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A Word from the Editors

This issue of the eJournal is the first produced under the guidance of new Co-Editors. Professors Amanda Kennedy and Elizabeth Kirk stepped down as Co-Editors-in-Chief during 2015 and were replaced by Michaela Young, previously Managing Editor for the Journal, and Gay Morgan as the new Co-Editors. The role of Managing Editor is now in the hands of Dr. Opi Outhwaite. Thankfully, the Board was able to continue drawing on the assistance and expertise of Maria Marquès i Banqué in respect of Teaching Articles, Prof. David Hodas in respect of Book Reviews and Dr. Emma Lees and Dr. Kylie Lingard as Assistant Editors for Country Reports.

As the new Co-Editors we hope to grow and expand on the foundation laid by the previous Editors and the founders of the eJournal. We look forward to working with the Editorial Board on future issues of the eJournal.

This issue of the eJournal once again reflects a wide array of contributions from all over the globe and attests to the fact that environmental law and scholarship in this field continues to grow and develop. We are especially pleased that for the first time, this issue also features three Teaching Articles, which may serve as an inspiration for and a repository of information regarding the practice of teaching environmental law.

The first Teaching Article by Karen Bubna-Litic provides feedback on a 'Train the Trainers' project in the Asia-Pacific Region. This project was focused on teaching methodologies rather than building substantive content-driven knowledge amongst developing country scholars and teachers of environmental law. This contribution provides a useful record of the project and may inspire, and provide the basis for future training programmes in other regions of the globe.

The Teaching Article by Michelle Lim then focuses on a particular teaching method as a means of enriching and strengthening the student learning experience. Lim advocates for using qualitative scenarios in teaching environmental law. This teaching method entails the use of storylines which describe plausible futures with the intention of creating an opportunity for students to reflect on the extent to which existing laws and institutions are capable to bring about the future scenario.

The final Teaching Article by Paterson *et al.* provides information about a collaborative IUCN project which sought to enhance teaching and learning in the area of Protected Areas Law and Governance. The materials produced as part of this project include outlines, seminar presentations, exercises and short videos. These resources, which are freely available online, have the potential to enhance and develop teaching in this increasingly important field and the Editors hope that this contribution will draw the attention of many readers of this issue to this valuable resource.

This issue also presents five excellent substantive articles on an array of issues. Elizabeth Brandon tackles the problem of transboundary water pollution, with its effects on not only the environment of the polluting country but on those of downstream countries as well, endangering the health of many species. She looks at the problem in the context of Asia, in particular China, and the patchy framework of bilateral agreements governing incidents of Chinese pollutants affecting its neighbours' waters. She suggests the UN model used in the European context as a possible solution.

Mikiel Calleja and Simone Borg explore the possibilities for increasing the scope of green shareholding to encourage responsible investment, proposing the shareholders' limited liability be conditioned on their conduct vis-à-vis the environmental policies and conduct of the relevant corporation. Shareholders facilitating poor environmental stewardship, either through active support or apathy, would lose a measure of protection while those who promoted responsible corporate environmental policies would be favoured.

Evan Hamman, Katie Woolaston and Bridget Lewis wrestle with the knotty practical and moral issue of lethal management of endangered species which imperil human life, and how that problem might best be managed. They address this issue specifically in the context of shark attacks in Australia. They advocate that the considered use the precautionary principle can best guide the resolution of such conflicts. Their observations and analysis are usefully transferrable across jurisdictional lines, as many jurisdictions face this same issue of trying, as far as possible, to successfully protect the life interests of both.

Sarah Jackson presents a comparative analysis of the different sorts of approaches to 'Payments for Ecosystem Services' (PES). She explores the concept and then describes three different legal frameworks is use. She uses case studies from a variety of jurisdictions using PES to compare how these work, to show the fundamental differences in application and to highlight the differing incentives that result.

Claire Lajaunie and Pierre Mazzega trace the emergence and evolution of inclusion and consideration of human and animal health issues in a variety of international biodiversity conventions. They explain the convergence of concern about the interlinkages between biodiversity, ecosystem stability and infectious diseases which has led to a collaboration between the World Health Organisation and international environmental programmes

(United Nations Environment Programme and Convention on Biological Diversity, for example). They explain how this has led to a comprehensive concept of 'One Health' and the purposes that concept can serve.

This suite of substantive articles is followed by Lisa Benjamin's and Adelle Thomas's timely Insight Article on the Paris Climate Accords. They trace the thinking and strategies for the Alliance of Small Island States (AOSIS) to convince or to encourage the Paris parties to reduce the goal to limit global temperature rises to 1.5°C rather than the presumed 2°C, which is essential and not only for AOSIS members. They also raise the issue of responsibility of large emitters for harm to low lying states and how that constrains the agreements actually reached.

The issue then continues with 18 country reports from all regions of the world. A number of these reports capture developments in the climate change arena. For example, the U.S. country report *inter alia* delves into litigation on regulations that seek to limit greenhouse gas emissions and provides an analysis of the divisions in Congress that prevent more meaningful and effective environmental regulation in the United States. Climate change also remained on the agenda of other countries, including Taiwan, which recently enacted specific climate change legislation, and Australia. The latter report explores in particular the future of renewable energy in Australia and suggests a worrying trend in that targets for renewable energy production in the most recent iteration of Australia's climate change policies were lowered and notes with concern the conservative Nationally Determined Contribution communicated by Australia under the Paris Agreement. Along with Australia, promotion of renewable energy also featured on Nepal's agenda during 2015.

Linked with climate change is of course the issues of atmospheric pollution. This topic is explored in more detail in one of the China Country Reports (by Jinjing Zhao). The report reviews amendments to the existing legislation and concludes that while the amendments have brought about positive reform, many challenges remain.

A number of the Country Reports also evidence important developments regarding environmental provisions in the Constitutions of the relevant States. As evidenced by the Nepal Report, 2015 was an historic year for the country as it adopted a new Constitution. This Constitution now embraces a strong environmental right. In contrast, recent Constitutional reform in Armenia appears to have weakened environmental rights in that country.

Several country reports also devote attention to access to information, to legal standing, and to public participation. The Czech Republic Report provides an overview of crucial amendments to the law governing public participation and access to courts in the Environmental Impact Assessment context and the Australian report provides yet another worrying trend emerging from that jurisdiction in the form of attempts to limit legal standing in

the environmental context. In the Bahamas on the other hand, it seems that progress is being made in regard to access to information and public participation. Increasing attention is also being paid to implementation and enforcement issues, which are themes highlighted in the Italy and Thailand reports.

Highlighting the importance of water around the globe, three Country Reports in this issue deal with water-related issues. The Germany Report grapples with a question of principle, in particular, the non-regression principle, while the Mexico Report analyses a proposed new water law which is intended to improve water management. Finally, the New Zealand Report provides an account of recent case law regarding the allocation of water rights.

The importance of biodiversity protection is highlighted in the Country Reports from France, which grapples with the regulation of GMOs, and Ukraine, which provides a survey of Ukrainian law and implementation challenges faced there in regard to biodiversity protection. Finally, two of the reports pick up on developments in the marine context. The second China report provides an overview of the development of a Marine Spatial Planning Framework in China, and the Australian Report highlights domestic developments in the continuing whaling saga.

We see from these scholarly articles and reports that water quality and temperature, air quality and temperature, and the sustainable husbandry of water and water resources are fundamental issues for supporting biodiversity, as well as for better management of human interaction with ecosystems, both through infrastructure development and through 'harvesting' for food, for protecting other human interests in agriculture or for simple recreation. In essence, the issue reflects humanity's ongoing struggle to 'fit' as 'good citizens' in the global ecosphere, such that our fellow 'citizens' (plant and animal) may also continue to thrive.

The issue concludes with three Book Reviews by Burleson, Kotzé and Popattanachai. The books reviewed by the Burleson and Kotzé explore and investigate the evolving linkages between environmental issues and human rights, while Popattanachai has reviewed a timely and comprehensive handbook on the law of the sea.

Michaela Young & Gay Morgan

TRANSBOUNDARY WATER POLLUTION IN THE CONTEXT OF CHINA: A Role for the UNECE Industrial Accidents Convention in Asia?

Elizabeth J. Brandon*

Abstract

Using China as a key example, this contribution examines whether there is adequate legal provision in Asia for preventing and managing industrial accidents with transboundary effects, particularly those involving transboundary water pollution. If the existing regime of (mostly bilateral) measures among Asian countries is inadequate, the question is then asked as to whether the international framework developed by the United Nations Economic Commission for Europe (UNECE) for the transboundary effects of industrial accidents could offer an appropriate and feasible solution. To explore these questions in more detail, existing provisions for industrial accidents and transboundary water pollution are reviewed, with particular reference to China's arrangements with some of its neighbours. Salient features of the UNECE Convention on the Transboundary Effects of Industrial Accidents, and the potential benefits offered by membership in the Asian context, are identified. Finally, there is a discussion as to whether the Convention could be adopted by Asian countries, and the prospects for taking action on the issue of transboundary water pollution in the region.

Introduction

Water pollution caused by industrial facilities, whether major or minor in scale, is commonplace throughout the Asian region. Although some efforts have been made by governments in recent years to prevent them and deal with their after-effects, the appropriate management of industrial accidents remains a significant challenge. Given the many international rivers that dissect Asia and the expanding industrial development along some political borders within the region, industrial accidents with transboundary consequences are inevitable. This becomes readily apparent when the example of the Songhua River spill is examined, with its broad implications for the affected populations, for the surrounding environment, and for Chinese-Russian political relations.

The first key question that this article attempts to address is whether there is currently an adequate legal framework in place for the prevention and management of the

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transboundary impacts of industrial accidents in Asia. Given the limited scope here for investigating this issue for the whole of Asia, only a brief overview of existing legal frameworks is provided. However, to obtain a more useful insight, specific attention is paid to one Asian country that is particularly prone to major industrial accidents – China – and how it responds to the issue through cooperation with its neighbours.

The second key question to be posed by this article is whether - assuming that there are significant gaps in the existing regulation of transboundary industrial accidents in Asia - the agreement developed for similar purposes by the United Nations Economic Commission for Europe (UNECE) might offer Asian countries a means by which they could implement their own comprehensive laws, thus achieving greater consistency across the region. This question will be explored by examining the key features of the UNECE Convention on Transboundary Effects of Industrial Accidents, assessing its potential benefits and suitability for Asian countries, identifying potential hurdles, and explaining the current issue regarding non-UNECE membership of the Convention.

The structure of the article begins with an overview of an important transboundary industrial accident in China, and an explanation as to how this was, to some degree, a catalyst for efforts by China to formalise bilateral arrangements with some of its neighbours on the issue. There is a discussion as to whether these arrangements are adequate, and whether other parts of Asia have dealt with the issue in a similar way. This leads to a discussion as to why a regime for the prevention and management of transboundary industrial accidents (particularly those involving transboundary waters) is needed in China, and in Asia as a whole.

In the second half of the article, the background, key provisions and core obligations of the UNECE Convention on Transboundary Effects of Industrial Accidents are outlined. The potential benefits of the Convention for Asian countries, whether as a binding agreement or merely used as a benchmark, are explored. The technical issue of whether the Convention could be extended to Asian countries (most of which are not currently UNECE members) is identified, with reference to ongoing discussions over the possible opening-up of membership to the Convention. The existing role of the Convention in Central Asian countries is also briefly mentioned. Conclusions are then drawn as to whether it would be both advantageous and feasible for other Asian countries to make use of the Convention to improve regional regulation of transboundary industrial accidents.

I. Transboundary Industrial Accidents in Asia: Example of the Songhua River Spill

A decade ago, in late 2005, an explosion occurred at a petrochemical factory in Jilin, which is in northeastern China. The factory was owned by PetroChina, a subsidiary of the state-owned China National Petroleum Corporation. As a result of the explosion, several workers

were killed and a toxic mixture of benzene and other chemicals spilled into the nearby Songhua River. The 80-kilometre-long chemical plume was then carried downstream into the Amur River, which flows along the China-Russia border. For one week after the accident, local officials delayed notifying either the Central People's Government, governments of downstream provinces, the general public, or Russian authorities.[1] The water supply to Chinese cities along the Songhua and Amur rivers, including Harbin, was suspended for several days without any clear explanation to the local residents.[2] The chemicals eventually passed through the far eastern part of Russia known as Khabarovsk Krai, although by this time the Russian authorities had been alerted, mitigation measures had been implemented, and the toxicity of the plume had been somewhat reduced.[3]

The accident rapidly became the source of political tension between regional officials in China and Russia, primarily due to the considerable delay by China in notifying Russia of the spill, and due to the lack of specific information initially provided.[4] One Russian official initially threatened to pursue China in the international courts for compensation for cleanup costs, which were estimated at around USD$7 million.[5] Although the Chinese Government was subsequently able to diffuse this tension through diplomatic gestures and the provision of technical and economic assistance,[6] most of the associated costs could likely have been avoided if a clear framework had been in place to respond to the accident. As Qi Gao notes:

> *Although the mitigation measures seemed to be effective to a large extent, PetroChina […] and local government's initial attempt to cover up the [Songhua River] water pollution accident was strongly criticized both within and outside China. Lessons from this incident*

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[1] Qi Gao, A Procedural Framework for Transboundary Water Management in the Mekong River Basin: Shared Mekong for a Common Future (Martinus Nijhoff, 2014) 135.

[2] E Wishnick, 'Why a Strategic Partnership?' in J Bellacqua (ed), *The Future of China-Russia Relations* (University Press of Kentucky, 2010) 71.

[3] These impacts included contamination of the water supply and widespread fish deaths.

[4] Song Ying, 'International Legal Aspect of the Songhua River Incident', in MG Faure and Song Ying (eds), *China and International Environmental Liability: Legal Remedies for Transboundary Pollution* (Elgar, 2008) 315, 325.

[5] S Blagov, 'Damage Control for Russia and China after Chemical Spill', *China Environmental News Digest* (23 January 2006).

[6] Both China and Russia conducted large-scale construction works to divert the polluted water from Russian city water supplies; China also issued a formal apology and provided Russia with water testing kits and purification materials.

> *called for transparency regarding environmental emergencies and more stringent and accountable requirements for polluter and local government to report to relevant authorities.*[7]

Specific problems that were found to have exacerbated the Songhua River accident and a series of pollution incidents that followed in other Chinese rivers, included the failure to undertake a risk assessment to identify the source of pollutants, poor supervision of pollution sources and poor monitoring of water quality, and the lack of emergency and response planning for accidental pollutant releases.[8]

The problems inherent in the inadequate response by local officials to the Songhua River accident stemmed from broader, systemic problems with China's environmental regulatory framework at the time. These included weak local enforcement of environmental laws, lack of communication between government agencies and officials, and poor emergency response capabilities.[9] The widespread delegation of primary responsibility for water pollution control to local governments, and a lack of clarity as to the role of Central Government in such matters, only served to compound these problems.[10] A decade later, similar issues continue to hamper the Chinese Government's attempts to regulate environmental issues, although a nationwide campaign was announced in early 2014 to strengthen anti-pollution laws, to impose harsher penalties for relevant offences, and to empower officials to take action against polluters.[11]

A. The Legacy of the Songhua Spill

The high-profile Songhua River spill revealed the potential challenges posed by the transboundary impacts of industrial accidents, in the absence of a comprehensive regulatory regime to prevent and mitigate such impacts. Yet the petrochemical plant at the heart of the Jilin accident was just one of an estimated 2,000 industrial facilities located along the Songhua River, which has long been recognised as one of the most polluted waterways in

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[7] Qi Gao above (n. 1) at 135.

[8] Zhong Ma, 'Emergency Planning and Response for Accidental Release of Water Pollutants in China: Lessons from the Songhuajiang River Incident', *China: Addressing Water Scarcity,* Background Paper Series (World Bank Analytical and Advisory Assistance Program, 2007) 2.

[9] N Green, 'Positive Spillover? – Impact of the Songhua River Benzene Incident on China's Environmental Policy', *China Environment Forum* (The Wilson Center, 2009).

[10] Zhong Ma above (n. 8) at 3.

[11] T Branigan, 'Chinese Premier Declares War on Pollution in Economic Overhaul', *The Guardian* (5 March 2014).

China.[12] Despite some measures to address pollution of the river since 2005, the potential still exists for further accidents with similar transboundary consequences and this potential is not limited to the Songhua River.[13]

Several other transboundary rivers originate in China,[14] constituting a major source of water for many other countries in the region.[15] Not all of these rivers currently have major industrial facilities located along their banks and for this reason rivers in the relatively undeveloped western regions of China are generally found to be cleaner than those in the northeast region, which is known as the 'industrial cradle of China'.[16] However, industrial development along the 'cleaner' transboundary rivers is either already underway or very likely to occur in the future.[17] Three such examples are the intensive development planned for the Chinese section of the Irtysh River (upstream from Kazakhstan and Russia),[18] new infrastructure projects along the Upper Mekong River (upstream from Myanmar, Laos, Thailand, Cambodia and Vietnam)[19] and the 'Silk Road Economic Belt' development initiative proposed by the Chinese Government in 2013.[20]

A report by a team of experts from the United Nations Environment Programme, invited by the Chinese Government to investigate the Songhua River accident, provided

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[12] See LA Kirschner and EB Grandy, 'The Songhua River Spill: China's Pollution Crisis', *Natural Resources and Environment* (American Bar Association, 2006) 66-68.

[13] Another spill occurred in a tributary of the Songhua River in mid-2006, although it did not have any reported transboundary consequences.

[14] Including the Indus, Ganges, Brahmaputra, Irrawaddy, Salween, Mekong, Ob, Ili and Tumen Rivers: see S le Clue, 'Geopolitical Risks: Transboundary Rivers', *China Water Risk* (2012). <http://chinawaterrisk.org/resources/analysis-reviews/geopolitical-risks-transboundary-rivers/> accessed 31 July 2015.

[15] Pakistan, India, Nepal, Bangladesh, Burma, Laos, Thailand, Cambodia, Vietnam, Korea and Kazakhstan.

[16] Green above (n. 9).

[17] See for example, the discussion of the likely future development of the Mekong River region, in Qi Gao above (n. 1) at 130.

[18] K Muratshina, 'The Irtysh River in the Hydro Policy of Russia, Kazakhstan and China', Russian International Affairs Council (29 May 2012).

[19] Daming He *et al.*, 'China's Transboundary Waters: New Paradigms for Water and Ecological Security through Applied Ecology' (2014) 51 Journal of Applied Ecology 1159, 1163.

[20] Although much of the associated development may occur in northwestern China beyond the reach of any transboundary rivers, any industrial accidents that occur on the Tibetan Plateau could ultimately affect a number of downstream countries.

advice on measures that could be taken to prevent similar accidents in the future.[21] Noting that the Jilin explosion was 'of major transboundary and international significance', the report found that communication and sharing of information by the government with the affected public was inadequate at the early response stage.[22] It proposed a number of measures on awareness, preparedness and response to environmental emergencies, as part of a systemic approach to the problem.[23] Specific measures included the drawing up of contingency plans, application of methodological tools (such as the 'APELL' tool developed by UNEP[24]) and use of independent water sampling and analysis methods.[25] The UNEP recommendations were echoed by others, who called for the establishment of an effective emergency response mechanism for China's river basins as a matter of urgency and necessity.[26] According to one critic, too much of the authorities' attention was being directed to reactive measures such as accident control and remediation, instead of focusing on risk assessment and accident prevention.[27]

In addition to specific cooperative measures for management of the Songhua River, UNEP also recommended that an international body be established by the riparian countries of the broader Amur River Basin to oversee its 'sustainable development' as a whole.[28] The role of this international commission would be to facilitate joint monitoring and information sharing, to ensure the implementation of early warning and emergency response procedures and of relevant work programs, and to promote the use of risk inventories.[29] However, the recommendation by UNEP has yet to eventuate in any multilateral initiatives for the Amur

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[21] United Nations Environment Programme, 'The Songhua River Spill, China, December 2005 – Field Mission Report' (2005).

[22] Ibid.

[23] Ibid.

[24] Awareness and Preparedness for Emergencies at Local Level (APELL): United Nations Environment Programme, *Commemorating 25 Years of Awareness and Preparedness for Emergencies at Local Level: Achievements and Way Forward* (UNEP 2012) 4.

[25] United Nations Environment Programme above (n. 21).

[26] Zhong Ma above (n. 8) at 4.

[27] Ibid.

[28] UNEP above (n. 21) at 17. The riparian countries of the Amur River Basin include China, Russia, Mongolia and North Korea.

[29] Ibid.

River Basin, while China continues to prefer the use of bilateral arrangements with its neighbours for the management of its transboundary rivers.[30]

One outcome of the Songhua River accident was the formulation in early 2006 of a National Plan for Rapid Response to Environmental Accidents by the Chinese Government.[31] The National Plan sets out requirements for pollution source monitoring and control (including an online monitoring system for major pollution sources), risk analysis and evaluation, timely and accurate release of information in emergency situations and other procedures for domestic responses to emergencies.[32] According to Qi Gao, the National Plan is supported by the Emergency Response Law and Regulations on Government Information Disclosure, both of which were enacted by the Chinese Government in 2007.[33]

The Emergency Response Law requires the Chinese Government to cooperate and communicate with foreign governments and with relevant international organisations on emergency-related matters such as preventive measures, monitoring and surveillance operations, warning procedures, response actions, rehabilitation and reconstruction measures, and liability provisions.[34] The Emergency Response Law is quite detailed in allocating administrative responsibilities and setting out procedures to be followed, but none of these relate to interaction with foreign governments. The law contains no details as to exactly *how* China should 'cooperate with foreign governments' with regard to emergencies with potential transboundary effects. This appears to be based on the assumption that the matter will be addressed through bilateral agreements with China's neighbours or through informal channels.

B. Sino-Russian Cooperation on Emergency Preparedness and Transboundary Water Pollution

In addition to enhancing its domestic efforts to regulate major pollution incidents, China embarked on several new bilateral initiatives on transboundary water cooperation with Russia following the Songhua River accident. The first of these was the signing of a

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[30] For example, in 2001, China signed a bilateral agreement with Kazakhstan on the use and protection of transboundary rivers, and a similar intergovernmental agreement was signed with Russia in 2008 (the *Agreement on the Rational Utilization and Protection of Transboundary Waters*).

[31] Qi Gao above (n. 1) at 135; Zhong Ma above (n. 8).

[32] Qi Gao above (n. 1) at 135-136; Zhong Ma above (n. 8) at 4.

[33] Qi Gao above (n. 1) at 136.

[34] Art. 15, Emergency Response Law of the People's Republic of China (2007).

memorandum in early 2006 to undertake joint monitoring of transboundary waters.[35] This was soon followed by the issuing of a declaration acknowledging the need to intensify joint environmental protection efforts in their boundary areas, so as to prevent 'technogenic catastrophes' and to minimise harm to people and to the environment caused by both man-made and natural disasters.[36] China and Russia also signed a more formal instrument, the *Agreement on Cooperation in the Area of Prevention and Elimination of Emergency Situations*.[37] However, as Vinogradov and Wouters note, this agreement is limited in scope:

> *[T]he Agreement focuses primarily on preparedness and response, including conditions of mutual assistance, to all emergencies regardless of their place or impact. There is only one general reference to the transboundary aspect of emergency situations in the entire text.*[38]

Moreover, the 2006 Agreement has never entered into force. According to Vinogradov and Wouters, both this and the 2006 Joint Declaration appear to have been supplanted by two further bilateral initiatives in 2008, namely the China-Russia *Agreement on the Rational Utilization and Protection of Transboundary Waters* and an intergovernmental memorandum on early warning and information exchange for transboundary environmental emergencies.[39] The 2008 Agreement, which is essentially a framework document, contains provisions on transboundary emergencies, including the establishment of early warning systems and information exchange to prevent emergencies on transboundary waters.[40] It requires the Parties to immediately notify each other of any emergencies, to exchange any relevant information, and to undertake any necessary, reasonable measures to eliminate or mitigate

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[35] On 21 February 2006, China and Russia signed the *Memorandum on Joint Monitoring of the Sino-Russian Border Waters*: 'China and Russia Sign River Monitoring Pact', Environment News Service (21 February 2006).

