Introduction

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Pollution does not recognise national borders. It may originate in one country and damage the environment in another. An oil spill in one State may affect the marine environment of its neighbours. Smoke haze from agricultural practices or other economic activities in one country may pollute the air in other countries. The pollution of an international river in an upstream country may reduce the water quality in downstream countries. The leaking of radioactive materials from a nuclear plant in one country may raise serious environmental concerns across the region.

As the international community has become more cognizant of the social and economic costs of transboundary pollution, it has sought to establish international legal principles to address the issue. The Trail Smelter arbitral tribunal in 1941 stated that ‘no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another’.\(^1\) Principle 21 of the 1972 Stockholm Declaration of the United Nations Conference on the Human Environment declared that States have ‘the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States’.\(^2\) The International Court of Justice confirmed that the obligation of States to ensure that their activities respect the environment of other States has become ‘part of the corpus of international law relating to the environment’.\(^3\) At issue is how this well-settled principle has been applied and what mechanisms have been

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developed to deal with specific types of transboundary pollution, including pollution of the marine environment and shared water resources, nuclear pollution and air pollution.

This book developed out of an international conference hosted by the Centre for International Law (CIL) at the National University of Singapore (NUS) in February 2014. The Conference brought together world leading scholars and experts on environmental law to engage in discourse and discussion on various aspects of transboundary pollution.

The book provides a comprehensive overview of the international legal principles governing transboundary pollution and examines the practical applications of the State responsibility doctrine in the context of transboundary pollution. It analyses the international legal framework that has developed to address all major types of transboundary pollution. The book also includes case studies of Asia and Southeast Asia to demonstrate how international law and policy governing transboundary pollution have evolved and have been applied in practice within a regional context.

The book consists of 13 chapters, which are organised into three parts. Part I examines ‘General Principles and State Responsibility’, Part II focuses on ‘Problems and Prospects’ and Part III addresses ‘Cooperative Mechanisms for Addressing Transboundary Pollution’.

In Part I on ‘General Principles and State Responsibility’, Chapter 1 by Catherine Redgwell charts the development of major customary law principles of international environmental law, providing a comprehensive overview of the general principles, policies and practices that govern transboundary pollution. It also reviews the lawmaking activities of the last decades that have resulted in a number of pollution-specific treaties, especially with regard to marine pollution and nuclear pollution. The chapter highlights the tension between the competing concepts of permanent sovereignty over natural resources and the common concern of transboundary environmental damage, but concludes that States have the obligation under international law to exercise due diligence to regulate and monitor activities within their territory, jurisdiction and control that may cause significant harm to other States.

Chapter 2 by Simon Tay looks at the challenges of applying general principles governing transboundary pollution in a global economy where countries are deeply interconnected both environmentally and economically. The chapter advances the argument that transboundary pollution should be seen not only through the lens of environmental harms that are traceable from one country to another but also through links of economic interdependence. It calls for global law approaches that include both State and non-State actors and argues that these emergent and innovative...
approaches should be applied to tackle the regional challenge of smoke haze from forest fires in Southeast Asia.

As Chapters 1 and 2 indicate, the legal requirements regarding State responsibility for transboundary pollution are well settled in international law. However, the limited number of cases on transboundary pollution that have been decided by international courts and tribunals leaves open many questions concerning the practical application of the State responsibility doctrine. Chapter 3 by Jacqueline Peel seeks to analyse the elements of a State responsibility claim for transboundary pollution, focusing on those elements that represent the most complex issues in practice. These include questions concerning how to attribute polluting actions of private entities to States, the level and content of a State’s obligation to act with ‘due diligence’ in preventing transboundary harm, and the methodologies to prove the causation of injury through transboundary pollution. The chapter draws on the example of transboundary air pollution to illustrate how these questions are applied in practice to the issue of how the emission of greenhouse gases contributes to climate change.

