and the European emissions trading scheme (ETS) for CCS. Some of the aspects addressed have been analysed before but many are complex and also in a state of flux, making additional contributions on these issues clearly welcome; not least when offered in such an accessible manner as here. Other pertinent branches of law whose impact on CCS is analysed are EC environmental and competition law. Individual chapters are dedicated to public and private law perspectives on pipelines for CO_2 transport as part of CCS and the regulation of underground storage of CO_2, as well as post-injection liability for onshore CO_2 storage. Whereas the chapter on the concept of third-party access to CCS infrastructure is expected and pertinent, chapters analysing how the national competent authorities prescribed by the directive ought to be set up and operate, as well as on the potential implications – positive and negative – of tax law on CCS, are perhaps less obvious but hardly less relevant.

The broad spectrum of issues covered and the generally well-informed and also clear and accessible manner in which they are dealt with add to the usefulness of the book. So does the informative introduction and the order in which the different topics are presented. Also informative are the comparisons between provisions in the CCS Directive and existing EC directives addressing issues relevant to some part of the CCS chain. However, in order not to be disappointed, the prospective reader should keep in mind the subtitle according to which it is 'developments in the Netherlands' that are at the core of this endeavour although they are – to varying degrees – seen 'from an international and EU perspective'. Some chapters, such as those on the impacts of tax law or on post-injection liability are strongly focused on Dutch conditions. This is perhaps inevitable since there is little in terms of international or EU law affecting these fields. In the future, one may wish for an attempt at a more comparative analysis of legal approaches to CCS in the EU. Admittedly, however, this may be more rewarding when the process of implementing the CCS Directive in domestic legal orders has progressed further.

The sections focusing on specific Dutch conditions or implementation of the directive in Dutch law are not without interest to readers in other countries, since many of the challenges faced will be the same or at least similar elsewhere. The Dutch perspective also colours some of the more general conclusions such as that implementation of central parts of the directive will take place by amendments to laws on oil and gas extraction. However, far from all European States have significant operations in these fields and correspondingly no developed legal framework for such activities. At times the reader may also be forgiven for getting the impression that little of significance was ever written outside the Netherlands, even on issues of European or international concern. Clearly, this is not a criticism that is valid for all chapters. A more integrated use of technical facts and knowledge in the legal analyses could have added value to the book. One is sometimes left wondering about the practical implications of, for example, volume thresholds for requiring an EIA – in other words, what kind of installations would be affected?

One issue that would have merited more attention is how the legal system can effectively be used to facilitate a timely, coordinated and economically efficient build-up of CCS infrastructure. Since the use of

CCS is not mandatory under EU law but is rather to be driven by economic rationality under the EU ETS and decisions by individual utilities and operators, there is likely to be a significant challenge in canvassing and coordinating the interests and resources of potentially concerned stakeholders. Alternatively, governments may have to play quite an active role, for example as providers of transport infrastructure. However, issues of coordinating and facilitating infrastructure build-up may become more pressing in countries or regions larger than the Netherlands.

The book neither has an index nor a bibliography. That is truly regrettable in a book which addresses complex operations affected by many legal acts and does so in a number of partly overlapping chapters. At least the final chapter provides a succinct and interesting summing up and some further reflections on the main points identified as legal challenges or uncertainties throughout the book.

To conclude, although the book is grounded in Dutch conditions it offers enough accessible explanation and thought-provoking analysis of common EU themes for it to become compulsory reading for anyone interested in CCS-related legislation in Europe and should definitely be so for those occupied with implementing the CCS Directive in the EU Member States.

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International Courts and Environmental Protection, by *Tim Stephens*, published by Cambridge University Press, 2009, 458pp, £60.00, hardback.

Tim Stephens' book *International Courts and Environmental Protection* marks a significant moment in the literature on the use of international judicial mechanisms in the field of the environment. As the commentary on the jacket observes, now more than ever judicial processes are among those that may be of vital importance for the protection of the environment. The book's style is direct, accessible and forward-looking. The text is thorough and thoughtful. This book would make a valuable acquisition both for individuals with an academic or practical interest and for law libraries.