[36] *Joint Declaration of the Russian Federation and the People's Republic of China* (Beijing, 21 March 2006), cited in S Vinogradov and P Wouters, 'Sino-Russian Transboundary Waters: A Legal Perspective on Cooperation' (Institute for Security and Development Policy, 2013) 31.

[37] Agreement between the Government of the Russian Federation and the Government of the People's Republic of China on Cooperation in the Area of Prevention and Elimination of Emergency Situations (21 March 2006).

[38] Vinogradov and Wouters above (n. 36) at 40.

[39] Memorandum between the Ministry of Natural Resources and Ecology of the Russian Federation and Ministry of the Environment of the People's Republic of China on the Establishment of the Mechanism of Early Warning and Exchange of Information in Cases of Transboundary Environmental Emergencies (12 November 2008); S Vinogradov and P Wouters above (n. 36) at 40.

[40] Art. 6 of the 2008 Agreement; Vinogradov and Wouters above (n. 36) at 40.

the effects of the emergency situation.[41] The informal memorandum, signed by the respective Ministries of the Environment, obliges China and Russia to warn each other promptly of any incidents involving releases of radioactive substances or of hazardous chemicals and of significant pollution of transboundary rivers or of the atmosphere.[42] However, the memorandum is neither legally binding nor detailed in its provisions.

On the face of it, these bilateral initiatives between China and Russia—as one example of China's efforts to regulate emergencies and their transboundary effects, particularly on rivers—seem to offer some regulatory elements of relevance to transboundary industrial accidents. However, upon closer inspection, most of the obligations of the Parties are only broadly worded, and the procedures to be followed are only laid out in basic terms. For example, the duty of notification in the 2008 Agreement merely requires the two Parties to inform one another, in accordance with 'previously agreed procedures', about any ongoing and planned measures on transboundary waters that 'may cause significant transboundary impact'.[43] It is doubtful whether such an obligation would extend to industrial accidents, given that they usually occur with little or no forewarning. The notification requirement in the informal 2008 memorandum, although specifically referring to significant transboundary pollution incidents, is not binding on either of the Parties.

The China-Russia bilateral agreements might be considered as perhaps the most comprehensive of all the transboundary water management regimes existing between China and its neighbours. Although China has shown a clear preference for bilateral (as distinct from trilateral or multilateral) cooperation on such issues, the actual procedural and substantive obligations included in the bilateral instruments have varied considerably. To illustrate these inconsistencies, some comparisons may be drawn between the China-Russia initiatives discussed above, and the agreements that have been made between China and two of its other northern neighbours, Kazakhstan and Mongolia.

C. Other Bilateral Initiatives by China with Neighbouring Countries

In 2001, China and Kazakhstan signed the Agreement on Cooperation in the Use and Protection of Transboundary Rivers.[44] A joint commission was also established by the two

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[41] Vinogradov and Wouters above (n. 36) at 40.

[42] Ibid.

[43] Art. 2, para 8 of the Agreement; cited in Vinogradov and Wouters above (n 36) 40.

[44] Agreement between the Government of the Republic of Kazakhstan and the Government of the People's Republic of China on Cooperation in the Field of Use and Protection of Transboundary Rivers (12 September 2001).

countries in 2003 to coordinate implementation of the agreement.[45] Although there are other bilateral agreements between China and Kazakhstan that relate to transboundary rivers, including one on emergency notification for natural disasters (2005)[46] and another on protection of water quality (2011),[47] there are none relating to industrial accidents. Issues relating to the water quality of transboundary rivers are addressed by the Kazakh-Chinese Commission on Cooperation in the Field of Environmental Protection, which has a working group on rapid response to disasters and pollution prevention.

The 2001 China-Kazakhstan Agreement imposes an obligation not to cause harm. It requires the Parties to undertake appropriate measures and 'make efforts to prevent or mitigate serious harm caused to a State Party as a result of […] man-made accidents'[48] A duty to cooperate on matters relating to the use and protection of their shared rivers is also contained in the Agreement, although industrial accident prevention is not specifically mentioned as one of the areas of cooperation.[49] These are only very broad obligations and do not offer any detailed guidance on procedures to be followed by either Party in the event of a major industrial accident affecting their transboundary rivers.

In a similarly general vein, yet using different wording, the 1994 China-Mongolia *Agreement on Protection and Utilization of Transboundary Waters* provides that the Parties 'shall take measures to prevent, mitigate and eliminate any possible harm to the quality, resources, physical trend and aquatic animals and plants of the transboundary waters caused by natural or human factors such as […] accidents in production.'[50] No details are provided regarding the appropriate harm prevention, mitigation or elimination measures to be taken by either Party, nor are there any definitions of the terms 'human factors' or 'accidents in production'. A *Memorandum of Understanding on Strengthening Cooperation on Trans-border Rivers*, signed by China and India in 2013, refers only fleetingly to the need to cooperate on 'emergency management' of trans-border rivers, without further explanation.[51]

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[45] The Joint Commission in the Field of Use and Protection of Transboundary Rivers, which has been part of the Kazakh-Chinese Cooperation Committee since October 2008.

[46] Agreement on Emergency Notification of the Parties of Natural Disasters on Transboundary Rivers

[47] Agreement on Protection of Water Quality of Transboundary Rivers (22 February 2011).

[48] Art. 3.

[49] Art. 2 and Art. 5.

[50] Art. 6.

[51] Ministry of External Affairs, Government of India, Memorandum of Understanding between the Ministry of Water Resources, the Republic of India and the Ministry of Water Resources, the People's Republic of China on Strengthening Cooperation on Trans-border Rivers (23 October 2013).

D. China's Bilateral Efforts: Conclusions

While it may be concluded that the China-Russia bilateral initiatives are indeed the most highly developed regime for transboundary water cooperation—when compared to other Chinese bilateral efforts on the issue—they can hardly be described as an unbridled success, particularly in terms of preventing transboundary pollution. As Vinogradov has noted, 'the ecological situation in the Sino-Russian transboundary basins is far from satisfactory. Pollution as a result of industrial accidents and wastewater discharges is a recurrent issue.' [52] The inconsistencies between the various bilateral agreements with China's northern neighbours also make it difficult to discern a consistent pattern of state practice, although the duties to cooperate and to avoid harm are clearly common to all of these agreements. If even China cannot achieve consistency in its transboundary water relations over a period of two decades, the prospects of other Asian countries being able to do so without any form of external guidance would appear slim.

China provides a useful illustration of the limits of cooperative efforts that have been made by some Asian countries to address certain aspects of the complex issue of transboundary waters. Other parts of Asia have attempted to cooperate on transboundary waters with even less success. For example, according to Ziganshina, '[a]lthough there are plenty of legal instruments at the bilateral, sub-basin, and basin levels governing the use and protection of shared watercourses in Central Asia, these agreements are in dire need of improvement as they fail to incorporate key principles of international water law and best management practices.'[53] With reference to the Aral Sea Basin, she observes that '[e]xisting legal arrangements in the basin were not designed to accommodate changing circumstances, nor can they be easily amended. As a result, many of these treaties have become stagnant and have lost their value.'[54]

Even if the bilateral efforts of China and its neighbours go some way to regulating transboundary water resources, they are largely inadequate for the purpose of industrial accident prevention and management. The latter purpose, to be fair, has not been the focal point of these bilateral relations, so it is perhaps unrealistic to expect anything more. Moreover, China has declined to make any agreements on transboundary water matters at

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[52] S Vinogradov, 'Can the Dragon and Bear Drink from the Same Well? Examining Sino-Russian Cooperation on Transboundary Rivers through a Legal Lens' (2013) 23:3 Journal of Water Law 95, 96.

[53] D Ziganshina, 'UN Watercourses Convention in Central Asia – The Current State and Future Outlook' (2014) International Water Law Project <http://www.internationalwaterlaw.org/> accessed 11 August 2015.

[54] Ibid.

all with its southern neighbours. Wouters has observed that 'issues remain, especially with respect to the transboundary waters shared across China's southern borders where there is an absence of treaty practice.'[55] This means that there is currently no regulatory framework in place regarding transboundary waters (much less industrial accidents on such waters) that flow from or through China to several south- and south-east Asian countries.

II. Why is a Regime for Transboundary Water Pollution Needed?

There are several reasons why the lack of provision for cooperation on transboundary accidents—whether via shared waterways, groundwater, soil or air—is problematic. First, when an accident occurs there is unlikely to be one single governmental authority designated to coordinate an effective response, but rather several different agencies attempting to respond without any clear delineation of their tasks. Second, where there is no specific obligation on the country in which the accident occurs to notify other potentially affected countries within a set timeframe, notification is likely to be delayed or otherwise inadequate, with perhaps only selected information being provided. Subsequent exchange of information may also be sporadic and deficient, making it difficult for affected countries to be fully apprised of the situation. Third, there is no clearly defined procedure to follow in the event of an industrial accident that could have transboundary impacts, so the countries involved have no detailed guidance as to how they should actually respond to such accidents or liaise with one another.

A. Fragmented Regulation

The nomination of a single authority as a 'contact point', an unequivocal obligation to notify and exchange information, and a clear procedure to follow for response measures, are all essential to effective cooperation on transboundary accidents. A lack of any of these elements could quickly result in confusion and panic among the local populace, and miscommunication between the relevant authorities and neighbouring countries. This could easily lead to delays in response times and inadequate mitigation or cleanup measures. As a result, the affected countries are likely to be ill-informed and ill-equipped to take appropriate measures, problems that will be compounded by a lack of financial capacity if the relevant government has not budgeted for such eventualities.

Similarly, in relation to accident prevention measures, there would be no detailed process to follow for countries wanting to minimise the risk of accidents occurring in the first place. As the prevention of industrial accidents is even more important than their mitigation,

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[55] P Wouters, 'The Yin and Yang of International Water Law: China's Transboundary Water Practice and the Changing Contours of State Sovereignty' (2014) 23:1 RECIEL 67, 73.

this should form a key component of any country's national risk management strategy. This is particularly crucial for those countries in Asia with significant financial constraints and limited technical resources that are most at risk from transboundary impacts of industrial accidents, such as countries located downstream from major development areas in China.[56] The health, environmental, social and economic costs are likely to be far greater when there is no consistent process to follow for accident prevention and mitigation measures than would be the case if a sound regulatory framework were already in place.

Another problem is that there is currently no clear allocation of liability for the transboundary impacts of industrial accidents in Asia.[57] The broad terms of bilateral agreements on water use and environmental cooperation refer only to a general duty not to cause harm to other countries, and there are no specific provisions on which country should bear the often high costs of dealing with the transboundary effects of an industrial accident, or how these costs should be shared between the relevant parties. The issue of liability is an important one, especially given the great disparity in wealth between countries in the Asian region. Even if the internationally recognised concept of 'polluter pays' is not the preferred approach among Asian countries, some kind of liability mechanism needs to be devised to ensure fairness and clarity of responsibilities in the event of transboundary industrial accidents.

China is a particularly significant example of the need for a regulatory framework for transboundary industrial accidents among Asian countries. Given its rapid industrialisation of certain areas close to international borders and the large number of development projects it has been initiating (e.g. the 'Silk Road Economic Belt' initiative) which may have transboundary impacts if something goes wrong, China needs to give urgent consideration to the issue. As He et al observe:

> *Sharing 110 international rivers and lakes along its southwest, northwest, and northeast borders and being home to most of Asia's great rivers that flow into 18 downstream countries […], China is the most important upstream country for transboundary water and ecological security in Asia.*[58]

This is echoed by Varis et al: 'the upstream parts of several major Asian transboundary river basins […] are in China's territory, making China's water sector stresses and activities

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[56] For example, the downstream Mekong River countries of Myanmar, Laos, Thailand and Cambodia.

[57] Muratshina above (n. 18).

[58] See He *et al* above (n. 19).

particularly relevant to its neighbours.'[59] According to Wouters, more than half of the world's population live in regions dependent upon Chinese transboundary waters.[60]

B. Lack of Available Alternative International Remedies for Waterways Accidents

Against this background of regulatory insufficiency, it is important to note that China is not a signatory to the UNECE's Convention on the Protection and Use of Transboundary Watercourses and Lakes (1992) (also known as the 'Helsinki Convention'), which is open to membership by any country. This is partly attributable to China's traditional preference for addressing transboundary issues bilaterally, whether through formal treaty arrangements or 'softer' diplomatic manoeuvres. It may also be attributed to China's insistence on its sovereign rights over the transboundary waters in which it has a share, although it does appear to recognise the rights of other adjacent countries in the same waters and the duty to cooperate on relevant matters.

Therefore, if China were to experience another large-scale Songhua River-type incident with transboundary implications—which is only a matter of time—there would be no remedy available to any of its neighbouring countries under the Helsinki Convention or the Industrial Accidents Convention. Instead, once again China would likely respond through diplomatic channels and make offers of aid or compensation; it may even be prompted to enhance its bilateral arrangements with the affected country or countries. However, these measures would probably be short-term or limited in scope, rather than introducing a comprehensive framework for transboundary accident management.

Wouters contends that, '[c]oupled with its growing emergence on the world stage, the time has now come for China to demonstrate its meaningful commitment to regional peace, security and prosperity through its State practice related to its transboundary water resources.'[61] Similarly, it is in the interests of the region as a whole that China shows

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[59] O Varis *et al*, 'China's Stressed Waters: Societal and Environmental Vulnerability in China's Internal and Transboundary River Systems' (2014) 53 Applied Geography 105, 106.

[60] Wouters above (n. 55) at 74.

[61] Ibid, 75. Wouters also advocates the future 'consolidation' by China of its approach to transboundary water cooperation, particularly through ratification of relevant multilateral agreements, such as the 1997 United Nations *Convention on the Law of the Non-Navigational Uses of International Watercourses*, New York, 21 May 1997, 51st Sess., General Assembly of the United Nations, UNGA Res. A/RES/51/229 (entered into force 17 August 2014) and the 1992 UNECE *Convention on the Protection and Use of Transboundary Watercourses and International Lakes*, adopted 17 March 1992, 1936 UNTS 269 (entered into force 6 October 1996); P Wouters, 'Considering China's Approach to the UN Watercourses Convention – Time to Revisit?', International

leadership in matters of industrial accident prevention and management, as it could not only raise awareness among other Asian countries but persuade them to make a commitment also. The combined efforts of China and its neighbours in this regard would be a major improvement to regional security, minimising unnecessary conflict caused by the health, environmental and economic impacts of industrial accidents.

C. Significant Risks

The major explosions that occurred in the north-eastern Chinese port city of Tianjin on 12 August 2015 not only killed and injured hundreds of people, but released highly toxic chemicals into the air, water and soil, with local, regional and potentially transboundary impacts.[62] In the days following the incident, authorities predicted the resulting air pollution would be blown eastwards towards the Bohai Sea and the neighbouring countries of South Korea and North Korea, although past research has already shown that airborne pollutants from China can travel as far as North America.[63] In 2013, a pipeline explosion at an oil refinery in another port city, Qingdao, likewise resulted in many deaths.[64]

Although neither of these incidents have yet been shown to have transboundary effects—and raise other issues of storage, handling and transportation of hazardous substances—a similar incident occurring close to an inland political border or transboundary river could clearly have such far-reaching effects. The prevalence of major industrial accidents, wherever they occur, is a cause for great concern and even more so when they could threaten regional stability due to possible transboundary impacts. A transboundary

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Water Law Project Blog (28 July 2014). She urges the Chinese Government to develop more detailed substantive and procedural rules for water pollution as part of its broader 'War on Pollution'.

[62] According to official data, 173 people were killed and several hundred injured in the explosions. The chemicals, which were located in a dangerous goods storage facility near a residential area at the time, are thought to have included toluene diisocyanate, at least 700 tonnes of sodium cyanide, and calcium carbide: 'Authorities Yet to Identify Warehouse Contents but Greenpeace Warns of Health Risks from a Chemical Blaze', *South China Morning Post* (14 August 2015); 'Public Anger Grows as China Confirms Hundreds of Tonnes of Cyanide Were Held at Blast-Hit Port of Tianjin', *South China Morning Post* (17 August 2015).

[63] 'China Exports Pollution to U.S., Study Finds', *New York Times* (20 January 2014).

[64] The explosion occurred on 22 November 2013, when an underground oil pipeline ruptured, leaking oil into the ground and nearby sea, which subsequently caught fire. It killed at least 62 people: 'Death Toll from Qingdao Pipeline Explosion Rises to 62', *South China Morning Post* (4 December 2013).

industrial accident can easily exacerbate regional instability, particularly if the countries involved 'have overlays of past conflicts, cultural differences, or ongoing tensions'[65]

Of course, the challenge of regulating transboundary industrial accidents is by no means confined to China, as the potential for such accidents is certainly present in many other parts of Asia. For example, the 1984 gas leak that occurred at a pesticide factory in Bhopal, India, may be the world's worst industrial accident, although it did not have any known transboundary effects.[66] It is also clear, however, that 'the potential effects of industrial accidents are not limited by borders between countries or regions.'[67] The countries at highest risk are those undergoing rapid development in the absence of stringent health, safety and environmental regulations, and those downstream or directly adjacent to heavily industrialised areas. Other downstream or neighbouring countries also face some degree of risk from transboundary accidents, even if it is reduced somewhat by distance or other factors. The lack of a regulatory regime on transboundary industrial accidents could therefore leave many Asian countries vulnerable to transboundary industrial accidents like the Songhua River spill.

In addition to industrial facilities potentially affecting transboundary waterways, there are clearly risks posed by other industrial facilities that are located near political borders, as well as infrastructure projects (such as transboundary pipelines) that straddle these borders. According to Kasperson and Kasperson,

> *Hazardous facilities may be intentionally located at the edges of political jurisdictions, either to export the risk to others […], to capitalize on more permissive safety standards in an adjoining political system, or to exploit margins and peripheral regions because they are viewed as expendable and of little importance to political elites and central authorities.*[68]

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[65] JX Kasperson and RE Kasperson, 'Border Crossings', in J Linnerooth-Bayer and G Sjostedt (eds), *Transboundary Risk Management* (Routledge, 2010) 207, 211.

[66] The leak of a toxic chemical, methyl isocyanate, from a Union Carbide facility is believed to have killed thousands of people and injured many more: 'Bhopal Trial: Eight Convicted Over India Gas Disaster', BBC News (7 June 2010). The UNECE recognised the broad significance of the Bhopal disaster for the Industrial Accidents Convention in 2014: '30 years after Bhopal: UNECE countries meet to enhance industrial safety and transboundary cooperation', 26 November 2014. <http://www.unece.org/index.php?id=37492> accessed 17 August 2015.

[67] UNECE, Opening of the Convention on the Transboundary Effects of Industrial Accidents for Accession by United Nations Member States beyond the Economic Commission for Europe Region – Considerations and Options with regard to a Possible Amendment (Doc. ECE/CP.TEIA/2014/6, 4, 18 September 2014).

[68] Kasperson and Kasperson above (n. 65) at 210.

Pollution from industrial accidents at such facilities may be carried across borders through groundwater, soil or air.[69] Negative impacts from pollution migrating across borders in this way may occur more slowly and be more difficult to detect and respond to, as they are likely to be less obvious than those caused by river pollution. However, they may be no less toxic and harmful to the neighbouring country, particularly if they go unnoticed for an extended time. It is therefore equally important to have a sound management system in place to prevent and minimise the transboundary effects of all industrial facilities, regardless of whether they are situated on waterways.

III. The UNECE Framework for Transboundary Industrial Accidents as a Possible Model

Fortunately, all the elements of a strong, comprehensive framework for preventing and managing transboundary industrial accidents – including those involving waterways – have already been identified and formulated in the context of Europe, and are readily available to the international community for reference. The United Nations Economic Commission for Europe (UNECE) has developed a specific regulatory regime for its member countries, in the form of its *Convention on the Transboundary Effects of Industrial Accidents* (Industrial Accidents Convention).[70] Adopted at the same time as the UNECE *Convention on the Protection and Use of Transboundary Watercourses and Lakes* (Water Convention),[71] the rationale was that major industrial accidents could have far-reaching transboundary impacts, including pollution of shared waterways, so these linked issues should be addressed simultaneously. The UNECE had been spurred into action by high-profile major industrial accidents in Europe and the former USSR in the 1970s and 1980s.[72]

Another major industrial accident occurred in Baia Mare, Romania, shortly before the Industrial Accidents Convention entered into force in 2000. The impacts of the Baia Mare

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[69] An example of transboundary pollution occurring over a long period, rather than from a single incident, is the air pollution generated by a zinc smelter in Trail, British Columbia, Canada, which was carried across the border to Washington State, United States, giving rise to a well-known international arbitration case in the 1940s: *Trail Smelter Arbitration (United States v. Canada)*, Arbitral Trib., 3 UN Rep. Int'l Arb. Awards 1905 (1941).

[70] Helsinki, 17 March 1992, 2105 UNTS 457; in force 19 April 2000. There are currently 41 Parties to the Convention. Although the United States and Canada are both signatories, they have yet to ratify it.

[71] Helsinki, 17 March 1992, 31 ILM (1992) 1312; in force 6 October 1996.

[72] Namely, the chemical manufacturing accident near Seveso, Italy (1976), the agrochemical warehouse fire near Basel, Switzerland (1986), and the Chernobyl nuclear disaster in Ukraine (also in 1986).

cyanide spill on downstream countries[73] revealed a significant gap in international law at the time, as no mechanism existed for allocating liability and providing compensation for the transboundary effects of industrial accidents.[74] This realisation within the UNECE prompted negotiations for a new *Protocol on Civil Liability and Compensation for Damage Caused by the Transboundary Effects of Industrial Accidents on Transboundary Waters* (Civil Liability Protocol), which was subsequently adopted in 2003, although it has yet to enter into force.[75]

A. Objectives and Scope of the Convention

The key purpose of the Industrial Accidents Convention is to protect people and the environment from the effects of industrial accidents through appropriate prevention, preparedness and response measures.[76] To this end, it emphasises the need for proactive international cooperation between Parties before, during and after the occurrence of any industrial accidents with potential transboundary impacts. The Convention applies to 'industrial accidents capable of causing transboundary effects', including accidents caused by natural disasters, but it does not extend to nuclear or military accidents, dam failures, land-based transportation accidents, accidental GMO releases, or marine accidents.[77] An 'industrial accident' is defined as 'an event resulting from an uncontrolled development in the course of any activity involving hazardous substances'.[78] 'Effects' are defined broadly, as 'any direct or indirect, immediate or delayed adverse consequences caused by an industrial accident' on humans, flora, fauna, soil, water, air, landscape, material assets or cultural heritage.[79] The term 'transboundary effects' refers to 'serious effects within the jurisdiction of a Party as the result of an industrial accident occurring within the jurisdiction of another Party'.

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[73] Primarily Hungary, but also Ukraine, Serbia and Bulgaria.

[74] See M Pallemaerts, 'Study on National Legislation Needed to Implement the Protocol on Civil Liability and Compensation for Damage Caused by the Transboundary Effects of Industrial Accidents on Transboundary Waters' (Institute for European Environmental Policy, undated) 2.

[75] Kiev, 21 May 2003. The Protocol is a joint instrument to both the Water Convention and the Industrial Accidents Convention. Twenty-four countries have signed the Protocol to date, but only Hungary has ratified it.

[76] Preamble to the Convention.

[77] Art. 2 of the Convention. Most of these categories are already covered by other multilateral instruments.

[78] Art. 1(a); the threshold limits for relevant hazardous substances are specified in Annex I.

[79] Art. 1(c).