Part II examines in detail various specific transboundary pollution problems facing the international community today. Chapter 4 by Stephen C McCaffrey examines the problem of transboundary pollution of shared freshwater resources. His chapter discusses two international treaties that regulate the problem of transboundary water pollution. It also looks at major cases before international courts and tribunals and argues that these judicial decisions hold valuable lessons for governments regarding the use, protection and management of international watercourses. His careful examination highlights the emphasis that international law places on preventing pollution of international watercourses and protecting the aquatic ecosystem.

Chapter 5 by Lan Hua examines the use of Environment Impact Assessments (EIAs) in international treaties and case law as a means to prevent transboundary pollution of freshwater resources. In particular, the chapter comments on pollution control and environmental cooperation with respect to the Lancang-Mekong River and makes recommendations as to how EIAs can be utilised to protect shared freshwater resources.

Chapter 6 by Robert Beckman focuses on the problem of transboundary pollution of the marine environment. It offers a detailed analysis of the relevant substantive provisions and the dispute settlement mechanisms under the 1982 United Nations Convention on the Law of the Sea (UNCLOS). As the chapter forcefully demonstrates, UNCLOS treats transboundary marine pollution differently from other problems of transboundary pollution in three important respects. First, the principles and
provisions governing the protection of the marine environment are more specific than those in other areas. Second, the rules in UNCLOS on the responsibility of States for internationally wrongful acts give injured States the right to seek remedies to prevent transboundary pollution of the marine environment. Third, the dispute settlement regime in UNCLOS allows States to institute compulsory proceedings against other States and hold them accountable when they fail to meet these obligations.

Chapter 7 by Youna Lyons provides a case study of a particular instance of transboundary marine pollution, the 2009 Montara offshore oil spill in a field in the Timor Sea. In this chapter, Lyons investigates the transboundary nature of the oil spill and explores the ability and effectiveness of the administrative and legal mechanisms that were in place to deal with the event. The chapter draws attention to the gap that exists in the international regulatory regime for managing offshore oil and gas activities. It also offers a number of comments on the appropriate levels of oil spill preparedness, the response processes, and the funding mechanisms for clean-up activities and the payment of compensation.

Chapter 8 by Günther Handl examines the role of international law in establishing the normative foundation for transboundary nuclear pollution prevention, especially in the post-Fukushima period. Handl reviews transboundary nuclear risk management from the perspective of customary law and from the viewpoint of the international nuclear safety system. He discusses the complex legal issue raised by the ‘border siting’ of nuclear facilities whose emergency planning zones extend into neighbouring States’ territories. Finally, the chapter examines the challenges arising from the maritime transportation of radioactive materials through foreign States’ territorial seas. It suggests that the ‘notification without authorisation’ approach may be an acceptable compromise if appropriate safeguards are put in place. The chapter also argues for a more effective system of international safety review and recourse to third party dispute settlement in the event the concerned parties fail to reach a solution.

In Chapter 9, Alan Boyle addresses the international legal regime pertaining to transboundary air pollution and uses recent case law to illustrate the practical applications of the regime. The chapter suggests that interstate litigation can contribute effectively to addressing transboundary air pollution. It also examines transboundary air pollution within a broader regional context through the mechanism of evolutionary regimes of multilateral regulation exemplified by the 1979 Geneva Convention on Long-Range Transboundary Air Pollution and the 1991
United States-Canada Air Quality Agreement. The chapter raises interesting points of discussion in light of the increasing levels of emissions and fossil fuel consumption in China and India.

The book concludes with Part III on ‘Cooperative Mechanisms for Addressing Transboundary Pollution’. Chapter 10 by Hans Christian Bugge discusses the principle and duty of cooperation in international environmental law. The chapter presents some key points on the principle of cooperation, including its legal basis, content and application in practice. It also offers two examples of regional cooperation in Europe on the basis of framework conventions – the 1979 Convention on Long-Range Transboundary Air Pollution and the 1992 Convention for the Protection of the Marine Environment in the North-East Atlantic. The chapter concludes with a note on the lessons that may be learned from the operation of these European conventions by other regions in crafting cooperative mechanisms to respond to transboundary pollution.