There are three parts to the book. Part I situates the task of international adjudicatory bodies within the broad field of international environmental law. The author notes pithily that there is too much scepticism about the value of adjudicatory mechanisms. The case is advanced for giving a higher profile to international adjudication within the international environmental law regime, as adjudicatory processes may perform a function quite different to the function of the soft compliance mechanisms now characterizing many international environmental law treaties.

Part II of the book addresses, chapter by chapter, the three main areas in which dispute resolution through international adjudication has taken place within international environmental law: transboundary harm, international water law and the law relating to the protection of the marine environment. The book sets out to identify the underpinnings of the decisions addressed in each of these categories, their conceptual premises and the rationales informing the judicial reasoning in the cases. The *Trail Smelter* awards of 1938 and 1941 feature prominently within the chapter on transboundary harm, as well as the *Nuclear Tests Cases* of 1973 and 1974. In the chapter dealing with international water law we find the *River Oder Case* of 1929, the *Lac Lanoux Case* of 1957, the *Gabčíkovo-Nagymaros Case* of 1997, and the more recent *Case concerning Pulp Mills on the River Uruguay* in 2010. The chapter dealing with the protection of the marine environment looks initially at the *Bering Fur-Seal Arbitration* of 1893, moving through via the *Fisheries Jurisdiction Cases* (*United Kingdom v. Ireland*) (*Germany v. Ireland*) of the 1970s to more modern jurisprudence in the *Southern Bluefin Tuna* provisional measures order of 1999, the various decisions in the *MOX Plant* dispute, and the *Straits of Johor Case* which was settled in 2005. Analysing the impact of the decisions, the author uncovers three forms of impact. To begin with, the cases have articulated directly applicable principles and rules. Second, they have illustrated potential environmental problems, and a wider range of legal issues that may be implicated. The work carried out in deciding these cases projects forward in time, helping provide policy templates for assessing subsequent developments in international law. Third, the decisions have helped to highlight gaps in international environmental law, and to generate an understanding of the need to address these gaps.

Part III of the book addresses 'looming challenges' in international environmental law. To begin with, the book suggests a re-conceptualization of international public interest proceedings in the context of international environmental law. Even accepting that public interest actors may not have full standing in international dispute-resolution procedures, their participation may be valuable. A 'global environmental guardianship role' needs to be performed. The second challenge addressed by the book involves looking at the practical consequences of the 'patchwork of

jurisdiction' now existing internationally. The prospect of wholesale rationalization of competing bodies' jurisdictions is assessed as being a remote possibility. The author finds that the full suite of alternatives currently available to potential litigants is likely to remain so. Accordingly, steps towards the harmonious exercise of their jurisdiction by the various adjudicatory bodies are highly desirable, and a range of formal and informal coordination strategies should be increasingly employed.

Lastly, the book addresses a further challenge, also produced through the proliferation of international courts and tribunals. The issue here is the production of international environmental jurisprudence through the decision making of bodies whose primary task lies within a particular regime such as trade or human rights. Thus, the dispute-resolution mechanisms of the World Trade Organization have produced an impressive and complex body of case law with undeniable implications for environmental protection, while the United Nations Human Rights Committee, the European Court of Human Rights and the Inter-American Commission on Human Rights have produced case law at the intersection of human rights and environmental protection. While Stephens finds no indication that 'skewed' interpretations of environmental law have resulted, there remains scope for conflict between environmental goals and other goals in the future.

International Courts and Environmental Protection concludes that international environmental litigation is flourishing. This should not surprise us, given the momentum generated in the field of international environmental law in the past 40 years. However, Tim Stephens' book places a welcome accent on the importance of the judicial handling of difficulties arising in this field. Perhaps most significantly, he emphasizes that the international adjudicatory process operates at a programmatic level, helping to identify necessary and desirable directions for the future development of international environmental law. Dr Stephens' book should be read widely, both for its own sake and as a foundation for further work in the field of international adjudication and international environmental law.

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