B. Key Provisions of the Convention

The Convention contains both general and more specific obligations. Article 3 imposes general duties on Parties to cooperate with one another to achieve the aims of the Convention, to take appropriate measures to prevent, mitigate and respond to industrial accidents and to reduce the risks associated with such accidents.[80] There is also a duty to ensure that industrial facility operators are required to take all necessary measures for the safe performance of hazardous activities and the prevention of industrial accidents.[81] Other broad obligations under the Convention, which are commonly found in other international environmental agreements, include the requirement to undertake research and development on methods and technologies for prevention, preparedness and response, [82] and to exchange information and technical expertise with other Parties.[83]

Specific obligations in the Convention include the requirement on Parties to identify all existing and proposed hazardous activities within their jurisdiction, as well as to notify and consult with any potentially affected Parties in accordance with the correct procedure.[84] Other specific obligations include the need to take appropriate prevention measures,[85] to integrate risk reduction into the planning approval process,[86] to maintain an adequate level of emergency preparedness,[87] to prepare (and, if necessary, to implement) on-site and off-site contingency plans,[88] to provide adequate information to the public in potentially affected areas and to allow for public participation.[89] Parties must also take adequate response measures as soon as possible after an accident (or wherever there is an imminent threat of one), using the most efficient practices to contain and minimise adverse effects.[90] Any Party needing assistance from others to respond to an accident may request it.[91]

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[80] Art. 3(1) and Art. 3(2).

[81] Art. 3(3).

[82] Art. 14.

[83] Art. 15 and Art. 16 respectively.

[84] Art. 4(1) and Art. 4(3).

[85] Art. 6(1).

[86] Art. 7.

[87] Art. 8(1).

[88] Art. 8(2) and Art. 8(3). Other potentially affected Parties must be informed and consulted on these contingency plans, which must also be kept regularly updated.

[89] Art. 9(1) and Art. 9(2).

[90] Art. 11(1). Where there are two or more affected Parties, they should conduct a joint assessment of the effects and coordinate their responses to the accident: Art. 11(2).

[91] Art. 12(1); this is known as a request for 'mutual assistance'.

Notification and consultation between Parties are key themes of the Industrial Accidents Convention. The purpose of the Industrial Accident Notification System (IANS), which was established under the Convention, is to ensure that all potentially affected Parties are promptly notified and adequately informed in the event of an industrial accident. All Parties must establish and maintain 'compatible and efficient' IANS at the appropriate levels, to ensure that responses to accidents are swift, smoothly coordinated and as well informed as possible.[92] Importantly, each Party must designate at least one competent authority to oversee implementation of the Convention at the national level,[93] as well as designate a national point of contact for all industrial accident notifications and mutual assistance requests.[94]

C. The Civil Liability Protocol to the Convention

Although the Civil Liability Protocol is yet to enter into force, some of its most distinctive features should be noted. The key aim of the Civil Liability Protocol is to ensure that adequate and prompt compensation is provided for damage caused by the transboundary effects of industrial accidents on transboundary waters.[95] The Protocol expressly endorses the 'polluter pays principle' by imposing strict liability on operators of industrial facilities for damage caused by accidents,[96] a provision which is intended to encourage them to minimise operational risks. Fault-based liability is also possible under the Protocol, making 'any person' liable for damage they have caused or contributed to by their wrongful, intentional, reckless or negligent acts or omissions.[97] Operators of industrial facilities must obtain adequate insurance to cover their liability risks.[98] In the event of an industrial accident, they are required to take 'all reasonable response measures'.[99] Individuals and entities affected

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[92] Art. 10(1).

[93] Art. 17(1).

[94] Art. 17(2). The competent authorities and points of contact must remain fully operational at all times, and their details must be provided to the other Parties and the Convention Secretariat and kept regularly updated: Art. 17(5), Art. 17(6) and Art. 17(3) respectively.

[95] Art. 1.

[96] Preamble and Art. 4(1).

[97] Art. 5.

[98] Art. 11.

[99] Art. 6(1).

by industrial accidents can seek compensation from any or all of the relevant operators under the joint and several liability provision of the Protocol.[100]

D. What Could the UNECE Framework Offer to Asia?

The potential benefits for non-UNECE countries of the framework created by the Industrial Accidents Convention have already been recognised by the UNECE, albeit not specifically in the Asian context.[101] These benefits include better protection of humans and the environment from the transboundary effects of industrial accidents, as well as improved standards of industrial safety, greater investment in safer technologies and a higher rate of economic development.[102] Other benefits could include improvements to institutional, administrative and legal frameworks for accident prevention and response measures, not only in relation to transboundary effects but also in relation to local, regional and national impacts.[103] Enhanced cooperation between national authorities, industry, civil society and the public, and greater cooperation between neighbouring countries on industrial accident matters are other key drawcards.[104]

Furthermore, the Convention would provide unique opportunities for exchange of information, experiences and good practices,[105] enabling Parties to learn about both 'tried and tested' methods and novel approaches to resolving complex issues.[106] As Vinogradov and Wouters note more generally,

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[100] Art. 4(4). 'Damage' is defined broadly, and includes loss of life or personal injury, property loss or damage, economic loss resulting directly from the impairment of a legally protected interest, reinstatement costs, and the costs of response measures: Art. 2(2)(d).

[101] UNECE, Opening of the Convention on the Transboundary Effects of Industrial Accidents for Accession by United Nations Member States beyond the Economic Commission for Europe Region – Considerations and Options with regard to a Possible Amendment (Doc. ECE/CP.TEIA/2014/6, 18 September 2014) 4.

[102] Ibid, 4-5.

[103] L Wyrowski, 'Benefits of and National Legislation and Authorities for UNECE Convention on the Transboundary Effects of Industrial Accidents', Presentation to the Joint Seminar on the Espoo Convention and Industrial Accidents Convention, Ashgabat, Turkmenistan, 5-6 June 2011; UNECE above (n. 101) at 5 & 14.

[104] UNECE above (n. 101) at 5 & 14.

[105] For example, through meetings of its subsidiary bodies and technical workshops and seminars at the national and sub-regional levels; ibid, 6 & 14.

[106] Wyrowski above (n. 103).

> *[w]hen joining an international regime states do not simply become the addressees of certain rights and obligations; they take advantage of the accumulated expertise and readily available institutional mechanisms as the best means of avoiding and disarming potential conflicts.*[107]

Importantly for many Asian countries, Parties with very limited resources may also be eligible for financial and technical assistance to help them implement their obligations under the Convention.[108] Some of the Eurasian countries that are existing UNECE members - namely, Azerbaijan, Kyrgyzstan, Turkmenistan - are already beneficiaries of such assistance, for the purpose of helping them either accede to and/or implement the Convention at the national level.[109]

As can be seen from the Songhua River example discussed earlier, the Asian region is by no means immune to the threat of transboundary industrial accidents. By contrast, it is likely to be increasingly susceptible to them as long as the process of rapid development continues unchecked along the shared borders and the transboundary waterways upon which many millions of inhabitants depend for their daily living. Yet, as Adeola observes:

> *…Parties to the Convention on the Transboundary Effects of Industrial Accidents are exclusively from industrialized nations of the Global North …Conspicuously absent are the members of underdeveloped and developing societies of the Global South. India and China which have both experienced one of the worst industrial disasters in history are not Parties to the Convention.*[110]

Although membership of the Industrial Accidents Convention is not currently open to non-UNECE member countries, thereby preventing accession by most Asian countries, this is unlikely to be the only perceived impediment to Asian participation. The often-cited preference by many Asian countries for bilateral rather than multilateral cooperation generally [111] and for 'soft law' measures rather than binding legal instruments on

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[107] Vinogradov and Wouters above (n. 36) at 58.

[108] Through the Assistance Programme established under the auspices of the Convention.

[109] For example, UNECE, Report of the Conference of the Parties on its Eighth Meeting, 8th Meeting of Conference of the Parties to the Convention on the Transboundary Effects of Industrial Accidents, Geneva, 3-5 December 2014 (Doc. ECE/CP.TEIA/30, 27 April 2015) 5-6.

[110] FO Adeola, Industrial Disasters, Toxic Waste, and Community Impact: Health Effects and Environmental Justice Struggles Around the Globe (Lexington Books, 2012) 217.

[111] For example, Vinogradov and Wouters above (n. 36) at 58; K Uprety, 'A South Asian Perspective on the UN Watercourses Convention' (International Water Law Project, 2014). <http://www.internationalwaterlaw.org/> accessed 11 August 2015.

environmental issues, may seem to preclude any likelihood that the Industrial Accidents Convention would be viewed favourably in the region. However, the Convention should be regarded as complementary to existing bilateral agreements, rather than as undermining or replacing them. As such, it would be able to fill an important existing gap by providing an overarching framework for regional cooperation on transboundary industrial accidents. This is a key role which would help to ensure consistency between countries on this issue and to provide adequate protection for people and the environment in the region.

E. Could the Industrial Accidents Convention be Extended to Non-UNECE Asian Countries?

Recognising that the Industrial Accidents Convention could offer key advantages to non-UNECE countries, and thus play a major role in reducing the risks associated with transboundary industrial accidents across the world, the UNECE has been considering a proposal to open up membership of the Convention over recent years.[112] Open accession has already been achieved for other key UNECE environmental agreements over the previous decade, heralding a new role for UNECE in the broader international community.[113] The idea was first raised formally at the 7th Conference of the Parties to the Industrial Accidents Convention in 2012.[114] The general reaction of the Convention Parties was somewhat cautious, but the Working Group on the Development of the Convention was requested to evaluate the possibility further.[115]

A detailed report on the advantages and disadvantages of opening up the Convention was considered at the 8th Conference of the Parties in 2014.[116] Several Parties expressed their support for the idea, while others were concerned about the budgetary implications.[117] Given the mixed response, the Working Group was asked to 'continue thoroughly considering all aspects related to the opening of the Convention, including possible budgetary implications and to present the outcome of its considerations' at the

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[112] This would involve amending Art. 29 of the Convention.

[113] Namely, the 1991 Convention on Environmental Impact Assessment in a Transboundary Context, 1989 UNTS 309 (amended for open membership in 2001; amendment entered into force in 2014) and the Water Convention (amended for open membership in 2003; amendment entered into force in 2014). The 1998 UNECE Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, 2161 UNTS 447, together with three UNECE Protocols, have been open to all United Nations member states since they were first adopted.

[114] UNECE, Report of the Conference of the Parties on its Seventh Meeting, Stockholm, 14-16 November 2012 (Doc. ECE/CP.TEIA/24, 7 January 2013).

[115] Ibid, para. 66(g).

[116] UNECE above (n. 101).

[117] UNECE above (n. 109).

Ninth Conference of the Parties in 2016. By mid-2015, the Working Group had formulated the draft text for a proposed amendment to the Convention facilitating accession by non-UNECE countries.[118] Although it may be some time before a formal decision is made to adopt such an amendment, there is a distinct possibility that accession to the Industrial Accidents Convention will be opened up to the rest of the world in coming years.

F. Feasibility of Ratification for Asian Countries

Although the limited scope of this article precludes a more detailed analysis of existing relevant laws in all Asian countries, it is prudent to ask whether they would be in a position to ratify the Industrial Accidents Convention should the opportunity arise in the future. Looking at the example of China, the question is whether there are sufficient domestic legal provisions in place, or at least in progress, to enable its Government to consider ratification. While it is, of course, difficult to determine what is 'sufficient', it is possible to compare China's main provisions on emergency preparedness and response measures briefly with the key provisions of the Convention.

The quite detailed measures in China's Emergency Response Law (2007) for emergency prevention, preparedness and response correspond to some degree with the duty in Article 3 of the Industrial Accidents Convention to take appropriate measures to prevent, mitigate and respond to industrial accidents with potential transboundary effects (for example, Chapters II, III and IV). Articles 20 and 23 of the Emergency Response Law impose obligations for the identification of (and specific planning for) certain hazardous sites and activities, somewhat similarly to Article 4 of the Convention, although the latter additionally requires affected States to be notified of such sites.

Articles 10, 20 and 44 of the Emergency Response Law contain limited provisions for notifying and informing the public regarding hazards and accidents, which are not as comprehensive as Article 9 of the Convention. The latter imposes an obligation on governments to not only consult with their own public – actively seeking their views and participation – but also to inform and to involve populations in other affected countries. Neither of these appear to be required under China's Emergency Response Law, although it could be amended to allow for that if the Chinese Government were to adopt a more favourable attitude towards public participation in the future.

Another comparison that can be drawn is between the requirement to designate 'one or more competent authorities' within each country to coordinate all of its accident

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[118] Working Group on the Development of the Convention, Options for an Amendment to the Convention on the Transboundary Effects of Industrial Accidents, Fifth Meeting of the Working Group, Geneva, 11-13 May 2015 (Doc. ECE/CP.TEIA/WG.1/2015/4) 13.

prevention, preparedness and response measures (Article 17 of the Convention), and the rather complex distribution of tasks among various layers of government authorities under the Emergency Response Law (e.g., Article 7). Parties to the Convention are generally expected to have one single authority with overall responsibility for relevant matters, particularly for the purposes of the industrial accident notification system. The Chinese Government would need to make significant changes to the Emergency Response Law to consolidate and streamline the responsibilities of authorities in this regard. Importantly, however, the Emergency Response Law already contains procedures for many aspects of accident prevention, preparedness and response, and these could feasibly create a foundation for further measures that would correlate more closely with the requirements of the Convention.

If certain improvements could be made to the Emergency Response Law, and if new legislation or bilateral agreements could made to reflect the transboundary notification and consultation requirements of the Convention, China would be in a better position to ratify the Convention. By showing leadership on this issue, China may also influence its neighbours and other Asian countries to introduce similar measures and to eventually ratify the Convention also.

G. Using the Convention as a Benchmark

Prior to possible expansion of membership in the future, there is nothing to prevent non-UNECE countries from using the provisions of the Convention as a reference point for the adoption of similar (or identical) measures at the national level. Notwithstanding its origins in Europe, the Convention already comprises a workable model that could be adopted (and, if necessary, adapted) by any country without major difficulty. The short-term goal would be for domestic measures to be developed to closely reflect the framework and provisions of the Convention, such that formal accession—if and when it becomes possible—and implementation at a later stage would be relatively straightforward. Even if open accession is not eventually approved by the UNECE, any countries that have chosen to adopt provisions based on the Convention model would still be significantly better off for having done so. Whether it is economically and technologically feasible for Asian countries, in particular, to adopt the provisions of the Industrial Accidents Convention in their own domestic contexts, is ultimately a question for the governments of those countries. However, it is very likely that either the UNECE or other international organisations would offer both financial and technical assistance to help overcome any such hurdles.

H. The Existing Role of the Convention in Central Asia

It should be noted at this stage that the Industrial Accidents Convention already plays a role, albeit a very limited one, within some parts of Asia. Five countries in Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan), one in Western Asia (Israel) and Russia are all UNECE Member States. Of these, only Russia and Kazakhstan are Parties to the Industrial Accidents Convention, although sustained efforts are being made by the UNECE to promote accession by its other Central Asian Member States, with Kyrgyzstan perhaps the most likely to accede in the near future.[119] Since 2004, the UNECE has had an Assistance Programme in place to enhance the capacity of these countries to implement the requirements of the Convention. Through this programme, numerous fact-finding missions, workshops, seminars and conferences have been held by the UNECE in Central Asia, reflecting a special emphasis on 'tailor-made' assistance for economies in transition.[120] The UNECE is likely to intensify its efforts to promote accession and implementation by these four Central Asian countries into the future.[121]

If the Industrial Accidents Convention is ultimately adopted by all of the Central Asian countries, this may have a positive influence on other Asian countries, particularly those neighbouring Central Asia and Russia. It would undoubtedly be easier to promote the advantages of the UNECE framework to these countries and initiatives like the Assistance Programme may play a key role in 'reaching out' to non-Parties, both to raise awareness of transboundary industrial accidents and to encourage regional (if not multilateral) cooperation. Once other Asian countries can see the tangible benefits of a comprehensive regulatory regime on the issue, they may be persuaded to take action at the domestic level. If membership of the Convention is one day opened up to non-UNECE Parties, accession would be more straightforward for countries that are already familiar with the issues and the framework designed to address them.

Conclusion

Major industrial accidents, such as the Songhua River example in China, can have significant transboundary effects if they occur on a shared waterway or near a political boundary. Although only a few of the industrial accidents that have occurred in Asia to date have had known transboundary impacts, the potential for this is ever-present. Recent

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[119] See for example, UNECE above (n. 109).

[120] See for example, UNECE, A Decade of Assistance to Countries in Eastern and South-Eastern Europe, the Caucasus and Central Asia: Lessons Learned and Future Prospects (Doc. ECE/CP.TEIA/2014/5, 24 September 2014) 7.

[121] Ibid.

development initiatives by the Chinese Government, and the proliferation of industrial facilities in many parts of Asia generally, give particular cause for concern. China is typical of other Asian countries in preferring to take a bilateral approach to transboundary environmental issues rather than cooperating at a regional or multilateral level. At the same time, however, the existing bilateral agreements do not contain detailed provisions for cooperation in the event of transboundary industrial accidents. They tend to contain only broad obligations to refrain from causing harm and to cooperate with one another. Although some domestic laws (again using the example of China) have provisions on emergency planning and response measures, they do not stipulate how such measures are to be coordinated with neighbouring countries in the event of a transboundary accident.

The lack of any specific regulatory regime for the prevention and management of industrial accidents and their transboundary effects leaves many Asian countries susceptible to major impacts in the future. The potential costs of such accidents in terms of human health, the environment, and socio-economic and political implications, are likely to be high. Recognition of these risks following major industrial accidents in Europe in the 1980s and 1990s led to the development of a new multilateral agreement by the UNECE, the *Convention on the Transboundary Effects of Industrial Accidents*. The Convention provides a comprehensive regime for industrial accident prevention, preparedness and response measures. Importantly, it also provides for a consistent, systematic notification procedure between countries in the event of a transboundary accident. Countries that implement the Convention therefore have the benefit of detailed procedures to follow at both the domestic level and when interacting with other countries. Their obligations to one another are clearly stated in the Convention.

Although the Industrial Accidents Convention currently plays only a very limited role in Asia, as its membership is confined to UNECE countries, this may change in the future. Discussions are underway within the UNECE as to whether membership of the Convention should be opened up to all countries, and the many potential benefits of accession for non-UNECE countries have already been recognised. Given that Russia is already a Party to the Convention, and the five Central Asian UNECE countries may accede to it in coming years, the rest of Asia is likely to become more aware of its advantages also. Traditional preferences among many Asian countries for bilateral, rather than multilateral, cooperation on transboundary environmental issues need not be viewed as an obstacle to joining the Convention.

The Convention is perhaps best seen as playing a complementary role to existing bilateral efforts between Asian countries rather than replacing them. As such, it can provide both an overarching framework and more detailed guidance where domestic or bilateral provisions are inadequate or silent on particular aspects. The Convention would also be a

valuable forum for exchanging knowledge and experience, in addition to providing technical and financial assistance for the more disadvantaged countries in Asia. However, regardless of whether it becomes possible for non-UNECE countries to accede to the Convention, it provides a framework to which Asian countries can readily refer when formulating their own domestic responses to the issue of transboundary industrial accidents. It is to be hoped that such measures will be proactive in nature, rather than simply reacting to yet another Bhopal or Songhua disaster.

PIERCING THE CORPORATE VEIL:
Greening Companies' Governance and Shareholder Activism

Dr Mikiel Calleja[*] and & Professor Simone Borg[**]

Abstract

The introduction of corporate criminal liability for environmental harm in various jurisdictions around the world has generated a myriad of legal obligations which engage the body corporate in preventing such harm. Nevertheless ownership of property does not entail a standard benefit and liability condition for corporate shareholders. Whereas commercial investments involve an element of financial risk, resulting in the upward or downturn of a given investment, the corporate veil has created a significant imbalance. Notwithstanding separate legal personality, shareholders exert substantial influence over the direction of a company and whilst they stand to profit from their investment, limited liability means that shareholders are liable only to the extent of that investment. In the environmental context, this presents two major threats. Firstly, companies are encouraged to engage in potentially hazardous behaviour in order to realize maximum profits. Secondly, the consequences of this behaviour is subsidised with the costs in excess of the company's assets placed on the public purse and/or victims of environmental damage.

The law does, under exceptional circumstances, ignore this separation of identities and pierce the corporate veil. This paper seeks to illustrate that removing the insulation offered to shareholders through the veil piercing doctrine will motivate shareholders to exert greater influence over the conduct of their companies. The desire to mitigate the company's potential exposure to environmental liability will cause shareholders to instil environmental values into the corporate structure thereby reducing the volume of potentially hazardous conduct carried out by the company.

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Introduction

Jurisdictions regulate the corporate form in a variety of ways, however separate legal personality and limited liability are common to most.[1] Separate legal personality means that the rights and obligations of a company are, at law, distinct from those of the persons who participate in it. Limitation of liability has the corollary effect of limiting the liability of those shareholders to the extent of their actual or promised investment and any potential dividend. As a result, potentially harmful behaviour may be instructed and carried out without repercussion, and the victims of the conduct are often left without an appropriate remedy.[2] The failure of the victims in *Grace*[3], for example, to obtain proper compensation shows that the corporate veil insulates harmful behaviour within corporate organizations. Insulation from consequence means not only that harmful conduct is not curbed, but that it is encouraged in the pursuit of profit.

In recent years, companies' environmental conduct has improved as a direct result of environmental legislation imposing liability upon the officers of the company.[4] Whilst also having environmentally friendly consequences, shareholders and directors can rely on these measures as a means to mitigate liability.[5] Nothwithstanding these developments, much advocacy is still motivated by share price and profit and as such, this insulation permits companies to carry out risky activities with their strategy dependant on whether the company is over or under capitalised. The imposition of personal liability upon shareholders will make the financial motivation personal. In turn this would encourage shareholder activism leading to their direct influence in greening up the boardroom.

This article contributes to the corporate veil doctrine discussion by advocating that veil piercing can realign the economic and rights-based values prevalent in tort law that have been distorted by the doctrine. This comparative study of selected jurisdictions aims to demonstrate that these jurisdictions have inserted personal liability provisions attached to corporate conduct within their environmental legislation, resulting in the introduction of certain environmental measures being adopted within the corporate structure to mitigate

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[1] See for example the Danish Act on Public and Private Limited Companies, part 1, article 1(2) and the Maltese Companies Act, part v, title I, article 67 which both state that the holders of shares in public and private limited companies are not liable for the obligations of the limited liability company, but are liable only to the extent of their contributions'.

[2] See *Priest v. W.R. Grace & Co* No. DV-99-4, (Mont. 11th Dist. 1999).

[3] Ibid; see also Part 1 below.

[4] See DM Ong, 'The Impact of Environmental Law on Corporate Governance; International and Comparative Perspectives' (2001) 12(4) E.J.I.L. 708.

[5] See Section 2 below.

liability.[6] The following analysis argues that shareholders should yield power in a manner that the conduct of the company does not cause third parties to suffer environmental harm and if such harm ensues, liability should extend to all those involved in corporate decision-making. Finally, it seeks to point out that veil piercing will bring about green shareholder activism. In this sense it agrees with other commentators that have advocated veil piercing as the chief counterweight to the inequitable situation that exists[7] but it aims also to address how the method of assigning personal liability could be adopted. In doing so it attempts to distinguish between shareholders that are complicit in the corporate conduct attracting liability; those who are passive and those who are actively green in order to truly encourage green resolutions. The conclusion offers a starting point for such a discussion.

I. The Veil and How to Pierce It

Nothing can be so unjust as for a few persons abounding in wealth, to offer a portion of their excess for the formation of a company, to play with that excess, to lend the importance of their whole name and credit to the society, and then, should the funds of the incorporated body prove insufficient to answer all demands, to retire into the security of their unhazarded fortune, and leave the bait to be devoured by the poor deceived fish.[8]

The concept that shareholders are not liable to make good the debts of the company can be traced back to the Romans.[9] Likewise, the doctrine of separate legal personality has long been an essential feature of companies.[10] However the first modern law on limited liability was enacted in New York in 1811. In England, whilst previously possible by Royal Charter or Acts of Parliament, the Limited Liability Act was enacted in 1855. The doctrine of separate legal personality, as espoused in Salomon,[11] elucidates that the corporation is a legal person existing separately from its shareholders and corporate officers and is therefore

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[6] This study is not intended to provide any substantial insight into the legal systems which are discussed. Its purpose is to highlight the fact that certain jurisdictions have sought to hold natural persons making up a company liable for its conduct and further highlight that this has caused these persons to carry out measure to counteract this liability.