Since 1991, haze has become a serious problem in Southeast Asia, with the main source coming from forest fires in Indonesia that have resulted from the agricultural practice of using fire to clear land. In response to this problem, the Association of Southeast Asian Nations (ASEAN) has adopted a number of soft law and hard law instruments, including in particular the 2002 ASEAN Agreement on Transboundary Haze Pollution (2002 ASEAN Haze Agreement). Chapter 11 by Laode M Syarif examines the various instruments that ASEAN has adopted and cooperative mechanisms that it has established to deal with regional transboundary haze pollution. In particular, Syarif’s chapter draws attention to the 2002 ASEAN Haze Agreement and various substantive and procedural provisions therein that may affect its effectiveness. The chapter also includes suggestions on the steps that countries in the region can take towards remedying the issue of transboundary air pollution through legal and political measures.

Chapter 12 by Alan Khee-Jin Tan further highlights the systemic weaknesses of the 2002 ASEAN Haze Agreement and numerous political and socio-economic factors within Indonesia that may constrain the effectiveness of the Agreement. His chapter then evaluates the promises and pitfalls of cooperative mechanisms that have been proposed to deal with the haze problem, including the proposal for Indonesia to share its palm oil plantation concession maps, a measure that would supposedly enable the perpetrators of the forest fires to be identified and prosecuted. The chapter argues that until the 2002 ASEAN Haze Agreement is fully implemented and concrete cooperation mechanisms are fully contemplated, regional States have limited options outside acting under existing
bilateral cooperative mechanisms or taking unilateral extraterritorial action against those entities and individuals involved in causing the forest fires.

Against this background, the last chapter by Nicholas A Robinson concludes the book by offering a comprehensive and integrated set of solutions to address the root causes of transboundary pollution in general and haze in particular. Assertions of State responsibility and political negotiations alone are not likely to end the air pollution because they address the haze only as a symptom and do not reach underlying causes. Even though Indonesia has ratified the 2002 ASEAN Haze Agreement, there would still be a need to use additional and complementary legal tools to avert new fires. Numerous alternatives to the setting of forest fires exist and could be pursued in mutually reinforcing ways. Indonesia, for example, could designate more of Sumatra and Kalimantan as world heritage areas and utilise cooperative mechanisms under the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Convention and the ASEAN Heritage Program for Protected Area Management to protect its natural peat forests. It could also work with other countries to develop a special programme under the Ramsar Convention on Wetlands of International Importance to identify and protect its coastal mangroves and inland peatland wetlands. The Convention on International Trade in Endangered Species of Wild Fauna and Flora, the Convention on Biological Diversity, the International Union for Conservation of Nature (IUCN) Commission on Protected Areas and the IUCN World Parks Congress and regional mechanisms at ASEAN also offer avenues for cooperation. Efforts could be made to strengthen the capacity of regional States to undertake EIAs. Other remedies include the Soils Charter adopted by the United Nations Food and Agricultural Organization (FAO) to end burning as a technique of forest clearing, the approach employed by the World Health Organization (WHO) to curb urban air pollution and the use of trade agreements to control the production of palm oil. Actions could also be taken under the ‘Reducing Emissions from Deforestation and Forest Degradation, Plus Conservation’ (REDD+) to preserve primary forests and peatlands. As it is not likely that these measures will be employed in Indonesia in the near future in a way that can effectively prevent the forest fires, donor States, regional States, their businesses, international organisations and NGOs could work with Indonesia to establish REDD+ investments in Kalimantan and Sumatra to push back against the commercial investors who seek to destroy forests and peatlands for palm oil plantations. Regionally, States can encourage their companies to support financially environmental projects in Sumatra. The chapter concludes that States...
have the capacity and authority – and the duty – to cooperate more holistically, to make it a common cause to protect and sustain the Earth, its people and its fragile ecosystems.