[7] AJ Dangermanand HJ Schellnhuber 'Energy systems transformation' (2013) 110(7) Proceedings of the National Academy of Sciences 549–558.

[8] Editorial, *Times* (London), May 25, 1824.

[9] I Sandor, 'The Emergence and Development of Limited Liability in the Field of the Company Law' ch translated from *A társasági jog története Nyugat-Európában (The History of Company Law in Western Europe)* Közgazdasági és Jogi Kiadó. (Budapest, 2005) 177-198.

Sourced <http://www.kre.hu/portal/doc/sic/2009/sic4_16_sandor.pdf>

[10] Ibid.

[11] *Salomon v A Salomon & Co Ltd* [1896] UKHL 1, [1897] AC 22.

capable of bearing its own rights and obligations. Limited liability creates efficiency by allocating the risk of enterprise to the more efficient risk-bearer in particular circumstances. If failure of the enterprise was to allow creditors to reach the non-business assets of an investor, investment would be discouraged and as such limited liability encourages investment.[12] This ensures that the separateness of the company from its shareholders is respected. However, this allocation of risk to creditors produces gains for society only if the creditors are capable of evaluating that risk and absorbing the consequences arising out of that risk. However, in those situations where liability is shifted to parties that have no choice in dealing with the enterprise (such as victims of environmental torts), risks/costs are effectively shifted from the company to other parts of society.[13] *Priest v. W.R. Grace & Co*.[14] provides an excellent example.[15]

In 1963, Grace & Co ('Grace') acquired Zonolite Co., a company that had been mining in Libby Montana, United States since the early 1920s. Upon acquisition, Grace was aware of the health problems of its newly acquired employees, mainly due to their exposure to asbestos.[16] Nevertheless Grace did nothing to improve the health of its employees. In the late 1980s, a period rife with asbestos related court actions, Grace began to shield the company and its shareholders from actions brought by involuntary creditors by undertaking measures which would ultimately separate Grace from its assets and as such from the injured parties.[17] By 2001, with countless pending lawsuits, a quarter of its assets remained (previously six billion USD), after having allocated its asbestos liability to one of its subsidiaries, Grace filed bankruptcy protection listing a number of domestic subsidiaries and affiliates. Not included in the listing however were Grace's now legally independent international subsidiaries and affiliates.[18] Although some of those diverted assets had been

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[12] FH Easterbrook & DR Fischel, 'Limited Liability & the Corporation' (1985) 52 U Chicago L Review 89, 89.

[13] PI Blumberg, 'Limited Liability and Corporate Groups' (1986) 11 J of Corp L 573, 587- 91.

[14] No. DV-99-4, (Mont. 11th Dist. 1999).

[15] For an in depth analysis and commentary see JC Heenan, 'Graceful Maneuvering: Corporate Avoidance of Liability through Bankruptcy and Corporate Law' (2004) 65 Montana L Review 99 – 133.

[16] M Bowker, *Fatal Deception: The Terrifying True Story of How Asbestos is Killing America* (Rodale 2003) states that the asbestos manufacturing industry knew of the dangers of asbestos by the 1930's. Here he cites an occupational disease report published in National Underwriter magazine holding that 'any process involving asbestos is considered especially hazardous, for the asbestos fibres appear to be difficult to expel from the lungs'.

[17] Heenan above (n. 15) at 104.

[18] Ibid.

recovered through actions designed to enforce the debtor/creditor relationship, Grace kept much of its assets out of reach.

The Grace case highlights the crucial need of stakeholder involvement in greening the operations of a body corporate. Shareholders exert substantial influence over the direction of a company and whilst they stand able to make excessive profit, they are liable only to the extent of their investment often leaving the party suffering the harm without a remedy. The law does allow however, by way of exception, the shareholders to be found liable for the company's obligations. In a time of increasing large scale environmental disasters, veil piercing has been applied so as to reach additional deep pockets to finance damage payments and costs related to environmental damage.

Piercing the corporate veil refers to the judicially imposed exception to the principles of separate legal personality and limited liability, by which courts disregard the separateness of the company and hold a shareholder responsible for the company's action as if it were the shareholder's own.[19] The circumstances under which the Court will do so will vary according to jurisdiction. This discussion will give a brief explanation of the doctrine as applied in two leading jurisdictions in company law, namely England and the United States. These two jurisdictions are also economic powerhouses, commanding major investment and within which the majority of multinational corporations have a presence. The following comparative analysis of British and U.S. caselaw involving the piercing of the corporate veil does not as such, involve cases of liability from environmental harm. It serves to demonstrate however the reasons behind the application of the doctrine, therefore shedding some light as to whether piercing the veil could be equally applied to ensure that limited liability is not used by individuals within the corporate body to skive responsibility for environmental harm.

There is a substantial difference between veil piercing doctrine in the United States and England, and between the willingness of the courts in each jurisdiction to apply it. In the United States the doctrine seems accepted and academic discussion focuses on a manner by which to reconcile the often contradictory case law.[20] On the other hand, in England, the discussion centres on its applicability with the general perception that the English Courts do not favour its application unless under the most exceptional of circumstances.[21] Veil piercing doctrine in England can be seen to diverge across three periods.[22] The first period from

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[19] RB Thompson, 'Piercing the Corporate Veil: An Empirical Study', (1991) 76 Cornell L Review 1036. Available at: http://scholarship.law.cornell.edu/clr/vol76/iss5/2

[20] TK Cheng, 'The Corporate Veil Doctrine Revisited: A Comparative Study of the English and the U.S. Corporate Veil Doctrines', (2011) 34(2) British Columbia Int'l & Comp L Review 329-412.

[21] Ibid.

[22] Ibid.

Salomon to around the early 1940s where different approaches to the doctrine had been tested.

In *Re Darby, ex parte Brougham*, the veil was pierced because of misrepresentation.[23] In *Gilford Motor Company vs. Horne*[24], the veil was pierced for attempting to evade a legal obligation. During this period, the English courts experimented with common law concepts to resolve issues of corporate personality and failed to create a generally applicable framework.[25] One exception was *Smith, Stone and Knight v. Birmingham* in which the Court attempted to set guidelines for any given case.[26] Nevertheless, these guidelines were largely forgotten in subsequent English case law in lieu of traditional common law concepts.

The second era lasted between the Second World War and the late 1970s in which veil piercing was championed by Lord Denning who espoused the single economic theory. In *Littlewoods*[27] he showed his support for the doctrine:

> *The doctrine laid down in Salomon v. Salomon has to be watched very carefully. It has often been supposed to cast a veil over the personality of a limited company through which the courts cannot see. But this is not true. The courts can and often do draw aside the veil. They can, and often do, pull off the mask. They look to see what really lies behind.*

The third era began with *Woolfson v. Strathclyde Regional Council*[28] in which the Court questioned whether the Court of Appeal in *DHN*[29] properly applied the principle that it is appropriate to pierce the corporate veil only where special circumstances exist indicating

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[23] *Re Darby, Brougham*, [1911] 1 K.B. 95 at 103 (Eng.).

[24] *Gilford Motor Co. v. Horne*, [1933] Ch. 935 (A.C.) at 956 (Eng.).

[25] Cf. MA Pickering, 'The Company as a Separate Legal Entity' (1968) 31 Modern L Review 481, 481.

[26] *Smith, Stone & Knight Ltd. v. Birmingham*, [1939] 4 All E.R. 116 (K.B.) at 121 (Eng.) in which Atkinson J formulated six relevant criteria:

(a) Were the profits of the subsidiary treated as profits of the parent?

(b) Were the persons conducting the business of the subsidiary appointed by the parent?

(c) Was the parent the 'head and brain' of the subsidiary?

(d) Did the parent govern the subsidiary?

(e) Were the profits of the subsidiary made as a result of the skill and direction of the parent?

(f) Was the parent in effectual and constant control of the subsidiary?'

[27] Littlewoods Mail Order Stores v. Inland Revenue Commissioners (1969) 1 W.L.R. 1241 (A.C.).

[28] Woolfson v. Strathclyde Regional Council (1978) S.C. (H.L.).

[29] DHN Food Distributors Ltd v Tower Hamlets London Borough Council [1976] 1 WLR 852.

that it is a mere façade concealing the true facts. Despite a recent resurgence,[30] Davies states the following in respect of the current state of the doctrine under English law:

> *The doctrine of lifting the veil plays a small role in British company law, once one moves outside the area of particular contracts or statutes. Even where the case for applying the doctrine may seem strong, as in the undercapitalised one-person company, which may or may not be part of a larger corporate group, the courts are unlikely to do so.*[31]

In the United States, the alter ego doctrine and the instrumentality doctrine are the two most systematic analytical frameworks applied by the Courts in veil piercing cases.[32] In *Lowendahl v Baltimore and Ohio Railroad*[33] the Court held that three elements must be present in order to pierce the veil:

> *(1) Control, not mere majority or complete stock control, but complete domination, not only of finances, but of policy and business practice in respect to the transaction attacked so that the corporate entity as to this transaction had at the time no separate mind, will or existence of its own; and (2) Such control must have been used by the defendant to commit fraud or wrong, to perpetrate the violation of a statutory or other positive legal duty, or a dishonest and unjust act in contravention of plaintiff's legal rights; and (3) The aforesaid control and breach of duty must proximately cause the injury or unjust loss complained of.*[34]

Under the alter ego doctrine, if it is shown that a company is so controlled by an individual and that the interests of the company become secondary so that it chiefly conducts the business of the individual and not its own, it will be considered to be the alter ego of the individual and the corporate form will be set aside to accomplish an equitable result. In *Zaist v. Olson* the Court held that:

> *If plaintiff can show that there was such a unity of interest and ownership that the independence of the corporations had in effect ceased or had never begun, an adherence to the fiction of separate identity would serve only to defeat justice and equity by permitting the*

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[30] Beckett Investment Management Group v. Hall [2007] EWCA Civ. 613; [2007] IRLR 793.

[31] PL Davies et al., Gower and Davies *Principles of Modern Company Law* (Sweet & Maxwell, 8th ed. 2008) 202–08.

[32] See Cheng above (n. 20).

[33] See (N.Y. App. Div. 1936) 247 A.D. at 156, aff'd, (N.Y. 1936) 6 N.E.2d 56.

[34] Ibid.

> *economic entity to escape liability arising out of an operation of one corporation for the benefit of the whole enterprise.*[35]

In *Water Whole International Corp*. the Court identified nine elements the satisfaction of which would render the company an alter ego.[36]

Whilst the above analysis can confirm that 'the concept of piercing the corporate veil is neither clearly defined nor generally agreed upon',[37] it is evident that Courts have persistently held veil piercing to be concerned with equity, taking into consideration all the facts particular to the case at hand. As such, the decision to pierce is ultimately determined in accordance with the bona fide use of the privileges that are awarded to companies and where that privilege is 'utilised so as to defeat public convenience, justify wrong, protect fraud, or defend crime the law will regard the corporation as an association of persons'. If one had to draw conclusions to what extent can Courts by analogy, pierce the veil to address evasion of liability for environmental harm, it appears that the conditions identified above provide enough legal ground to do so.

II. Liability Matters

The increased use of the veil piercing doctrine by the Courts in order to encourage green shareholder activism is advocated by this analysis. This section is intended to show two recent trends in environmental law that may, together with veil piercing, serve to control

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[35] See *Zaist v. Olson* (1968) 353 Mass. 614 in which the Court held that If plaintiff can show that there was such a unity of interest and ownership that the independence of the corporations had in effect ceased or had never begun, an adherence to the fiction of separate identity would serve only to defeat justice and equity by permitting the economic entity to escape liability arising out of an operation of one corporation for the benefit of the whole enterprise.

[36] (1) whether the dominant corporation owns or subscribes to all the subservient corporation's stock, (2) whether the dominant and subservient corporations have common directors and officers, (3) whether the dominant corporation provides financing to the subservient corporation, (4) whether the subservient corporation is grossly undercapitalized, (5) whether the dominant corporation pays the salaries, expenses or losses of the subservient corporation, (6) whether most of the subservient corporation's business is with the dominant corporation or the subservient corporation's assets were conveyed from the dominant corporation, (7) whether the dominant corporation refers to the subservient corporation as a division or department, (8) whether the subservient corporation's officers or directors follow the dominant corporation's directions, and (9) whether the corporations observe legal formalities for keeping the entities separate.

[37] B Sjåfjell, 'Environmental Piercing of the Corporate Veil: The Norwegian Supreme Court Decision in the Hempel Case' (2010) 7 European Company L 154–160, <http://ssrn.com/abstract=1616820> 1.

evasion of responsibility of environmental harm by individuals who hide behind the body corporate's limited liability. In reality the piercing of the veil by the Courts should serve as a last resort and essentially environmental legislation should serve to curb any possible room for abuse in the first place. The first trend is the rise of domestic legal frameworksimposing personal environmental liability for directors of companies that cause harm to the environment. The second is the rise of corporate environmental management systems as a response to the imposition of this environmental legislation.

There have been some recent developments whereby civil law and common law jurisdictions now impose civil, administrative and/or criminal liability on corporate officers. It should be said that strictly speaking, veil piercing occurs when a Court puts the notions of limited liability and separate legal personality aside and holds a company's shareholders or directors personally liable for the corporation's actions or debts. In the examples to come, liability placed on directors is typically imposed on the basis of statutory obligations or on the basis of negligence and there is, as such, no veil piercing here, at least in the sense discussed under Part I of this paper. Nevertheless the effects are the same, namely natural persons are given legal responsibility to ensure that conduct of the corporation does not cause environmental harm. This section is intent on illustrating that liability placed on natural persons is capable of altering the conduct of a corporation. So introducing such legal obligations for corporate officers can also be seen as a wider interpretation of veil piercing or as more commonly known, extended liability. In other words, rather than leaving it up to the Courts, veil piercing is in this manner being prescribed in legislation as an inherent methodology when conducting the operations of the body corporate.

Australia provides far-reaching legislation directed towards the protection of the environment[38] some of which impose director liability for the environmental harm caused by their corporations.[39] Liability is generally imposed on the basis of positional liability, managerial liability, responsible officer liability or participatory liability. Different statutory defences are available depending on the particular legislation and territory however all centre on due diligence, lack of control or having taken reasonable steps to avoid the

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[38] See for example, the federal Australian Protection of the Sea (Civil Liability) Act 1981; Protection of the Sea (Prevention of Pollution from Ships) Act 1983; Environment and Heritage Legislation Amendment Act (No 1) 2003; World Heritage Properties Conservation Act 1983; Environment Protection (Sea Dumping) Act 1981; Environment Protection and Biodiversity Conservation Act 1999; Hazardous Waste (Regulation of Exports and Imports) Act 1989.

[39] See for example, the state level Australian Acts, The Waste Management and Pollution Control Act 1998 (NT) Art. 91(1); The Environment Protection Act 1993 (SA) Art. 129; The Environment Management and Pollution Control Act 1994 (Tas.) Art. 60.

contravention. Respite is unlikely. The Protection of the Environment Operations Act 1997 in New South Wales was recently amended categorising the offences imposing director/manager liability into special executive liability and executive liability with the former carrying a maximum penalty of 1 million Australian dollars or 7 years' imprisonment or both in the case of an individual.

Likewise Canada's environmental protection legislation[40] provides for the personal liability of those persons who have charge, management or control of the corporation's activities or property. For example, the Canadian Environmental Protection Act[41] provides that:

> *If a corporation commits an offence under this Act, any director, officer, agent or mandatory of the corporation who directed, authorized, assented to, acquiesced in or participated in the commission of the offence is a party to and guilty of the offence, and is liable on conviction to the penalty provided for by (the) Act for an individual in respect of the offence committed by the corporation, whether or not the corporation has been prosecuted or convicted.*[42]

In *Regina v. Shamrock Chemicals and Shirley*[43] the Ontario District Court enforced the director liability provisions of the Environmental Protection Act, finding that the corporation, shareholder and director could each be fined for an environmental offence.

In Hong Kong, criminal liability may be imposed on directors for damage to the environment.[44] Liability may also be imposed for failing to take steps to protect the environment.[45]

Article 157 of the UK Environmental Protection Act 1990 in the United Kingdom states that:

> *Where an offence under any provision of this Act committed by a body corporate is proved to have been committed with the consent or connivance of, or to have been attributable to any neglect on the part of, any director, manager, secretary or other similar officer of the body corporate or a person who was purporting to act in any such capacity, he as well as the body*

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[40] See for example, the Water Act, RSBC 1996; the Ontario Environmental Protection Act, RSO 1990.

[41] S.C. 1999, c. 33.

[42] Ibid, Art. 280(1).

[43] (1989) 4 C.E.L.R. (N.S.) 315.

[44] See for example, Hong Kong Air Pollution Control Ordinance (Cap 311) & Dumping at Sea Ordinance (Cap 466).

[45] See Antiquities and Monuments Ordinance (Cap 53).

> *corporate shall be guilty of that offence and shall be liable to be proceeded against and punished accordingly.*[46]

In the United States, CERCLA imposes liability on directors concerning hazardous waste and contaminated land. Specifically, the strict liability imposed by article 107(a) has been interpreted by the courts to suggest that the corporate veil may be pierced so that shareholders, officers, directors and even lenders may be exposed to personal liability.

In the European Union, the Environmental Liability Directive was published to guarantee that costs, damages and expenses are covered by the polluter.[47] 'An operator whose activity has caused the environmental damage or the imminent threat of such damage is to be held financially liable'.[48] The Directive defines an operator as:

> *Any natural or legal, private or public person who operates or controls the occupational activity or, where this is provided for in national legislation, to whom decisive economic power over the technical functioning of such an activity has been delegated, including the holder of a permit or authorisation for such an activity or the person registering or notifying such an activity.*[49]

Therefore, directors or managers of companies in E.U. member States causing environmental damage may be found liable as an operator in a similar way to director liability under CERCLA. The Directive takes on a minimum harmonisation approach allowing Member States to transpose its provisions into national legislation, and to implement more stringent provisions than that found in the Directive if they prefer to do so. For example, Hungary did not transpose the term 'operator' as used in the Directive. Rather it is the 'user of the environment' that is liable for environmental damage that user may cause, thus widening the scope of the responsible party under the Directive to include directors and officers of a corporation. [50]

In the Irish case *Wicklow County Council v Fenton & ORS*[51] the High Court of Ireland placed significant importance upon the relevant European legislation. In particular, the definitions of waste, producer, holder, disposal, collection and the role of the polluter pays principle were all assumed from different European Directives. The Court noted that the

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[46] U.K. Environmental Protection Act 1990 Art. 157.

[47] E.U. Directive 2004/35/EC para 2.

[48] Ibid.

[49] Ibid.

[50] 1995 Environment Act (amended in 2007 to transpose Directive 2004/35/EC).

[51] (No 2.) [2002] 2 I.R. 583.

purpose of the Act was to control and prevent environmental pollution and that when environmental pollution arises or is likely to arise the person causing such pollution may be subject to an Order. The Court found both the company and its directors equally negligent. Despite claims of separate legal personality the Court noted that EU legislation defined the polluter as 'someone who directly or indirectly damages the environment or who creates conditions leading to such damage'.[52] In Paragraph 112 of the judgment, the court held that it cannot be said that the directors did not (at least indirectly) cause those conditions which were required. Judge O'Sullivan concluded that:

> *The domestic law in relation to limited liability of companies would, in my opinion, frustrate or at least fail fully to implement the objectives of the relevant directives if it precluded the making of an order against directors in circumstances where the company in question having first been directed by the Court to comply with such orders was not in a position for financial or other reasons so to do.*[53]

The greening of the corporate behaviour does not depend only upon legal instruments. The use of corporate environmental management systems (EMS) has been on a steady increase and can arguably be credited with being as effective when applied in tandem with environmental legislation.[54] This can be discerned by comparing the number of environmental measures adopted by companies today with those only a few years ago. For example, towards the end of 2009, at least 223,149 ISO 14001:2004 certificates (which provide the requirements for environmental management systems used by companies) had been issued.[55] Towards the end of 2014, 324,148 ISO 14001:2004 certificates had been issued.[56] This is because whilst EMS protect the environment they also perform other corporate functions such as protecting the corporation and its officers from potential environmental liability.[57]

The adoption of an EMS as a tool to allow the incorporation of environmental policies into corporate governance forms an essential part of most environmental liability risk

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[52] Ibid.

[53] Ibid.

[54] See Ong above (n. 4).

[55] ISO Press Release 25 October 2010 <http://www.iso.org/iso/news.htm?refid=Ref1363> accessed on 08 March 2016.

[56] The ISO Survey of Management System Standard Certifications – 2014 <http://www.iso.org/iso/iso_survey_executive-summary.pdf?v2014> accessed on 08 March 2016.

[57] Ibid.

management systems due to environmental liability legislation[58] and due to the belief that pollution prevention can be cost effective.[59] There is also the added bonus of attracting the 'green' consumer and EMS certification can also lead to increased investor confidence due to its ability to protect the corporation and its officers from environmental liability.[60] Certain governments have introduced the 'legal requirement for the introduction of corporate EMS applying the latest environmental management quality standards'.[61] In terms of the European Eco-Management and Audit Scheme (EMAS), corporate environmental performance is the concern of the board of directors. For example, the Austrian Eco Audit Act[62] requires the eco auditing of companies to determine conformity with the applicable environmental legislation as well as environmental management standards established such as the ISO 14001 Series or EMAS.[63]

Corporate actors are now expected to go beyond mere compliance and to nurture and advance environmental objectives, implement arrangements that nurture and advance these objectives as well as to have systems in place to measure success. In exchange the corporation is awarded an official confirmation illustrating environmental commitment. The corporation is then permitted to utilise the award in their corporate promotion. Whilst participation is voluntary, external pressure from competitors and internal shareholder pressure often motivate participation. Under ISO 14001, guidelines are provided through which the corporation's environmental policy (which obliges the corporation to prevent pollution, continually improve and comply with environmental legislation and regulation) is to be identified, implementation plans and procedures to be put in place and the company's unique circumstances taken into account. These steps are followed by monitoring the policy and taking corrective action to ensure its execution (ensuring internal audits), and by final evaluation of the EMS by the corporation's top brass 'to ensure its continuing suitability,

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[58] Indeed it is noted that jurisdictions with the most burdensome environmental legislation contain the largest number of EMS participants. See for example, the number of EMAS participant in Germany, Austria and Scandinavian countries as compared to southern European countries.

[59] See D Kirkpatrick and C Pouliot, 'Environmental management, ISO 14000 offers multiple rewards' (1996) 28(6) Pollution Engineering 62–65: 'Indeed energy costs may be reduced and fines and penalties may be minimalized'; see also Ong above (n. 4) where it is also submitted that the increase of the environmentally conscious pubic in their want for goods that are environmentally friendly and persistent NGO pressure have also contributed to the rise of EMS's.

[60] D Morrow and D Rondinelli, 'Adopting Corporate Environmental Management Systems: Motivations and Results of ISO 14001 and EMAS Certification' (2002) 20(2) European Management J 159–171.

[61] Ibid.

[62] UGStVG BGBl 622/1995.

[63] Ong above (n. 4) at 18.

adequacy, and effectiveness'.[64] Whilst ISO 14001 is concerned with established policies, plans and procedure compliance, there are no requirements beyond this.[65]

In Europe, the growth of Member State legislation encouraging the adoption of corporate EMSs emerges from the regulations covering the voluntary participation by organisations in a Community eco-management and audit scheme.[66] EMAS applies to all 28 EU Member States and the 3 European Economic Area States and is comparable to and compatible with ISO 14001 in terms of makeup and requirements, but it is better designed to actually bring about changes in environmental performance. EMAS, with similar environmental goals as its ISO counterpart, is different in that it requires the declaration of an environmental statement by the organisation and 'is more rigorous in mandating reductions in environmental impacts to levels not exceeding those corresponding to economically viable applications of [the] best available technology'.[67] It also facilitates transparency by requiring that more information be made publicly available by the organisation. Lastly, it requires 'internal system compliance and performance audits, and external verification must be conducted at least once every three years. ISO only suggests system audits against internal benchmarks'.[68]

Although voluntary, the use of EMSs is on the rise as it may form an integral part of the due diligence defence awarded to directors and corporations as a means for evading liability.[69] The due diligence defence is the most readily available defence in those jurisdictions that have opted for fault based liability. In *SPCC v Kelly*[70] the court had this to say of due diligence:

> *Due diligence ... depends on the circumstances of the case, but contemplates a mind concentrated on the likely risks. The requirements are not satisfied by precautions merely as a general matter in the business of the corporation, unless also designed to prevent the*

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[64] ISO [International Organization for Standardization]*, Environmental Management System - Specifications with Guidance for use*, ISO 14001 EMS (Geneva 1st Ed.1996*)*.

[65] Although companies are free to establish procedures that go beyond minimum compliance requirements.

[66] REGULATION (EC) No 1221/2009 on the voluntary participation by organisations in a Community eco management and audit scheme (EMAS), repealing Regulation (EC) No 761/2001 and Commission Decisions 2001/681/EC and 2006/193/EC.

[67] MT Hatch, *Assessing Environmental Policy Instruments* (State University Press of Albany, 2005) 159.

[68] Ibid, 162.

[69] R. v. Weyerhaeuser Canada Ltd., 2000 BCPC 227.

[70] (1991) 5 ACSR 607, 609.

> *contravention. Whether a defendant took the precautions that ought to have been taken must always be a question of fact and, in my opinion, must be decided objectively according to the standard of a reasonable man in the circumstances. It would be no answer for such person to say that he did his best given his particular abilities, resources and circumstances.*[71]

The opportunity afforded to corporate directors to utilise the due diligence defence is designed to encourage the corporate use of the precautionary principle in environmental management. Due diligence in this context is typically not defined within the legislation that has afforded it as a defence. Instead, due to the complex nature of an environmental offence its interpretation has been left to the courts. The defence is based on the justification that the corporation did what was reasonably expected in order to avert a particular occurrence.

An interesting illustration of this is the 2013 Ontario judgment of *Podolsky v. Cadillac Fairview Corp.* (*Cadillac Fairview*).[72] Here the Court accepted the plaintiff's claims that sunlight reflected from a building owned by the defendant corporation could fall within the definition of an emission of radiation and therefore be considered a 'contaminant' under the Ontario Environmental Protection Act. The Court, whilst accepting that the defendant corporation had discharged a contaminant resulting in the death of a substantial amount of birds, ultimately discharged that defendant corporation citing the fact that they had satisfied the due diligence defence because of compliance with industry and building standards as well as having initiated programmes and implemented measures to deter bird strikes. This demonstrates the various interpretations correct director due diligence may take. Therefore the corporation's environmental risk management system cannot simply adopt a broad form of environmental management, but must attend to specifics.

The rise of EMS as a direct result of the imposition of environmental legislation highlights the deterrent factor that can be brought about by removing the insulation from liability that currently places the burden on the injured party. Instead it places liability with the directors responsible for the direction of the company and therefore responsible for the corporate conduct attracting that liability. If the same logic was to be applied to shareholders (on the basis that they also yield considerable power within the corporate structure and are therefore also responsible for the conduct attracting liability), significant pressure would be imposed on the board of directors by their shareholders with the same purpose of mitigating their exposure to potential liability.

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[71] Ibid.

[72] 2013 ONCJ 65.

III. Press to Play: Activating the Shareholder

The doctrine of limited liability has severed the action-reaction element in the law. Take the following example. The property of Mr X causes damage to the property belonging to Mr Y. As a result, and should all the elements required in a tort based action be present, Mr X is liable towards Mr Y. The usual consequence of this liability is twofold; Mr X takes measures so as to mitigate or even eliminate any future liability and Mr Y is compensated for the harm suffered. Therefore ownership of property entails not only rights but also liabilities. However this is not the case for the shareholder.

When a corporation causes harm to the environment, its shareholders have no legal obligation imposed on them as a result of that harm and are not legally required to cause the corporation's board to stop or to reduce the harmful conduct. This means that the only consequences to the shareholder as a result of a company's activities are the corporation's share price and the amount of dividends distributed. Fairness and legal uniformity dictate that shareholders demand that the conduct of their corporation does not cause harm to third parties and/or the environment. Failing this, they should be held accountable. This would serve as a deterrent to shareholders who deem profit at all costs as the priority. [73]

Unlimited liability and its shortcomings has been the subject of much debate.[74] That investment will be stifled is commonly raised as a reason for keeping limited liability. Whether the Courts could administer a system of unlimited liability has also been questioned. Lastly we are provided with stories of sending poor unsuspecting individuals into bankruptcy. However there is nothing to show that unlimited liability would discourage investment with the exception of those corporations that under the prevailing rules of tort law impose net costs on society. Even in the case of public corporations this would not burden the market, saving the fall in share price to account for the social cost of the corporation's activities. Furthermore this would not cause insurmountable obstacles to the judicial

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[73] It should be noted that there are different types of investors and the distinction important in the shareholder activism context. Institutional investors typically have larger investment blocks than individual investors as well as having more specialised expertise. This means that they are capable of playing a much more active role than their individual counterparts. Long terms investors may be more willing to sacrifice short terms profit in exchange for particular conduct than short term investors. Despite the importance of this distinction, this paper is concerned with the manner through which to encourage green shareholder activism and not the success that different types of shareholders will have in implementing green resolutions. Therefore investor or shareholder is to apply to all shareholders without distinction.

[74] H Hansmann and R Kraakman, 'Toward unlimited shareholder liability for corporate torts' (1991) 100(7) Yale L J 1879–1934.

administration of an unlimited liability rule as will be shown.[75] Lastly, fears that mum and dad investors would be pushed into bankruptcy for the conduct of the corporation of which they had no knowledge, let alone had a say, are unfounded. It would still be for the Court to decide which costs are to be borne by the corporation and its shareholders and which are not. Many of the justifications behind retaining limited liability are therefore weak.

Unlimited liability does however have the potential to mobilise shareholders. In the environmental context, it has the potential to motivate shareholders to question and to demand of the board that the corporation's conduct be environmentally sound to avoid exposure to potential environmental liability which may ultimately, as a result of unlimited liability, be personally incurred by the shareholders. Shareholder activism arose out of increasing awareness that social, environmental and related issues can have a substantial effect on a corporation's financial performance. This stems from Albert O. Hirschman treatise *Exit, Voice and Loyalty*.[76] Shareholders may decide on one of many courses of action when faced with corporate conduct that they do not agree with. They can sell their investment, raise their objections to the corporate conduct in question or hold on to their investment and do nothing. The former and the latter both do not affect change and risk a poor return on the original investment. Furthermore shareholders are unlikely to turn their backs on a good investment because they do not like the manner in which the corporation is being run without at least first trying to change it. Raising their objections through shareholder resolutions permits shareholders to voice their opinions. This should draw the attention of management as well as, depending on the size and type of corporation, provide leverage due to the publicity of the objection. Unlimited liability may even encourage passive investors who are no longer content with simply attending general meetings. Instead passive investors will realise that they may be affected by the conduct of the corporation so they may attempt to shape it. Even those shareholders that, under a system of unlimited liability, have some form of personal insurance will be forced to take note and internalise the costs or pay higher premiums.

The various arguments presented in this paper point towards 'limiting' unlimited liability. Whilst the discussion relating to unlimited liability in corporate law is not restricted to environmental issues, certain environmental disasters caused by corporations have served to ignite the debate. Many commentators have argued in favour of unlimited liability and then gone on to fashion their ideal model.[77] Should liability attach to the shareholders at the time

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[75] Ibid.

[76] AO Hirschman, Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States (Harvard University Press, 1970).

[77] See Hansmann above (n. 74).

the harm was suffered or should it attach to the shareholder at the time the claim is brought? Would collection from multiple shareholders place a strain on the judicial system and would the costs of collection severely reduce the award?[78] These questions are of greater importance when speaking of publicly traded corporations as opposed to two or three shareholder private corporations, for obvious reasons, however the questions remain nevertheless relevant and applicable to privately held corporations. A further question is whether liability should be joint and several or should it attach to the shareholder in accordance with their holding in the company? This last question may have far reaching effects from an activism point of view.

Most commentators argue in favour of a pro rata liability rule[79] and this discussion certainly finds this more equitable and a more efficient burden placed on the market (in the case of publicly traded shares) then joint and several liability.[80] However, the liability should not be apportioned pro rata based on the shares held in the corporation, but rather pro rata based on the influence exerted in respect of the activity attracting liability. Justifying pro rata liability based on holding necessitates the presumption that 10% of the corporation's equity entitles its holder to 10% say in the decision making process. This is not the case. A certain number of shares do not always yield a corresponding amount of votes. Even excluding this reality and assuming that one share is equal to one vote, the general meeting is made up of a number of shareholders, all with different interests and views and likely to vote differently in respect of different resolutions.

In other words, whilst a shareholder may possess 40% of the voting rights in a corporation, they may be vehemently opposed to a particular activity carried out by the corporation but powerless to restrict the board from executing that conduct. If that conduct then attracts liability, it hardly seems fair that that shareholder should carry 40% of the liability in a system of unlimited liability. It has to be said that in terms of ensuring proper and adequate compensation for tort victims, pro rata liability according to shares held in the company is a far better method because it allows the Court to call on various pockets for

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[78] See Hansmann above (n. 74) for an excellent analysis.

[79] Ibid; see also D Leebron, 'Limited Liability, Tort Victims and Creditors' (1991) Working Paper No. 48, Centre for Law and Economic Studies, Columbia University School of Law.

[80] It should be noted that this paper is in favour of unlimited liability only in respect of tort victims. A contract creditor for example is amply equipped to determine the credit worthiness of a company and carry out a risk assessment on that basis as to whether or not to contract with the company. On the other hand, tort victims are not in a position to do so prior to injury or insist on compensation beyond the company's assets for the harm suffered. This allows the company to unilaterally determine its degree of exposure to tort based claims thereby inviting risky behavior.

compensation. If the Court were to do so on the basis of pro rata liability for responsibility for conduct, a tort victim may go uncompensated in full (or at all) if that shareholder is not sufficiently liquid to satisfy the claim.[81] On one hand, from a shareholder advocacy point of view, pro rata liability based on influence is more likely to motivate the shareholder to pass green resolutions, but on the other hand it may run the risk of creating shareholder apathy and encouraging a hands off attitude. As a safety net however it is essential to have a legal framework which would ensure that no action on the part of the shareholders does not exculpate them from liability. One way of doing this may be the imposition of a rebuttable presumption that all shareholders have contributed to the conduct attracting liability unless evidence is brought forward showing that they were in fact opposed to that conduct.

In a typical case concerning a tortuous act allegedly committed by a corporation, the Court will first determine whether all the elements exist for the corporation to be found liable in tort. Did the alleged victim suffer damage and is there sufficient evidence to show a link between the conduct of the alleged tortfeasor and the harm suffered by the victim? If the corporation is found liable in tort, the Court must then go about determining the amount that is due, typically *restitutio integrum*. Once it is determined that the corporation is liable in tort and the amount established, that corporation will be liable to pay that amount to the victim as compensation for the damage suffered. However, if the assets of the corporation are unable to satisfy that liability, the Court must determine whether the circumstances warrant the imposition of unlimited liability. If the Court is willing to apply unlimited liability the Court must then enter into an additional analysis so as to determine the extent each shareholder has had in influencing that corporate conduct. If unlimited liability is justified on the basis that those behind the corporate veil yielded considerable decision making power and should therefore be held responsible for the actions of the corporation, then the amount for which they are liable should be proportionate to the degree to which they actually influenced the action attracting liability.

The burden of proof is to be placed on those shareholders claiming non approval of the corporate conduct giving rise to tortuous liability. They must provide evidence to show that the decision was carried out despite and not because of them. Minutes of the General Meetings would have to be scrutinized in order to determine policy and the manner in which the resolution was carried. Was this carried unanimously or despite objections? Appointments of directors may also be given weight in the proceedings if these appointments have a bearing on the tortuous act. Did certain shareholders request that impact assessments be carried out and where these assessments considered by the

[81] Although in the case of corporate shareholders it may be argued that persistent veil piercing up the structure may go some way to satisfying the claim.

corporation? Once this is determined the Court would assign a 'responsibility percentage' based on each of the shareholder's influence in respect of the tortuous act and each shareholder would be liable for that percentage of the total amount to be compensated.

Whether pro rata liability based on influence should be applied must be determined on the basis of whether it is justified on the principle of equity and fairness and whether it is workable. The issue of fairness has already been discussed and it seems reasonable that a tortfeasor is liable to the extent of their contribution to the tortuous act. Joint and several liability would place an unfair and unnecessary burden on small shareholders and liability based on shareholding does not take the dissent of shareholders into account. Questions as to whether or not the Court is equipped to carry out this additional analysis should be dispelled immediately. In environmental tort claims, Courts already deal with multiple parties as a result of dispersed pollution, contributory elements, latency of harm and a number of other and more complicated factors in order to determine whether and how much compensation is due and to whom. Determination of shareholder influence on a particular resolution giving rise to a tortuous act is easier than the determination of the existence of that tortuous act itself and should therefore not trouble the Court. A number of guidelines could be established to ease the burden placed on the Court although a mix of corporate or company law principles to determine influence on a resolution giving rise to corporate conduct and tort based principles to determine how to apportion liability based on that influence could also serve the Court well.

This would ensure that not every shareholder is liable to the same degree but only to the extent of their influence on the act giving rise to liability. Shareholders will no longer feel safe in the knowledge that risky behaviour may be pursued in the pursuit of profit because of the financial insulation provided by limited liability. It has been argued that costs associated with corporate monitoring and the submission of proposals is a large deterrent to shareholder activism particularly with respect to the benefits to be reaped as a result of that outlay.[82] Unlimited liability makes activists out of its shareholders by injecting a personal element so that the principle that environmentally related issues can have an effect on a corporation's financial performance now also includes the shareholders' financial performance by extension; the benefit is the mitigation of liability. This will create green incentives amongst shareholders to fight to ensure that their green resolutions trickle down to the board. In a bid to escape liability they will green the conduct of their corporations.

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[82] O Lilliehook and D Margolin 'Shareholder Activism Can it be an Effective Governance Mechanism?' Stockholm School of Economics Master's Thesis in Finance (2009).
Accessed at <http://arc.hhs.se/download.aspx?MediumId=802>

Conclusion

This discussion advocates the removal of the limited liability rule as a means to activate shareholders via the piercing of the corporate veil. It has examined how this may happen when the doctrine is applied in the 'traditional' way by Courts. A wider interpretation regarding the application of the doctrine may also be seen via the adoption of national legislation that bestows personal liability upon individuals within a body corporate, aiming at the prevention and mitigation of environmental harm. The rise of environmental management systems as a reaction to the application of environmental legislation that serves to place liability where it belongs, illustrates that corporate actors will take preventive and mitigation measures as a result of the imposition of such liability Finally, the discussion turned to the concept of 'unlimiting' limited liability as an ultimate means of piercing the corporate veil and as a method for placing liability on the appropriate defendant.

The conclusion is that unlimited liability will not deter investment except in those corporations which impose a net cost on society, and that it is justifiable on the basis that shareholders yield considerable power over the direction of the corporation and should therefore be made to direct their corporations to behave in a socially responsible manner. Otherwise they should bear responsibility themselves. As a system of unlimited liability, pro rata liability is advocated on the basis of influence exerted by shareholders in order to affect the act attracting liability. It could be argued that this form of unlimited liability could transform even the most reluctant shareholders into green activists. Such an approach would also lead shareholders to monitor the conduct of the corporation and to propose green resolutions to prevent and mitigate any potential environmental harm from which liability would ensue.

LEGAL RESPONSES TO HUMAN-WILDLIFE CONFLICT: The Precautionary Principle, Risk Analysis and the 'Lethal Management' of Endangered Species

Evan Hamman, Katie Woolastin and Bridget Lewis*

Abstract

Sharks can kill, wolves and bears can maim, and bats and birds can spread disease. Human existence has a long history of such conflicts. But as our populations and activities expand, human-wildlife encounters are an increasingly common source of tension. Some species pose a risk to humans, including through the spread of disease, but may also be endangered or at risk of extinction themselves. In such cases, there is a duty to conserve (nature), but also to protect (the public). Deciding how to respond requires decision-makers to make difficult but important value judgments. This article searches for ways to improve the legal processes for managing these unique situations of human-wildlife conflict. It investigates whether principles of international environmental law and human rights can be part of the solution, and if so, to what extent. The analysis concludes that one of the foremost roles for law is to prescribe processes for decision-makers which are rational, balanced and transparent. Existing principles like the precautionary principle are relevant, but they are only part of a broader risk analysis which must also account for human rights, communities and cultural values.

Introduction

Culling wildlife to protect against livestock loss, disease or risk of injury is highly contentious.[1] The debate is muddied by various issues relating to animal welfare, rights to

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[1] In this article, we use both the term 'cull' and 'lethal management' although there are noted differences between the two. Culling generally refers (rather colloquially) to deliberate attempts to reduce population sizes, whereas lethal management is a broader term which can extend to individual animals that pose a risk to human interests in some form.

culture, health and other human rights as well as the potential for environmental damage.[2] Nevertheless, lethal management is increasingly being viewed as an anthropocentric 'precautionary' measure to avoid the infliction of injury or disease to humans, even where the species concerned is endangered or threatened. In January 2014, for instance, the Australian Government allowed the lethal control of endangered shark species off the coast of Western Australia claiming it was in the 'national interest.' [3] Following, a 'rigorous examination' of the proposal, the Western Australian Environmental Protection Agency eventually recommended the program not go ahead.[4] In other Australian states the practice of drum-lining[5] continues unabated.[6] Likewise, in the United States, State and Federal agencies have lethally controlled hundreds of endangered mountain lions due to 'depredation complaints on livestock and on pets and [also] because of concerns for human safety.'[7] Gray wolves in the United States and Canada have also been targeted for similar reasons.[8]

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[2] P Dickson and WM Adams, 'Science and Uncertainty in South Africa's Elephant Culling Debate' (2009) 27(1) Environ Plann C Gov Policy 110.

[3] For a copy of the 'Statement of Reasons' for the exemption, see Commonwealth of Australia 'Statement of Reasons for granting an exemption under section 158 of the Environment Protection and Biodiversity Conservation Act 1999 (Cth) <www.environment.gov.au/epbc/notices/pubs/158-statement-shark-drum-line-deployment.pdf> accessed 1 November 2015.

[4] Western Australia Environmental Protection Authority, 'EPA recommends Shark Hazard Mitigation Drum Line proposal should not be implemented' (11 September 2014) <http://www.epa.wa.gov.au/news/mediastmnts/pages/eparecommendssharkhazardmitigationdrumlineproposalshouldnotbeimplemented.aspx>; see also K Woolaston and E Hamman, 'The operation of the precautionary principle in Australian environmental law: An examination of the Western Australian White shark drum line program' (2015) 32 EPLJ 327.

[5] Drum-lining is the process of luring and catching sharks using a barrel (i.e. the drum) attached to the sea floor and baited with a hook. The practice is fatal to sharks.

[6] G Burke, 'Queensland: 621 sharks killed off Queensland coast through control program' ABC News (online) (21 August 2015) <http://www.abc.net.au/news/2015-08-21/621-sharks-killed-off-queensland's-waters/6715136>.

[7] E Rominger 'Culling Mountain Lions to Protect Ungulate Populations: Some Lives Are More Sacred Than Others.' Transactions of the 72nd North American Wildlife and Natural Resources Conference Wildlife Management Institute March 20 to 24, 2007 in Portland, Oregon, <www.wildlifemanagementinstitute.org>.

[8] M Musiani and PC Paquet, 'The Practices of Wolf Persecution, Protection, and Restoration in Canada and the United States' (2004) 54(1) BioScience 50. It should be noted that Gray Wolves are endangered in some areas but not others. In the Northern American state of Alaska, for instance,

The threat of disease can also result in a decision to cull endangered wildlife. In China, in the face of 'misinformation and media hysteria'[9] concerning the H5N1 'bird flu', culling of wild birds was reported despite evidence the practice is rarely successful.[10] At around the same time, the decision of a zoo in Thailand to euthanize dozens of tigers thought at risk of spreading the virus was particularly contentious.[11] In Australia, flying foxes have also been targeted to protect against equine influenza (the 'Hendra Virus') [12] notwithstanding the vital role flying foxes play in seed dispersal and pollination in some of Australia's World Heritage listed Wet Tropics.

In all these instances, human interests take precedence over species despite the fact that they are endangered. The point of this article is not to add to the ever-expanding thicket of literature surrounding animal welfare, animal rights and species justice.[13] Rather, it explores the narrower question of what *legal processes* ought to guide decision-makers in these instances of conflict. The issue of human-wildlife conflict has been well studied in the conservation literature,[14] however, discussion of these issues has largely been overlooked in the legal discipline. There is thus a need to consider how best to design legal responses to

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Gray Wolves are reported to be in 'healthy numbers'. See B Stallard, 'Gray Wolf stays endangered despite conservationists' request' Nature World News (online) (4 July 2015) <http://www.natureworldnews.com/articles/15484/20150704/gray-wolves-stays-endangered-despite-conservationists-request.htm>.

[9] BirdLife International (2008) 'The H5N1 avian influenza virus: a threat to bird conservation, but indirectly' <www.birdlife.org/datazone/sowb/casestudy/176> accessed 1 November 2015.

[10] C Feare 'Conservation implications of Avian Influenza' (2005) 14 RSPB Research Report.

[11] M Thornley 'Avian influenza ravages Thai tigers' (2008) 82(11) Australian Veterinary Journal 652.

[12] See for example, R Plowright, H Field, C Smith, A Divljan, C Palmer, G Tabor, P Daszak, and J Foley, 'Reproduction and nutritional stress are risk factors for Hendra virus infection in little red flying foxes (*Pteropus scapulatus*) (2008) 275 Proceedings of the Royal Society B: Biological Sciences 861.

[13] See for example, R Garner, A Theory of Justice for Animals: Animal Rights in a Nonideal World (Oxford University Press 2013);

[14] See for example, M Conover, *Resolving Human-Wildlife Conflicts: The Science of Wildlife Damage Management* (CRC Press 2001); R Woodroffe, S Thirgood, and A Rabinowitz (eds), *People and wildlife: conflict or coexistence?* (Cambridge University Press, 2005); KK Karanth, AM Gopalaswamy, R DeFries and N Ballal 'Assessing Patterns of Human-Wildlife Conflicts and Compensation around a Central Indian Protected Area' (2012) 7(12) PLoS ONE e50433, doi:10.1371/ journal.pone.0050433; and MM Draheim, F Madden, J-B McCarthy and ECM Parsons, *Human-Wildlife Conflict: Complexity in the Marine Environment* (Oxford University Press, 2015). Other relevant literature is referred to throughout this article.

human-wildlife conflict, particularly from a normative standpoint.[15] The issue is all the more worthy of discussion where it intersects with other legal norms such as human rights.[16] Moreover, in line with recent calls for improved evaluation of existing environmental jurisprudence (as opposed to the mass proliferation thereof),[17] whether existing principles of international environmental law and human rights can be marshalled to provide an effective solution is investigated.

This article is structured in three parts. Part One provides an overview of the existing literature surrounding human-wildlife conflicts. It defines 'conflict' and highlights the common thread which suggests societies respond to wildlife encounters in emotional and irrational ways. Part One also highlights the role of culture in both creating and responding to instances of conflict. Part Two introduces a new aspect to the debate, one which questions the 'lethal management' of endangered wildlife which pose a risk to humans (health or otherwise). There are several endangered species which have been the subject of deliberate 'state-sanctioned' controls (by either culling or lethal management) including the white shark in Australia, the Zanzibar leopard, wild birds in China, tigers in Thailand, the grey wolf in the United States, and flying foxes in Australia.[18] Each of these instances raises interesting questions about risk analysis and how decisions to euthanize an endangered species are actually made. Finally, Part Three examines a 'dual' role for the precautionary principle as a tool for assessing the risks to both humans and wildlife. This final part also raises the conflicting concerns about human rights (the right to culture, life and health in particular) and, in the end, suggests that more work is required to clarify the contributions that the precautionary principle and human rights can make to risk analysis and decision-making in situations of human-wildlife conflict.

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[15] J Smits, 'Redefining Normative Legal Science: Towards an Argumentative Discipline' (2009) 7 TICOM Working Paper 45.

[16] See for example, D Shelton, 'Resolving Conflicts between Human Rights and Environmental Protection: Is there a Hierarchy?' in E De Wet and J Vidmar (eds), *Hierarchy in International Law: The Place of Human Rights* (Oxford University Press 2012).

[17] P Martin and A Kennedy (eds), *Implementing Environmental Law* (Edward Elgar, 2015).

[18] As noted earlier, mountain lions in the United States (US) have also been subject to lethal management. Those instances would make an interesting case study of human-wildlife conflict and the legal responses thereof. However, they are not considered in this article given the inclusion of the Gray Wolf example which presents similar issues for discussion in the US context. For further information about the lethal management of US mountain lions refer to Rominger above (n 7) and for a good discussion of the issues, see C Papouchi, 'Effects of Sport Hunting Mountain Lions on Safety and Livestock' Mountain' *Mountain Lion Foundation* (online) 7 August 2006 <http://www.mountainlion.org/sport_hunting.asp>

I. Human- Wildlife Conflict

Humans interact with wildlife in many ways. Indeed humans have done so for many centuries. Such encounters can be positive or negative; however, often this interaction is considered as having a largely negative impact on wildlife. This impact can stem from interactions such as modifying or eliminating habitat as a result of development or agriculture, living alongside wildlife, and more obvious interactions such as hunting or taking wildlife for sustenance. The other consideration in this interaction, and one that can raise much more compelling arguments to a large portion of the population, is the impact that wildlife has on human populations. This impact is broad-ranging and can include loss of livestock and property, loss of time and money dealing with this loss and opportunity costs, where people forgo the economic or lifestyle choices due to impositions placed on them by the presences of wildlife or conservation of wildlife.[19] In addition to this, perhaps the 'least common but most emotive' threat from wildlife is the killing or endangering of people.[20]

A. Defining the Conflict

But how does one define human-wildlife conflicts? And how might human society recognise them when they occur? One generally accepted definition which followed the *International Union for the Conservation of Nature* (IUCN) *World Parks Congress* in 2003 provides that '[a conflict exists] when wildlife requirements overlap with those of human populations, creating costs both to residents and wild animals.'[21] Such a conflict may occur, for example:

> *…because a lion has attacked someone's livestock or a gorilla has raided a person's crops. The conflict also occurs when a person or community seeks to kill the lion or gorilla, or when a person retaliates against the authorities that are in charge of conserving wildlife and its habitat.*[22]

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[19] For a thorough discussion of the risk that wildlife pose to humans see S Thirgood, R Woodroffe and A Rabinowitz, 'The Impact of Human-Wildlife Conflict on Human Lives and Livelihoods' in R Woodroffe, S Thirgood, and A Rabinowitz (eds), *People and wildlife: conflict or coexistence?* (Cambridge University Press, 2005).

[20] Ibid, 1.

[21] IUCN World Park Congress (WPC), Preventing & mitigating human-wildlife conflicts (2003) WPC recommendation 20.

[22] F Madden, 'Creating Coexistence between Humans and Wildlife: Global Perspectives on Local Efforts to Address Human-Wildlife Conflict' (2004) 9(4) Human Dimensions of Wildlife 247, 248.

A similar definition is put forward by Conover: '[wildlife conflicts are] situations occurring when an action by either humans or wildlife has an adverse effect on the other.'[23] Others suggest that the nature of the conflict needs to be broken down further still and to consider costs to humans and costs to wildlife separately.[24]

A common aspect of most definitions seems to be the requirement for a 'conflict,' not merely an 'encounter'. There appears to be a need for a negative outcome ('costs' or 'adverse effects') to humans or wildlife or both. On the weight of the literature, and in the interests of moving towards a more substantive legal discussion, this article proposes a very broad definition and defines conflict as: any significant interaction between humans and wildlife which results in an adverse effect (including perceived effects) on either wildlife or humans or both.

The term 'adverse effect' is consistent with that used by Conover (above). The only other point to add, at least in the confines of this paper, is that it is important to be careful in distinguishing between the conflict and human responses to conflict. In many ways, responses are a separate form of conflict in and of themselves. Readers will note the inclusion of 'perceived effects' in the definition, as the literature reveals human responses to conflicts seem to be as much about 'perception' of conflict as it is about actual physical encounters.[25] Thus, this article discusses legal options for analyzing and managing the actual risk as well as the perception of risk.[26]

B. Responses to Human Wildlife Conflict

Responses to human-wildlife conflicts are continually shaped by history, politics and cultural practices and beliefs.[27] In many instances, humans are likely never to encounter a particular animal except perhaps in a zoo. Yet anxiety in relation to that animal, individually and collectively, can rise to levels where people cease to think or act rationally, or consistently with the science. Instances of 'dangerous' conflict are actually extremely rare. In fact, a

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[23] Conover above (n. 14) at 8.

[24] J Young, M Marzano, R White, D McCracken, S Redpath, D Carss, C Quine and A Watt, 'The emergence of biodiversity conflicts from biodiversity impacts: characteristics and management strategies' (2010) 19 Biodiversity and Conservation 3973.

[25] A Dickman, 'Complexities of conflict: the importance of considering social factors for effectively resolving human–wildlife conflict' (2010) 13 Animal Conservation 458, 458.

[26] In this article 'endangered species' is defined to be a species which has been included on the IUCN red list between the categories 'near threatened' to 'critically endangered'. See IUCN, 'Red List' <http://www.iucnredlist.org/> accessed 1 November 2015.

[27] H Wieczorek-Hudenko, 'Exploring the Influence of Emotion on Human Decision Making in Human–Wildlife Conflict' (2012) 17(1) Human Dimensions of Wildlife 16.

conservative figure puts the world-wide number of humans killed or seriously maimed by wildlife each year 'in the hundreds.'[28] Despite the media hype, for instance, the number of unprovoked fatal shark attacks in Australia sits at just under one per year.[29] Many more people are reported to die from drowning each year.[30]

While the likelihood of the risk of harm is therefore not great, decisions relating to interactions with wildlife are often not made purely on rational or 'risk-based' grounds. This is embedded in human culture and in human history. Hudenko, for instance, maintains that 'many people may have preconceived ideas about wildlife based on their upbringing, cultural influences or prior experience'. [31] Madden agrees, suggesting that very often, the level of public outcry is entirely disproportionate to the loss of livestock or property and that 'public outcry often has much more to do with perceptions of potential risk, as well as a lack of control over addressing the problem.'[32] '[E]ven a small level of wildlife damage,' Dickman reports 'can still elicit harsh responses.'[33] For Manfredo and Dayer this is the one 'common thread' in responding to human-wildlife conflicts.[34] In their words: 'the thoughts and actions of humans ultimately determine the course and resolution of the conflict.' [35] Human responses to these conflicts have the potential to have serious consequences. As Dickman concludes, 'conflict between humans and wildlife is one of the most widespread and

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[28] See Woodroffe, Thirgood, and Rabinowitz above (n 18) 14. More recent data, is available from the Food and Agriculture Organization of the United Nations (FAO). For example, in relation to human-lion encounters: FAO, 'Managing the conflicts between people and lion: Review and insights from the literature and field experience.' (2010) Wildlife Management Working Paper 13, <http://www.fao.org/docrep/012/k7292e/k7292e00.pdf> and also in relation to Africa as a whole: FAO, 'Human-wildlife conflict in Africa: Causes, consequences and management strategies' (2009) FAO Forestry Paper 157, <http://www.fao.org/docrep/012/i1048e/i1048e03.pdf>.

[29] Targonga Zoo, 'Australian Shark attack file' <https://taronga.org.au/animals-conservation/conservation-science/australian-shark-attack-file/latest-figures> accessed 1 November 2015.

[30] Ibid.

[31] Hudenko above (n. 27).

[32] Madden above (n. 22) at 250.

[33] Dickman above (n. 25) at 461.

[34] M Manfredo and A Dayer 'Concepts for Exploring the Social Aspects of Human–Wildlife Conflict in a Global Context' (2004) 9(4) Human Dimensions of Wildlife 317.

[35] Ibid, 317.

intractable issues facing conservation biologists today.'[36] Thus, effective strategies for decision-making are desperately needed.[37]

The influence of culture in creating and responding to wildlife conflict has received increased attention in the literature. So much so, in fact, that there is now a strong argument that the management of human–wildlife interactions should be 'informed by a more systematic understanding, use, and application of biological, social, and cultural knowledge and norms.'[38] In other words, society and culture, and people's perceptions about animals - rightly or wrongly - are *as important* to managing conflict as the raw scientific data. As Dickman reports, human perceptions of risk are 'heavily influenced by social and cultural perceptions, values history and ideology.'[39] To develop an effective response, an improved understanding of social and cultural perceptions of wildlife is needed, accompanied perhaps by attempts to influence those perceptions in ways which are beneficial for both species and communities.

The influence of human culture on wildlife is not always particularly positive and can sometimes result in irreversible ecological outcomes. Consider for instance, the case of the Zanzibar leopard (*panthera pardus adersi*) hunted to extinction on the African island of Zanzibar. To the people of Zanzibar, the Zanzibar leopard, (the largest wild carnivore on the Island) had long been a 'culturally salient animal.'[40] The leopard was protected from hunting during colonization by the British between 1920s and the 1950s. After the Zanzibar revolution in 1964, however, the new government sponsored an eradication program.[41] The decision-making process around the state-sponsored hunting of leopards seemed to have revolved largely around the 'cultural demonization' of the species.[42] Attacks on dogs, poultry, sheep goats and even people had been reported throughout the early half of the 20th century [43] and this 'undoubtedly generated a fear which was disproportionate to the

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[36] Dickman above (n. 25) at 458.

[37] Ibid.

[38] Madden above (n. 22) at 253.

[39] Dickman above (n. 25) at 459.

[40] M Walsh and H Goldman, 'Killing the King: The Demonization and Extermination of the Zanzibar Leopard' in E Dounias, E Motte-Florac and M Dunham (eds) *Animal symbolism: Animals, keystone of the relationship between man and nature?* (Éditions de Institut de recherché pour le développement, 2007) 1133-1182, 1151.

[41] H Goldman and M Walsh 'Is The Zanzibar Leopard (Panthera pardus adersi) Extinct?' 91(1) Journal of East African Natural History 15, 16.

[42] Walsh and Goldman above (n. 40).

[43] Ibid, 1138.

probability of their occurrence.'[44] It appears, however, that this fear was compounded by spiritual and cultural beliefs that witches exercised a form of 'magical control' over the leopards to harass and intimidate islanders.[45] Today, by most accounts, the Zanzibar leopard is believed to be now extinct.[46]

The case of the Zanzibar leopard reveals interesting insights about the nature of human and endangered wildlife conflict. More specifically, as Walsh and Goldman conclude, the case of the leopard illustrates:

> *…how attitudes and actions towards a salient animal can be configured and reconfigured in the context of a complex and changing political and ecological landscape – and how this can have disastrous and irreversible consequences for the animal concerned.*[47]

The demonization of other species has also influenced the creation of and human responses to wildlife conflict. The tiny *aye aye* (*daubentonia madagascariensis*) for example, is an endangered lemur native to Madagascar. Some communities have labelled the *aye aye* 'a harbinger of doom' and it is thought by some to bring bad luck to crop yields.[48] Some even believe that the entire village should be burned down if an aye aye is seen nearby.[49] As a result the aye aye has been hunted and this, in addition to other pressures, has caused a population decline of over fifty percent in the last thirty years.[50]

Interestingly, sharks are one species that have been revered but also respected throughout much of the world. Coastal communities in Eastern Indonesia, for instance, have a special spiritual relationship with whale sharks.[51] In Hawaiian culture, tiger sharks and

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[44] Ibid, 1139.

[45] Goldman and Walsh above (n. 41) at 16.

[46] Walsh and Goldman above (n. 40) at 1135; see also Goldman and Walsh above (n 41).

[47] Walsh and Goldman above (n. 40) at 1134.

[48] IUCN, 'Red List of Threatened Species' *Daubentonia madagascariensis* (aye aye) e.T6302A16114609, accessed 01 November 2015.

[49] Dickman above (n. 25) at 462.

[50] IUCN, above (n. 48).

[51] J Karam, D Dwyer, C Speed and M Meekan, Assessing traditional ecological knowledge of whale sharks (Rhincodon typus) in eastern Indonesia: a pilot study with fishing communities in Nusa Tenggara Timur, final research report for Dept. of Environment, Water, Heritage and the Arts, Canberra, tender 2007/01363 (Charles Darwin University, School for Environmental Research, 2008).

white sharks have historically been linked with 'influential spirits.'[52] Likewise, in the South Pacific island nation of Fiji, sharks are closely associated with spiritual beings. The Fijian god *Dakuwaqa*, for instance, was believed to 'manifest himself as a great shark'.[53] On the other hand, in Western cultures, sharks have tended to be demonized. Peter Benchley's 1974 novel 'Jaws' had a profound effect on some Western community psyches and one which the media has 'exploited' over the years.[54] Community reactions to sharks often flow through into government policy. Indeed, Australian scholar, Dr Christopher Neff, who has studied the politics of shark attacks, argues that the numbers can often be misrepresented. He maintains that shark bites are in reality totally random events but that they 'are not perceived that way.'[55]

As can be seen, human interactions with wildlife are multidimensional, and in particular are culturally constructed. This makes the task of developing an effective legal framework for dealing with these situations all the more challenging. Nevertheless, culture and cultural practices are highly relevant to all forms of wildlife management. Decision-makers must simultaneously walk a delicate line between cultural sensitivity and scientific rationalism. The issue of culture and species conflict is further considered against the backdrop of human rights in Part Three.

II. The Lethal Management of 'Dangerous' Endangered Species

A. What is 'Lethal Management'?

'Lethal management' or 'lethal control' are terms commonly used in lieu of 'persecution' of particular species.[56] 'Culling' is a narrower term and generally refers (in a colloquial way) to the intentional or state-sanctioned reduction of a population of species as a direct response

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[52] L Taylor, Sharks of Hawaii: Their Biology and Cultural Significance (University of Hawaii Press, 1993).

[53] JM Brunnschweiler, 'The Shark Reef Marine Reserve: a marine tourism project in Fiji involving local communities' (2010) 18(1) Journal of Sustainable Tourism 29-42, 37.

[54] B Francis, 'Before and after Jaws: Changing Representations of Shark Attacks (2012) 34(2) Great Circle: Journal of the Australian Association for Maritime History 44-64, 44.

[55] C Neff, 'Shark bite statistics can lie, and the result is bad policy' (16 January 2014) The Conversation (online) < http://theconversation.com/shark-bite-statistics-can-lie-and-the-result-is-bad-policy-21789>.

[56] Woodroffe, Thirgood, and Rabinowitz above (n. 19) at 2.

to human-wildlife conflict.[57] Lethal management measures can be undertaken by individuals and groups, and also by State bodies and private institutions (private zoos for instance).

There have been many past attempts to minimise conflict by introducing non-lethal methods to control wildlife, and these attempts are ongoing. They include such things as chemical repellents,[58] live trapping and relocation, and exclusion zones.[59] Unfortunately, evidence suggests that for many types of conflict a complete resolution through non-lethal means is highly uncommon, despite rigorous and continued scientific and social efforts.[60] As a result, it is often the case that the conflict escalates to the point where it is considered that the numbers of a species needs to be controlled using lethal means.

Lethal management is by no means an accepted practice. There are wide-ranging conservation impacts, together with moral arguments against its use. Lethal management has directly led to the extinction of several species.[61] More commonly, it has led to a very substantial contraction of their geographical ranges and steep reduction in population numbers. For example, it has been suggested that lethal management has had a significant effect on diminishing elephant numbers with some authors reporting in some parts of Africa 'problem animal control' is as prevalent a cause of death as ivory poaching .[62] There are likely to be various other effects on the species itself, such as effects on the locality of the species, behavioural effects and other indirect impacts.[63] In addition to this are the effects on other species and on the environment more generally when the species which is targeted is a 'keystone species'.[64]

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[57] Whilst culling is normally focussed on reducing a population of species, lethal management can also include controlling particular individuals or small groups of species that pose a risk to human safety or other interests.

[58] S Baker, S Ellwood, R Watkins and D MacDonald, 'Non-Lethal Control of Wildlife: Using Chemical Repellents as Feeding Deterrents for the European Badger Meles meles' (2005) 42(5) Journal of Applied Ecology 921.

[59] S Vantassel, 'Wildlife management professionals need to redefine the terms: Lethal control, nonlethal control, and live trap' (2012) 6(2) Human-wildlife Interactions 335.

[60] Dickman above (n. 25) at 459.

[61] Woodroffe, Thirgood, and Rabinowitz above (n. 19) at 3.

[62] For example, in Botswana from 1989-1996, 239 dead elephants were reported to have been lethally 'controlled' whereas 259 were 'poached.' See Woodroffe, Thirgood, and Rabinowitz above (n. at 18) 7.

[63] For a fuller discussion of the effects on wildlife see Woodroffe, Thirgood, and Rabinowitz above (n. 18) at 8-9.

[64] Woodroffe, Thirgood, and Rabinowitz above (n. 18) at 10.

Lethal management is often a decision based on emotion, which has been made as a result of a human fatality or injury. Killings are therefore often viewed as 'retaliatory.'[65] After undertaking various case studies and attempting to characterise the nature of attacks on humans, Quigley and Herrero were left with the 'overwhelming impression…that people have dealt with the subject in a manner that is commonly less than objective'.[66] This reflects the powerful influence of culture and emotion in response to conflicts discussed above.

In addition, the effectiveness of specific lethal management programs are frequently called into question. In China in the mid 2000's, bird flu was thought to be transmitted by migratory birds, including many endangered species. In 2005, at Qinghai Lake, hundreds of waterbirds were reportedly culled despite limited evidence of the birds carrying the disease or of their ability to transmit the disease to humans.[67] At around the same time, a private zoo in Thailand reportedly took the controversial 'pre-emptive' step of culling dozens of tigers, which were also believed to transmit the disease.[68] This was despite the World Health Organisation's position that they posed no serious risk to humans.[69]

Notwithstanding the challenges associated with lethal management, there are arguments that it does have a legitimate role to play in the protection of human safety and livelihood, as well as conservation.[70] Treves and Naughton-Treves, for instance, provide three reasons why lethal management may be valuable;[71]

1. If the lethal management is controlled, it does have the potential to reduce the threat to public safety and livelihoods, without the threat of extinction to the species.
2. Removing problem wildlife has the potential to pacify locals and deter them from instigating their own (and potentially more harmful) lethal management.

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[65] H Quigley and S Herrero, 'Characterization and prevention of attacks on humans', Systems' in Woodroffe, Thirgood, and Rabinowitz (eds) above (n. 18) at 28.

[66] Ibid, 47.

[67] BirdLife International above (n 9).

[68] M Thornley 'Avian influenza ravages Thai tigers' (2008) 82(11) Australian Veterinary Journal 652.

[69] 'Bird flu tigers facing mass cull' BBC News (20 October, 2004) <http://news.bbc.co.uk/2/hi/asia-pacific/3760560.stm>.

[70] It is noted that many animal welfare organisations are, however, likely to strongly disagree with the appropriateness of lethal management practices in most instances of conflict.

[71] A Treves and L Naughton-Treves, 'Evaluating lethal control in the management of human-wildlife conflict' in People and wildlife: conflict or coexistence?' in Woodroffe, Thirgood, and Rabinowitz above (n. 19) at 87.

3. The removal of some of a problem species may select for conspecifics [that is, a member of the same species] that naturally avoid human contact, forcing directional selection for a 'wilder population' of that species.

State-based lethal management, as a last resort, would appear to be more effective at protecting public health whilst maintaining a species than, say, villagers or farmers left to their own means. In addition, in some instances where public safety is at serious risk, lethal management may be unavoidable.

B. Lethal Management of 'Dangerous' Endangered Species

It seems paradoxical to consider the lethal management of an endangered species. Where a species is facing extinction, or indeed plays a valuable role in sensitive ecological processes, why would a State deliberately further its demise? Yet governments around the world have considered and implemented such programs. In North America, the Gray Wolf (*canis lupus*) was for a long time considered a direct threat to public safety and livestock. Where it once ranged over most of the Northern Hemisphere, human development has impacted its habitat and lethal persecution has threatened its survival.[72] Today, large populations of the wolf can be found only in northern Canada and Alaska.[73] Like the Zanzibar leopard (above) and the white shark (below) the gray wolf seems to have suffered from a form of state-sponsored demonization. Indeed, most of the campaigns to eradicate the wolf were government-led:

> *Until recently, bounty programs had been established, suspended, and reinstated in various North American jurisdictions. Wolves have been poisoned, trapped, snared, and shot from the ground and air. The most successful strategy used to exterminate wolves has probably been the poisoning campaigns that involved personnel hired by government agencies.*[74]

The endangered white shark (*carcharodon carcharias*) - also known as the 'great white' or 'white pointer' - has recently been the target of lethal control programs in Australian coastal waters. Although the Eastern Australian states of Queensland and New South Wales have been culling sharks for decades,[75] the West Australian Government recently sought approval for a three year lethal control (baiting and drum-lining) program in response to several recent

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[72] Musiani and Paquet above (n. 8) at 50.

[73] Ibid.

[74] Ibid.

[75] Australian Government, *Recovery Plan for the White Shark* (Commonwealth of Australia 2013) 35.

shark attacks.[76] Despite the scarcity of evidence on white shark behavior and populations, and particularly on distribution and migratory patterns,[77] Australian State and Federal agencies seem intent on lethal management without proper regard to the level or scope of the risk to humans.[78] Further, such unfocused control programs often catch marine species which pose no threat to human safety.[79] From 2014 to 2015, the Queensland shark control program killed over several hundred sharks as well as dozens of turtles, dolphins, whales and dugongs.[80]

Sharks are one species that, perhaps unlike any other, raise serious and very real fears in many people. This is despite the low risk of encountering one in the wild. As Kock and O'Riain point out:

> *...although sharks rarely injure or kill people, when they do it induces strong negative responses from the public, fueled by sensationalist media coverage.*[81]

In examining human responses to shark attacks, Peace questions traditional suggestions that 'anti-predator' responses to wildlife are somehow 'genetically hard-wired' into humanity. He argues that human reactions are heavily influenced by popular culture and by the media claiming that the fascination with white sharks 'lies in their capacity to keep us mindful that nature … was once a force well beyond the dictates of culture…'[82] Peace again raises the conflict between culture and species discussed above. Unlike other apex predators (lions, tigers, bears etc.), white sharks continue to generate fear, Peace writes, because they exist outside of the 'commanding process of [human] enclosure'.[83] When a species cannot be

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[76] Woolaston and Hamman above (n. 4).

[77] Australian Government above (n. 75) at 6.

[78] Woolaston and Hamman above (n. 4).

[79] G Cliff and S Dudley, 'Reducing the environmental impact of shark-control programs: a case study from KwaZulu-Natal, South Africa. (2011) 62 Marine and Freshwater Research 700.

[80] In total, 621 sharks were caught from 2014-2015 off the coast of Queensland, including: 8 White Sharks; 251 Tiger Sharks; 111 Bull Sharks; and 173 other Whaler Sharks. See ABC News, 'Queensland: 621 sharks killed off Queensland coast through control program' (21 August 2015) <www.abc.net.au/news/2015-08-21/621-sharks-killed-off-queensland's-waters/6715136>.

[81] A Kock and JM O'Riain, 'Living with white sharks: non-lethal solutions to shark–human interactions in South Africa in Conflicts in Conservation' in S Redpath, R Gutiérrez, A Evely, KA Wood and JC Young (eds) *Conflicts in Conservation: Navigating towards solutions* (Cambridge University Press, 2015) 237.

[82] A Peace, 'Shark attack! A cultural approach' (2015) 31 Anthropology Today 3, 7.

[83] Ibid.

tamed, it appears more likely that demonization and negative cultural reactions will strongly influence human responses. As examples, consider some of the other prominent community-led demonization and eradication campaigns including wolves in Norway[84] and bears in Japan.[85]

The potential for endangered species to spread disease, however, adds an entirely new dimension to the debate. In today's increasingly globalized world, infectious diseases, like bird flu, the Ebola virus, swine flu, equine influenza and so forth can have serious geopolitical and security ramifications in addition to public health impacts. The prompt lethal management of migratory species might be seen as 'precautionary' or 'pre-emptive' measure, even without strong evidence the disease can transmit to humans. China's 'Qinghai Lake' wild bird destruction (discussed above) is one example of this. In that instance, 'public paranoia' fueled emotional responses, even where there was 'general scientific consensus about the minor role that wild birds play in spreading the disease.'[86]

Another example is the Australian governments' approach of controlling endangered grey headed flying foxes thought to transmit equine influenza (Hendra Virus), which is fatal in horses and, in rare cases, humans.[87] One interesting aspect of the flying fox example is that bats are also critical for pollination of Australian forests, including its World Heritage Wet Tropics.[88] Nevertheless, immediate human concerns are 'always paramount', says the Queensland Government which implemented the program: '[we need to put] the health and wellbeing of the community as the central consideration regarding flying-fox roost management.'[89] All of this begs the question about how decision-makers should best approach decisions about lethal control of dangerous (or potentially dangerous) threatened

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[84] J Linnell, EJ Solberg, S Brainerd, O Liberg, H Sand and P Wabakken 'Is the fear of wolves justified? A Fennoscandian perspective' (2003) 13(1) Acta Zoologica Lituanica 27.

[85] J Knight, 'Culling demons: The problem of bears in Japan' in John Knight (ed), *Natural enemies: People-wildlife conflicts in anthropological perspective (Routledge, 2000).*

[86] BirdLife International, above (n. 9).

[87] R Plowright, H Field, C Smith, A Divljan, C Palmer, G Tabor, P Daszak, and J Foley, 'Reproduction and nutritional stress are risk factors for Hendra virus infection in little red flying foxes (*Pteropus scapulatus*)' (2008) 275 Proceedings of the Royal Society B: Biological Sciences 861.

[88] ABC News (online), 'Breeders want flying fox culls to stop hendra' (8 July 2008) <www.abc.net.au/news/2011-07-08/breeders-want-flying-fox-culls-to-stop-hendra/2787200>

[89] Queensland Government Department of Environment and Heritage Protection, 'Authorised flying-fox roost management' <www.ehp.qld.gov.au/wildlife/livingwith/flyingfoxes/roost-management.html> accessed 1 November 2015.

species, to reach decisions which best serve the long-term welfare of both humanity and the species in question.

III. Negotiating Conflict: Towards an Effective Legal Response

One of the foremost challenges of law, and indeed international environmental law, is to develop decision-making frameworks which are capable of negotiating competing interests. There is an important difference between law and policy worth noting here. On the one hand, policies set the goals (or strategies) that the government of the day intends to follow. But on the other hand, the law is, for all intents and purposes, the governmental tool for achieving those goals.[90] In many ways, the law ought not to prescribe particular outcomes, but to uphold, above all, proper process, which respects the discretion of democratically elected decision-makers, provided they act in good faith, in accordance with the Rule of Law,[91] and consistent with internationally recognised human rights norms.[92] Relevantly, the precautionary principle, a key feature of this paper, is particularly concerned with supporting proper decision-making processes as opposed to mandating particular outcomes.[93]

This last section considers what might contribute to a sensible legal framework where public health and conservation managers are faced with potential risks to both

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[90] For an interesting take on the difference between law and policy, see TJ Low, 'Law vs. public policy: a critical exploration' (2003, Summer) Cornell J of Law & P Policy 493+. *LegalTrac*. Web. 19 Jan. 2016.

[91] The ultimate role of law in democratic society is, of course, a contentious one. Indeed it has been since the early natural law theorists like Aristotle (384-322 BC) and later St Thomas Aquinas (1225-1274 AD). Enlightenment thinkers such as Hobbes, Locke and Rousseau progressed the role of law society in the pursuit of 'man's' individuality (over state suppression) and more recent philosophies have focused on the significance of concepts like due process and the theory of procedural justice. See for example, J Rawls, *A Theory of Justice* (Harvard University Press, 1971); and, for a different take: A Sen, *The Idea of Justice* (Harvard University Press, 2009). In the context of environmental law, the notion of procedural justice has been taken up, alongside issues of distributive justice, and justice as recognition under the movement of environmental justice. See for example, D Schlosberg, *Defining Environmental Justice: Theories, Movements, and Nature* (Oxford University Press, 2007) and G Walker, *Environmental Justice: Concepts, Evidence and Politics* (Routledge, 2012).

[92] Consistency with human rights norms is an important constraint on government decision-making and forms the basis for many of the arguments made in this article.

[93] E Fisher and R Harding, 'The precautionary principle and administrative constitutionalism: the development of frameworks for applying the precautionary principle' in E Fisher, J Jones and R von Schomberg (eds), *Implementing the Precautionary Principle: Perspectives and Prospects* (Edward Elgar, 2006).

humans and other species. It begins by considering existing principles of human rights and exploring instances of conflict between human rights and environmental law.

A. Conflict with Human Rights

International human rights treaties impose obligations on states to respect, protect and fulfil human rights.[94] These obligations are implemented through various legislative and policy instruments, and states are afforded a degree of discretion in the steps they choose to take.[95] The relationship between human rights and the environment is complex and multifaceted. While in many ways protection of the environment and human rights can be mutually supportive, in other situations the two objectives may be quite incompatible. In cases of human-wildlife conflict, tension arises between the competing objectives of protecting human rights and protecting the environment, particularly where the wildlife involved are endangered or threatened species. As shown in the case of the Zanzibar leopard (discussed above), there may also be cultural considerations which lead to the persecution and ultimate extermination of certain species or otherwise impact on the survival or welfare of wildlife.

Many human rights possess environmental dimensions. Most commonly this is understood as a relationship where good environmental conditions are a prerequisite to the fulfilment of human rights.[96] For instance, air and water pollution can represent a threat to the enjoyment of the rights to health[97] and to an adequate standard of living.[98] The obligations to protect and fulfil these rights would consequently require that states take steps to address pollution. In some situations, particular species of wildlife could pose a threat to the enjoyment of human rights. For example, the potential for animals to spread disease has obvious impacts on the right to the highest attainable standard of health.[99] Policies designed to manage populations of mosquitoes, flying foxes and other species considered

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[94] H Steiner, P Alston and R Goodman, *International Human Rights in Context* (Oxford University Press, 2007) 185-189.

[95] See *International Covenant on Civil and Political Rights,* opened for signature 16 December 1966, 999 UNTS 171 (entered into force 23 March 1976) Art. 2 ('ICCPR'); *International Covenant on Economic, Social and Cultural Rights*, opened for signature 16 December 1966, 993 UNTS 3 (entered into force 3 January, 1976) Art. 2 ('ICESCR').

[96] P Birnie, A Boyle and C Redgwell, *International Law and the Environment*, (Oxford University Press, 2009) 282; A Boyle, 'Human Rights and the Environment: Where Next?' (2012) 23(3) European J of Int'l L 613, 614.

[97] ICESCR above (n. 95) Art. 12.

[98] Ibid, Art. 11.

[99] Ibid, Art. 12.

dangerous to human health can therefore be justified from a human rights perspective on the basis that they are necessary to protect and fulfil the right to health. In serious cases of human-wildlife conflict the right to life may also be affected.[100] This right has been defined to include not just the right to be protected from arbitrary deprivation of life, but also to be protected against potentially life-threatening conditions.[101] The right would therefore seem to justify taking action such as relocating or eradicating species which pose a serious threat to human life.[102]

Other sorts of legally protected rights can also be indirectly implicated by human-wildlife conflict. For example, where feral or wild animals predate upon livestock or destroy crops this has the potential to interfere with economic rights such as the right to earn a living by work of one's choice or the right to an adequate standard of living.[103] For people who rely on subsistence agriculture, these impacts could interfere more directly with the enjoyment of rights to food, water and an adequate standard of living.[104] One of the justifications for the West Australian shark control program was the impact that the shark attacks (or the fear of shark attacks) were having on the local tourism industry and other local business interests.[105] Similar arguments have been made more recently in northern New South Wales following a spate of incidents which led to a reported downturn in trade for surf shops

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[100] ICCPR above (n. 95) Art. 6.

[101] Human Rights Committee, *General Comment 6: The right to life (Article 6 of the Covenant)* UN Doc HRI/GEN/1/Rev.9 (Vol 1) (30 April 1982); Human Rights Committee, *Communication No 67/1980*, UN Doc CCPR.C/17/D/67/1980 (27 October 1982) 20 ('*Port Hope Environmental Group v Canada*'); *Sawhoyamaxa Indigenous Community v Paraguay (Merits, Reparations and Costs*) (2006) IACHR (Ser C) No 146 [161]; *Budayeva and others v Russia* (European Court of Human Rights, Application Nos 15339/02, 21166/02, 20058/02, 11673/02 and 15343/02, 20 March 2008); *Oneryildiz v Turkey* [2004] XII Eur Court HR 657.

[102] Of course, paradoxically, the eradication of certain species 'in the name of human rights' may in fact have serious consequences for human health and well-being. For example, the removal of certain keystone marine life (like sharks) may disrupt wild fish stocks which impact upon the sustenance rights of remote islander and coastal communities in the region.

[103] ICESCR, above (n. 95) Arts. 6 and 11.

[104] Ibid, Art. 11.

[105] J McHugh, 'Sharks take a bit out of WA Surfing Business' *WA Today* (online) (19 March 2013) <www.watoday.com.au/wa-news/sharks-take-a-bite-out-of-wa-surfing-business-201303192gdah.html >; S Holland, 'Shark anxiety strikes WA behaviour and tourism hit, *WA Today* (21 November 2014) <www.watoday.com.au/wa-news/shark-anxiety-strikes-wa-behaviour-and-tourism-hit-20141121-1rifo.html>.

and other businesses in the affected towns.[106] This impact could be understood as an interference with people's economic rights, and governments (arguably) have an obligation to take measures to address these impacts.

There is another sense in which human social, economic and cultural rights are relevant to human-wildlife interaction. Rather than viewing wildlife as a potential threat to humans, certain species can also be regarded as a natural or cultural resource to which certain groups may claim rights to hunt or otherwise utilise. Most notably this applies to indigenous peoples who may hunt and fish particular species as part of their cultural practices or traditional forms of livelihood. Or certain species play important ceremonial, totemic or spiritual roles for certain peoples. In circumstances where culturally significant species are endangered or threatened, there will be additional reasons for protecting those species, and a broader range of considerations will be at play.

International human rights law protects people's cultural and religious rights in a number of ways. The International Covenant on Civil and Political Rights (ICCPR) and the International Covenant on Economic, Social and Cultural Rights, (ICESCR) both guarantee the right of peoples to self-determination, including the right to use natural resources.[107] The ICCPR also guarantees to all ethnic, religious and linguistic minorities the right to practice their culture.[108] The human rights affirmed in international law are expanded and explained in the *United Nations Declaration on the Rights of Indigenous Peoples* (UNDRIP), which, although voluntary, still requires that States assure indigenous peoples' rights to practice their cultures and customs, particularly with respect to their lands and waters.[109] Where traditional customs and practices involve the taking or use of particular species, such

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[106] T Forbes, 'Spate of shark attacks and close calls take toll on NSW north coast towns; surfers call for shark cull' ABC News (12 August 2015) <www.abc.net.au/news/2015-08-12/shark-attacks-close-calls-affecting-businesses-nsw-north-coast/6693080>

[107] ICCPR above (n. 95) Art. 1; ICESCR above (n. 95) Art. 1.

[108] ICCPR above (n. 95) Art. 27.

[109] United National Declaration on the Rights of Indigenous Peoples ('UNDRIP') adopted 13 Sept. 2007, Arts. 25 and 26. Similar rights are protected in the International Labour Organisation's *Indigenous and Tribal People's Convention*, opened for signature 27 June 1989, ILO Convention 169 (entered into force 5 September 1991) Arts. 4, 7, 15 and 23. The close relationship between indigenous peoples and biological resources is also recognised in the *Convention on Biological Diversity*, opened for signature 4 June 1992, 1760 UNTS 79 (entered into force 29 December 1993), see Preamble and Art. 10.

conduct would be protected by the UNDRIP and states would be required to make allowance for it in their domestic laws.[110]

In a post-colonial context, the justifications for permitting indigenous taking of certain species of wildlife are well-accepted.[111] It is also commonly asserted that indigenous hunting and fishing is part of a culture of environmental stewardship which is consistent with sustainability.[112] In such a context, human rights principles support decision-making which would permit a limited impact on the environment in order to fulfil recognised rights and correct historic injustice. However, it should not always be assumed that indigenous lifestyles are necessarily compatible with environmental conservation, and questions arise where indigenous peoples may be utilising species for more commercial reasons.[113] In such situations, rights to maintain traditional practices and to pursue economic self-reliance must be balanced against the demands of sustainability.[114]

There are other cultural uses of nature and wildlife which may not be so easily justified on human rights grounds, and for which decision-making frameworks are more problematic to identify. For example, recreational hunting could be argued to be an exercise of cultural rights, although this argument has been rejected in a number of cases where it was held that a ban on hunting did not amount to a breach of human rights.[115] It might also

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[110] UNDRIP above (n 112) Arts. 11, 24, 25, 26, 31. In Australia, Indigenous rights to hunt or fish are partly protected in a range of state and federal legislative instruments including the Native Title Act 1994 (Cth); Aboriginal and Torres Strait Islander Communities (Justice, Land and Other Matters) Act 1984 (Qld); and Torres Strait Fisheries Act 1984 (Cth).

[111] See UNDRIP above (n 112) *Preamble*, which recognises that Indigenous peoples have suffered historic injustices as a result of colonisation and dispossession of their lands, and recognises the need to promote Indigenous rights derived from cultural and spiritual traditions associated with those lands.

[112] Ibid; see also ILO Convention 169 above (n 112) Arts. 8, 17; *Rio Declaration on Environment and Development* UN Doc (1992) A/CONF.151/26 (vol I); 31 ILM 874, Principle 22.

[113] B Richardson, 'Indigenous Peoples, International Law and Sustainability' (2001) 10(1) Review of European Community and Int'l Environmental Law 1, 3.

[114] See for example, the *Convention on Biological Diversity* above (n 112) Art. 10, which obliges States to preserve traditional and customary uses of biological diversity that are compatible with conservation and sustainable use. The *Fur Seal Treaty* permitted the hunting of seals by indigenous peoples but placed limitations on the practice designed to prohibit hunting in commercial quantities of for commercial purposes: *Preservation and Protection of Fur Seals,* opened for signature 7 July 1911, 37 Stat 1542, TS 564 (entered into force 5 December 1911, terminated 23 October 1941) Art. IV.

[115] This was argued by the appellants in *Whaley and Another v Lord Advocate (Scotland)* [2007] UKHL 53. In that case the House of Lords rejected the argument that a ban on fox hunting represented a breach of the Human Rights Act 1998 (UK)

be argued that cultural rights entitle humans to use natural spaces such as forests, rivers or beaches for enjoyment. When these spaces present dangers to human welfare, issues arise as to the appropriate response. For example, beach culture plays a large part in Australian coastal communities but is potentially threatened by the impact of sharks, crocodiles, jellyfish or other dangerous species. These cultural uses of wildlife or wild spaces are not specifically protected by human rights law outside of an indigenous context, yet where human-wildlife interaction presents a risk to human rights then there may be a duty on states to take protective action.

From all of this, questions arise as to the threshold of risk to human rights which should trigger the obligation to take action and how the obligation to protect human rights should be balanced against other obligations. How ought the law manage the conflict between conflicting human rights and environmental laws? Human rights law does provide some guidance for how to balance competing human rights obligations[116] but little direction for how human rights duties should be reconciled with other competing interests such as the protection of the environment.[117] The suggestion is made, as will be further explained, that

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<www.publications.parliament.uk/pa/ld200708/ldjudgmt/jd071128/whaley-1.htm>; see also *Adams v Scottish Ministers* (2004) SC 665; *R (Countryside Alliance) v Attorney General* [2007] QB 305.

[116] See for example, the ICCPR above (n 95) which provides that the exercise of certain rights may be limited where it is necessary to protect public health, public order, national security or the rights of others (Arts. 12, 19, 21 and 22).

[117] In recent years, attempts at creating and protecting procedural rights with respect to the environment have been introduced. Consider for instance the implementation (predominately in Europe) of the *Aarhus Convention on access to information, public participation in decision-making and access to justice in environmental issues* opened for signature 25 June 1998, 2161 UNTS 447 (entered into force 30 October 2001) ('Aarhus') which has, at least to some extent, guaranteed procedural rights for people to access environmental information and challenge environmental decisions. Aarhus, however, does little to reconcile substantive instances of human rights and environmental conflict except to provide some legal avenues for the resolution thereof. Moreover, it should also be noted that a 'right to a healthy environment' has been enshrined in scores of national constitutions such as Ecuador (Title II, Chapter II) and South Africa (section 24) which guarantee some substantive protections with respect to 'healthy living' and 'sustainable use of resources' for humans, but as Lewis notes: '[many of these] constitutions employ a very wide range of language, and are open to interpretation. Even an apparently simple formulation such as 'right to a healthy environment' raises significant questions as to the scope and content of the right. How is a 'healthy environment' to be defined?' See B Lewis, 'Environmental rights or a right to the environment? Exploring the nexus between human rights and environmental protection' (2010) 8(1) Macquarie J of Int'l and Comparative Environmental L 36-47, 43. Thus, whilst the presence of a constitutional right may be positive, it is likely to provide little scope for managing conflict between environmental rights

other principles of international law are better equipped for identifying and assessing the potential risks. The most well-known and probably best suited of which is the precautionary principle.

B. The Precautionary Principle: What Role Could It Play?

The precautionary principle is often construed as a key principle of international environmental law.[118] Although various definitions abound, it generally provides that where there is a credible threat of serious or irreversible harm to the environment, scientific uncertainty should not be used as a reason for postponing action to prevent that harm.[119] The principle has multiple aspects and the confines of this paper do not permit a full canvassing of the extensive literature written about the precautionary principle.[120] It is sufficient for the present discussion that pursuant to the precautionary principle:

> *…authorities are prepared to tackle risks for which there is no definitive proof that there is a link of causation between the suspected activity and the harm...*[121]

Despite its growing presence in international agreements, there has been some reluctance to accept that the precautionary principle has been elevated to the status of a 'principle' of international law.[122] Doubts seem most prevalent in area of 'Anglo-Saxon' jurisprudence.[123]

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and other human rights. If anything, it is likely to cast further doubt in those instances. A major focus of this article, therefore, is on whether the precautionary principle - as a principle relevant to both human health and environmental law - can play a conciliatory role in instances of competing rights, not in securing further rights to begin with.

[118] S Alam, JH Bhuiyan, T Chowdhury and E Techera, *Routledge Handbook of International Environmental Law* (Routledge, 2013) 46-50; see also N de Sadeleer, *Environmental Principles to Legal Rules* (Oxford, 2002) ch 3.

[119] *Rio Declaration* above (n. 115) Principle 15.

[120] See de Sadeleer above (n. 121) at 275.

[121] N de Sadeleer, 'The Precautionary Principle in EU Law' (2010) (N°5) Aansprakelijkheid Verzekering En Schade 173-184 <http://ssrn.com/abstract=2293606> 173-174. It is important to point out that precaution is not the same as prevention. Prevention is itself a separate principle of international environmental law. For a discussion of the principle of prevention, which originates from the 1938 *Trail Smelter Case* is closely related to the polluter pays principle, see: See de Sadeleer above (n 121) 62-63.

[122] The various definitions of the principle appear to be an obstacle to general acceptance. See A Sirinskiene, 'The Status of Precautionary Principle: Moving Towards a Rule of Customary Law' (2009) 4 (118) Jurisprudence 349–364.

[123] Ibid.

Whether it forms part of 'customary international law' and thus a 'source' of international law under Article 38 of the Statute of the International Court of Justice is particularly contested in the literature. Some fifteen years ago, the Honourable Paul Stein AM, a former Judge of the New South Wales Land and Environment Court (in Australia), suggested that: 'the preponderance of opinion nowadays is that the principle has become part of international customary law'.[124] Indeed, some institutions like the International Tribunal for the Law of the Sea (ITLOS), appear to have treated it as part of customary law.[125] Today, however, the 'preponderance of opinion' is probably far less certain than Stein AM suggested. Whilst the use of the word 'principle' might imply immediate recognition as a principle of international law, whether it is or not is still largely up for debate.

Although the principle is most well known in environmental law, it also has a well-documented history in public health.[126] For example, the principle has been used to assist decision-makers when the effect of an action is uncertain such as in the early cases surrounding asbestos and occupational health and safety.[127] Further, the European Court of Justice (ECJ) has viewed the principle as 'an integral part of the decision-making processes leading to the adoption of any measure for the protection of human health.'[128]

Like environmental law, public health entails trade-offs between public benefits on the one side and private rights/competing public interests on the other.[129] Proponents of the use of precautionary principle in health and environmental law appear to hold very similar values, placing health of the natural world above economic development, private interests and political agendas. International treaties have addressed the principle this way. The 2001

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[124] The Hon. PL Stein AM, 'Are decision-makers too cautious with the precautionary principle?' (2000) 17(1) Environmental and Planning Law J 10.

[125] D Kazhdan, 'Precautionary Pulp: Pulp Mills and the Evolving Dispute between International Tribunals over the Reach of the Precautionary Principle' (2011) 38(2) Ecology Law Quarterly 527 at 533.

[126] World Health Organisation (WHO) 'The precautionary principle: protecting public health, the environment and the future of our children' (2004)
<www.euro.who.int/__data/assets/pdf_file/0003/91
173/E83079.pdf>; BD Goldstein, 'The Precautionary Principle Also Applies to Public Health Actions' (2001) 91(9) Am J Public Health 1358.

[127] See for example, the U.S case of *AFL-CIO v Hodgson,* 99 F.2d 467, 1974, where the Court found there was insufficient evidence surrounding the effects of asbestos and so the Occupational Safety and Health Administration had a right to regulate the use of the substance even where such regulation would adversely affect businesses.

[128] Case C-326/01, *Monsanto Agricoltura Italia*; see also de Sadeleer above (n. 124) at 178.

[129] L Gostin, 'A theory and definition of Public Health Law' (2007) 10 J Health Care L & Policy 1, 4.

Stockholm Convention on Persistent Organic Pollutants,[130] for instance, states the principle as a main objective in analysing the risk posed by persistent organic pollutants to both human health and to the environment.[131] Likewise, the principle has been used with respect to both the environment and health in the *Cartagena Protocol on Biosafety*.[132] The Cartagena Protocol allows parties to refuse the import of 'living modified organisms' on a precautionary basis where there is lack of scientific certainty on 'the extent of the potential adverse effects of a living modified organism on the conservation and sustainable use of biological diversity… taking into account risks to human health'.[133]

One major benefit of the precautionary principle in addressing the issues raised in this paper is that it can be applied to the assessment of risks to humans and species. When the principle is triggered (in instances of threats of serious or irreversible harm), questions might be asked: What is the real risk of a shark attack in this area? How likely is it that this species will transmit the disease to humans? What does the best available science say? Similarly, if a cull is proposed, it must be asked; is there a risk that culling this population will have a long term negative impact on the species? What does the best available science say? What other 'risk averse' options are there to a cull?

At this initial stage - information gathering - the precautionary principle has great value. By enabling an assessment of the extent of a particular risk, it ensures that health and conservation authorities act in a way which is informed by scientific and other cogent evidence. However, the gathering and evaluation of information - in and of itself - is not sufficient to guide decision-making in situations of human-wildlife conflict. Other principles are required which can assist in managing the risks identified.

The precautionary principle is part of the broader process of risk analysis which involves a two-part process of first: risk assessment; then followed by risk management.[134] While acquiring information about potential risks is a crucial first step, deciding how to manage those risks is considerably more problematic. As De Sadeleer puts it, managing the very 'public' question of 'how safe is safe?' is decidedly more difficult.[135] What can the precautionary principle contribute to this second part of the decision-making process?

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[130] *Stockholm Convention on Persistent Organic Pollutants* adopted 22 May 2001, entered into force 17 May 2004.

[131] Ibid, Art. 4.

[132] Cartagena Protocol on Biosafety to the Convention on Biological Diversity adopted 29 January 2000, entered into force 11 September 2003.

[133] Ibid, Arts. 10(6) and 11(8).

[134] De Sadeleer above (n. 124) at 173, 176 & 177.

[135] Ibid, 178.

In cases of human-wildlife conflict, it is argued that there are two limitations to the utility of the precautionary principle as a guiding concept for decision-making. The first is that the principle is not well-equipped for taking account of non-scientific, unquantifiable factors which may be relevant to a decision, such as cultural, religious or other indirect impacts. In particular, it does not easily accommodate the broader contexts in which a decision is made. As De Sadeleer admonishes: 'the risk is not just a question for the experts…' He continues;

> *[I]t takes on a distinct individual meaning once situated within its political social and economic context…accordingly a risk management decision must be taken by politicians.*[136]

The second limitation is that the precautionary principle does not include detailed guidelines for how competing interests are to be balanced. Where protection of an endangered species conflicts with protection of human health, for example, the principle does not explain what weight should be attached to these various interests or how to resolve the tension between them. It does set out the general principle that decisions ought to be precautionary in nature, and should try to avoid or minimise harm where possible, but it is less useful in judging how much harm ought to be tolerated. So, while the precautionary principle is very useful at the first step of risk analysis (risk assessment), other principles, norms and processes need to be incorporated to guide the second step (risk management). Those principles are lacking.

It is here that human rights principles may be of use. By incorporating human rights into the analysis decision-makers would not only be able to assess a broad range of human impacts, including social, cultural and economic impacts, but could also identify any relevant legal obligations which governments are required to uphold. Where a legally enshrined human right is at stake, decision-makers may be justified in giving priority to the protection of that human right over environmental impacts. At all times, however, this decision-making should be guided by the overarching purpose of the precautionary principle, which is to ensure that risks of harm are adequately assessed and decisions are made rationally, proportionately and cautiously. The gravity, likelihood and urgency of threats to both human rights and the environment must be assessed and any action taken in the name of human rights protections should be confined to that which is necessary and proportionate.

Take as a brief example of this discussion, the Chinese waterbirds instance referred to above. If such a circumstance were to arise again, Chinese authorities would be required, pursuant to law, to accumulate all accurate and reliable scientific information on the risk to

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[136] Ibid.

human health and, at the same time, information on the threats to the survival of the species by a possible act of human intervention (i.e. a cull). Then, at the second stage of the decision-making process the risks to both birds and humans could be appropriately managed by a broader base of decision-makers weighing the relevant human rights against the informed risks to the waterbird population and having regard to considerations of necessity and proportionality. The decision-making process, if time permitted, should of course be underpinned by public consultation and freely available information.[137]

The above thoughts are exploratory in nature and more work needs to be done to investigate the best methods for managing situations of human-wildlife conflict, particularly where lethal management of endangered species is concerned. While both the precautionary principle and human rights have a place, the exact relationship between them requires greater examination, as does the possible contribution of other closely-related principles of governance such as accountability and transparency.[138]

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[137] The principle of Public Participation and access to information is another principle of international environmental law that must be abided by. For a general discussion see for example, J Razzaque, 'Information, Public Participation and Access to Justice in Environmental Matters' in Alam et al above (n. 113) at137-153.

[138] The principle of accountability is inextricably linked to the proper implementation of the precautionary principle. See for example, the United Kingdom's Inter-Departmental Liaison Group on Risk Assessment 2002 report which noted: 'action(s) in response to the precautionary principle should accord with the principles of good regulation, i.e. be proportionate, consistent, targeted, transparent and accountable'. (Inter-Departmental Liaison Group on Risk Assessment) 2002, The Precautionary Principle: Policy and Application, UK Government, <http://www.hse.gov.uk/aboutus/meetings/committees/ilgra/pppa.htm>); see also D Peterson, 'Precaution: principles and practice in Australian environmental and natural resource management' (50th Annual Australian Agricultural and Resource Economics Society Conference in Manly, New South Wales, February 2006) 30 accessed 17 December 2014 at 26, 29 and 33. Likewise, the principle of transparency is closely linked to the precautionary principle (see Peterson, ibid). For a broader discussion of the relationship between accountability and transparency in decision-making see J Fox, 'The uncertain relationship between transparency and accountability,' (2007) 17(4-5) Development in Practice 663-671; also A Bianchi and A Peters, Transparency in International Law (Cambridge University Press, 2013) 5. In this article, we have adopted a broad view of the precautionary principle such that it would encapsulate aspects of both accountability and transparency (applying the precautionary principle correctly may in fact be evidence of applying those other principles), but of course there are other more nuanced elements of those principles which are worth exploring in their own right and in relation to one another.

Conclusion

Instances of conflict between humans and wildlife are nothing new. Such encounters predate civilization but with increasing global populations, resource use and urban sprawl, human interactions are becoming increasingly diverse.[139] For the most part, wildlife-human encounters are positive; enriching and inspiring human existence. Throughout the world, they are a source of economic and community wellbeing, deeply entrenched in many indigenous cultures. But to the modern world, they can also be an increasing negative source of conflict; threatening livestock and crops, spreading disease and providing competition for scarce natural resources.[140]

The argument in this article is that legal responses to instances of conflict are under-evaluated and in need of further academic attention. Through the lens of several brief examples, the more vexed question of lethal management of endangered species has been investigated, in part to show how complicated and multi-faceted such decisions can be. To avoid the proliferation of environmental law (for the sake thereof), an approach which sits within the existing frameworks of environmental law and human rights has been explored. The most relevant mechanism, the precautionary principle, is a crucial part of risk analysis, but it cannot fully accommodate the multitude of complex and interrelated factors which ought to be considered. It is suggested that human rights principles have a place within the decision-making framework, but further work is required to explore exactly how that framework ought to be constructed to ensure that actions taken are proportionate and scientifically justifiable.

[139] Woodroffe, Thirgood, and Rabinowitz above (n. 19) at13.

[140] Ibid.

LEGAL FRAMEWORKS FOR PAYMENTS FOR ECOSYSTEM SERVICES: Comparative Policy Approaches to Establishing, Regulating and Enabling Payments to Conserve Ecosystems

Sarah Jackson*

Abstract

Payments for Ecosystem Services (PES) have emerged as a prevalent tool for watershed conservation where the condition of upstream ecosystems affects downstream water users. PES schemes operate in different country contexts with varying degrees of government intervention through PES-specific legislation and policy. This article examines examples of legal frameworks for PES in Costa Rica, Ecuador, Colombia, Peru, the United States and the United Kingdom. Three broad categories of legal frameworks can be differentiated: i) 'Establishing' legal frameworks that create state-run PES schemes; ii) 'Regulating' legal frameworks for decentralized PES; and iii) 'Enabling' legal frameworks that stimulate PES without a PES-specific law. These examples demonstrate that PES in practice is not best described as a market-alternative to government regulation, but rather as a tool that is deeply integrated with legal and regulatory frameworks and used to achieve public policy goals.

Introduction

The ecosystem services concept recognizes that healthy ecosystems form irreplaceable natural infrastructure on which human health, economies, and cultures depend.[1] This concept has become a core feature of twenty-first century environmental policy[2] and a

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[1] The Economics of Ecosystems and Biodiversity (TEEB), Mainstreaming the Economics of Nature: A Synthesis of the Approach, Conclusions and Recommendations of TEEB (Earthscan, 2010); Millennium Ecosystem Assessment, Ecosystems and Human Well-Being: Current State and Trends (Island Press, 2010) 49; GC Daily (ed), Nature's Services: Societal Dependence on Natural Ecosystems (Island Press, 1997).

[2] E Gomez-Baggethun and others, 'The history of ecosystem services in economic theory and practice: From early notions to markets and payment schemes' (2010) 69 Ecological Economics 1209; JB Ruhl and J Salzman, 'The Law and Policy Beginnings of Ecosystem Services' (2007) 22(2) Journal of Land Use 157.

dominant influence in water management.[3] An ecosystem services approach emphasizes the need to better account for the full value of ecosystems in decision-making, including the design of economic instruments to represent the value of ecosystem services in the economy.[4]

Payments for Ecosystem Services (PES) is a term used to describe a range of resource-management tools that create positive incentives for the conservation of ecosystems, with the aim of securing ecosystem services such as provision of fresh water, carbon storage, maintenance of biodiversity and recreation.[5] The scope of programmes identified under the PES umbrella is broad,[6] with PES appearing to have 'become a catch phrase… [for] virtually all financial and legal incentive mechanisms for promoting conservation and good environmental citizenship'. [7] PES are especially prevalent as a tool for watershed conservation where the condition of upstream ecosystems affects downstream water users.[8] There are over 406 payments for watershed services programmes worldwide, with examples on every continent and in 29 countries.[9] These schemes have collectively supported the protection or rehabilitation of 365 million hectares of ecosystems critical to water services.[10] PES schemes have emerged in the context of a wide range of different legal frameworks, with varying degrees of government intervention through PES-specific legislation and policy.

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[3] BR Cook and CJ Spray, 'Ecosystem services and integrated water resource management: Different paths to the same end?' (2012) 109 Journal of Environmental Management 93.

[4] Cf TEEB above (n. 1).

[5] MM Sommerville, JP Jones and EJ Milner-Gulland, 'A revised conceptual framework for payments for environmental services' (2009) 14(2) Ecology and Society 34.

[6] S Wunder 'Revisiting the concept of payments for environmental services' (2015) 117 Ecological Economics 234.

[7] Cf Greiber, below (n. 27).

[8] M Smith and others, Pay - Establishing payments for watershed services (IUCN 2006); I Bond and J Mayers, *Fair deals for watershed services: Lessons from a multi-country action-learning project* (International Institute for Environment and Development, 2010); D Southgate and S Wunder, 'Paying for watershed services in Latin America: a review of current initiatives' (2009) 28(3) Journal of Sustainable Forestry 497; I Porras, B Alyward, and J Dengel, *Monitoring payments for watershed services schemes in developing countries* (International Institute for Environment and Development, 2013).

[9] G Bennett and N Carroll (eds), *Gaining Depth: State of Watershed Investment 2014* (Forest Trends, 2014).

[10] Ibid.

This article will examine the role of law in PES, with particular reference to water management. It will first provide a brief overview of the ecosystem services concept and the emergence of payments for ecosystem services. It will then present three broad categories of legal frameworks, differentiated in terms of their primary function with respect to PES:

(i) 'Establishing' legal frameworks that create state-run PES schemes;
(ii) 'Regulating' legal frameworks for decentralized PES;
(iii) 'Enabling' legal frameworks that stimulate PES without a PES-specific law.

Examples in the first category are most numerous and include Costa Rica and Ecuador. The second category includes recent laws introduced in Colombia and Peru and examples from the United States and the United Kingdom illustrate the third category. Analysis of these examples will demonstrate the different ways law can influence the development, design and implementation of PES.

I. Ecosystem Services and Payments for Ecosystem Services as an Emerging Environmental Policy Tool

Ecosystem services can be defined simply as 'the benefits people obtain from ecosystems'[11], or 'the many natural processes by which ecosystems, and the species that make them up, sustain and fulfill human life'[12]. Human understanding of ecosystem services can be traced as far back as civilization[13], but the concept has been applied to environmental policy more recently in the context of competing demands on increasingly depleted ecosystems. The Millennium Ecosystem Assessment (MEA) in 2005 was a defining work in the progression of the ecosystem services concept in international environmental policy. It categorized ecosystem services in four layers:[14]

(i) 'Provisioning services' such as food, fuel, timber and fresh water;
(ii) 'Regulating services' such as water filtration, flow regulation and flood mitigation by natural landscapes, carbon storage by forests and pollination of crops by insects;
(iii) 'Cultural services' that encompass aesthetic, spiritual and recreational values of nature; and

[11] Cf Millennium Ecosystem Assessment above (n. 1).

[12] Cf Daily above (n. 1).

[13] HA Mooney and PR Ehrlich, 'Ecosystem Services: a fragmentary history' in GC Daily (ed), *Nature's Services: Societal Dependence on Natural Ecosystems* (Island Press, 1997).

[14] Cf Millennium Ecosystem Assessment above (n. 1).

(iv) 'Supporting services', those fundamental ecosystem processes on which all other services depend, such as soil formation, photosynthesis, the water cycle and biodiversity.

The MEA found that 60 percent of the ecosystem services examined were being degraded or used unsustainably, posing a significant barrier to sustainable development goals.[15] With respect to water resources, failure to protect watersheds and dependence on large-scale built infrastructure compromises the ecosystem services that underpin water security, with negative impacts on water quality, quantity and timing of flows.[16] The critical role of ecosystems has been inadequately represented in legal, economic and governance institutions.[17] The value of most ecosystem services is not accounted for in the market, and in this way ecosystem services can be understood as 'externalities' in economic theory.[18] An ecosystem services approach attempts to broaden the lens of analysis to consider the value of ecosystems in their natural state and illuminates the full impact of trade-offs between alternate uses.[19] The Economics of Ecosystems and Biodiversity (TEEB) initiative has led research on strategies to shift economic incentives in favour of ecosystem protection.[20] Equipped with emerging knowledge about ecosystem service values, the policy challenge is then to design interventions to capture, or 'internalize', those values in decision-making.[21]

Policy interventions may include a range of tools, which in most cases are not fundamentally novel, but involve reforming existing laws, policies and economic instruments to target ecosystem services. Knowledge about ecosystem services can inform sustainable development planning[22] and new approaches to macroeconomic policy in the reform of

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[15] Ibid.

[16] H Cooley and others, 'Chapter 1: Global Water Governance in the Twenty-First Century' in PH Gleick and others (eds), *The World's Water (Volume 8): The Biennial Report on Freshwater Resources* (Island Press 2014); D Russi and others, *The Economics of Ecosystems and Biodiversity for Water and Wetlands* (Institute for European Environmental Policy & Ramsar Secretariat, 2013); cf Millennium Ecosystem Assessment above (n. 1).

[17] JB Ruhl, SE Kraft and CL Lant, *Law and Policy of Ecosystem Services* (Island Press 2007); GC Daily and others, 'Ecosystem services in decision-making: time to deliver' (2009) 7(1) Frontiers in Ecology and the Environment 21; cf TEEB above (n. 1).

[18] Ibid.

[19] RS de Groot, 'Environmental functions as a unifying concept for ecology and economics' (1987) 7(2) *The Environmentalist* 105; cf Gomez-Baggethun (n. 2); cf Daily and others above (n. 17).

[20] Cf TEEB above (n. 1).

[21] Ibid.

[22] P ten Brink and others, *Nature and its Role in the Transition to a Green Economy* (The Economics of Ecosystems and Biodiversity, 2012).

subsidy and tax schemes.[23] In this context, PES are attracting interest as mechanisms to translate external, non-market values of ecosystem services into financial incentives.[24] Successful PES programs are demonstrating that it is more cost-effective to invest in protecting forests and wetlands to naturally filter out pollutants, regulate river flows, recharge groundwater, and absorb flooding, compared to the cost of building storm walls and treatment plants.[25] The creation of economic incentives can also be effective where traditional regulations are challenging to enforce.[26] Increasingly, PES schemes are expected to complement command-and-control measures.[27]

There remain active debates about PES definitions, ideal PES design and how to distinguish PES from other economic instruments in environmental policy.[28] The 'Wunder definition' proposed in 2005[29] remains the most commonly cited, and was recently revised. Wunder's revised definition assigns five criteria to PES:[30]

(i) voluntary transactions;
(ii) between service users;
(iii) and service providers;
(iv) that are conditional on agreed rules of natural resource management;
(v) for generating offsite services.

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[23] Cf TEEB above (n. 1).

[24] S Engel, S Pagiola and S Wunder 'Designing payments for environmental services in theory and practice: An overview of the issues' (2008) 65 Ecological Economics 663.

[25] Cf Bennett and Carroll above (n. 9).

[26] Cf TEEB (n1).

[27] T Greiber (ed), Payments for Ecosystem Services: Legal and Institutional Frameworks (IUCN, 2009) 3.

[28] Cf Wunder (n 6); R Muradian and others, 'Reconciling theory and practice: an alternative conceptual framework for understanding payments for environmental services' (2010) 69(6) Ecological Economics 1202; L Tacconi, 'Redefining payments for environmental services' (2012) 73(1) Ecological Economics 29; J Farley and R Costanza, 'Payments for ecosystem services: from local to global' (2010) 69(11) Ecological Economics 2060; BK Jack, C Kousky and KRE Sims, 'Designing payments for ecosystem services: lessons from previous experience with incentive-based mechanisms' (2008) 105 (28) PNAS 9465; R Pirard and R Lapeyre, 'Classifying market-based instruments for ecosystem services: A guide to the literature jungle' (2014) 9 Ecosystem Services 106.

[29] S Wunder, 'Payments for environmental services: some nuts and bolts' (2005) CIFOR Occasional Paper #42.

[30] Cf Wunder above (n. 6) at 8.

This definition is meant to provide a model for comparative purposes, rather than a strict method for categorizing what are and are not PES.[31] In practice, 'service providers' vary, but are usually landowners who are in a position to affect the condition of the ecosystems on their land.[32] 'Service users' may or may not be directly involved in transactions, and in most cases are represented by government agencies paying for ecosystem services on behalf of the public. Where such agencies are mandated to implement PES and funding comes from mandatory taxes or levies, the voluntariness in criteria (1) will not be satisfied on the part of 'service users'.[33] As reflected in criteria (4), PES do not necessarily entail the trade of ecosystem services per se. Rather, often payments are made in exchange for some human activity on the part of 'service providers' that can be linked to resulting ecosystem services. Another feature of ideal PES are the outcome of 'additionality'; the payment should provide some additional environmental outcome above the status quo that would not be achieved if not for the payment.[34] In this way, PES should not be a substitute for the 'polluter pays principle' whereby polluters should bear the cost of compliance with regulatory obligations.[35]

The conceptual ideal of PES in economic theory is presented as a direct negotiation between 'users' and 'providers' to create a market that optimizes economic efficiency for the provision of ecosystem services.[36] This PES ideal has been criticized as a neoliberal approach that depends on the commodification of ecosystem services within a free market, which has not been achieved in practice and which is inconsistent with the natural features of ecosystems.[37] Furthermore, descriptions of PES based on economic theory have been criticized for 'not pay[ing] enough attention to the role of institutions and shared beliefs in

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[31] Cf Wunder above (n. 6); cf Engel, Pagiola and Wunder above (n. 24).

[32] Cf Engel, Pagiola and Wunder above (n. 24).

[33] A Vatn, 'An institutional analysis of payments for environmental services' (2010) 69 Ecological Economics 1245; S Schomers and B Matzdorf, 'Payments for ecosystem services A review and comparison of developing and industrialized countries' (2013) 6 Ecosystem Services 16.

[34] JE Salzman, *A Policy Maker's Guide to Designing Payments for Ecosystem Services* (Asian Development Bank, 2009); cf Engel, Pagiola and Wunder (n. 24); *Payments for Ecosystem Services Getting Started: A Primer,* (Forest Trends, The Katoomba Group and UNEP, 2008).

[35] U.K. Department for Environment, Food and Rural Affairs (DEFRA), *Developing the potential for Payments for Ecosystem Services: an Action Plan* (DEFRA, May 2013).

[36] Cf Wunder above (n. 29).

[37] SZ Shamer, *The Outcomes of Translating Neoliberal Environmental Theory: A Critical Analysis of Payments for Ecosystem Services* (Thesis submitted to the Faculty of the Graduate School of the University of Maryland, in partial fulfillment of the requirements for the degree of Masters of Science, 2014); D Goble, 'What are Slugs Good for? Ecosystem Services and the Conservation of Biodiversity' (2007) 22(2) Journal of Land Use 411.

shaping PES design and outcomes, even if these are critical under 'non-perfect' market situations'.[38] PES are not merely about financial incentives and 'should be understood as part of a broader process of local institutional transformation, rather than a market-based alternative for allegedly ineffective government'.[39] These are central issues in evaluating the role of law with respect to PES. The examples below will demonstrate how legal frameworks shape PES development, design and implementation, and link PES to broader institutions and policies for resource management.

In most cases PES have developed in the absence of an overarching PES-specific law.[40] Private PES arrangements between two parties require no legal preconditions beyond basic contract law and the absence of any legal provisions that prohibit PES schemes.[41] The contractual arrangements for individual PES agreements are the most direct basis of PES in law and the specific terms of PES contracts will most significantly influence the obligations of the parties and the outcome for ecosystem services.[42] Broader legal frameworks and government intervention through legislation and policy can also influence the development and implementation of PES in important ways.

PES participants suggest that a lack of supportive policy frameworks in many countries is a major barrier[43] and scaling up positive results of existing PES schemes may require a specific policy and legal framework.[44] Legal intervention in PES can also provide certainty and clarity for PES participants, encouraging participation.[45] Furthermore, it has been argued that markets can only encourage more efficient allocation of environmental resources if sound environmental policy and institutional frameworks are in place; in the absence of appropriate frameworks, market and policy failures are amplified and intensify environmental pressures.[46] In designing legal frameworks for PES, these considerations should be balanced against the potential downside of PES law creating increased bureaucracy and increasing transaction costs for PES.[47] The examples below demonstrate different levels of government intervention in PES, ranging from laws that define nearly

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[38] cf Cf Muradian and others above (n. 28), 1205.

[39] G Van Hecken and J Bastiaensen, 'Payments for ecosystem services in Nicaragua: do market-based approaches work?' (2010) 41 Development and Change 421, 421.

[40] Cf Greiber above (n. 27).

[41] Ibid.

[42] Cf Engel, Pagiola and Wunder above (n. 24); cf Greiber above (n. 27).

[43] Cf Bennett and Carol above (n. 9).

[44] Cf Greiber above (n. 27).

[45] Ibid.

[46] OECD Environmental Outlook to 2030 (OECD, 2008).

[47] Cf Greiber above (n. 27).

every aspect of state-run PES, to laws that regulate PES that are implemented at a local level, to legal frameworks that enable PES uptake without specifically mandating PES.

II. Law Establishing State-Run Payments for Ecosystem Services

In the spectrum of schemes under the PES umbrella, those with highest degree of government intervention are state-run PES programmes, which are created and operated by the government. The legal framework establishes the scheme itself and determines the ecosystem services targeted and who is eligible to participate. Generally, a centralized fund is established and a designated government agency is mandated to allocate payments according to prescribed criteria. Payments are typically conditional on land management activities such as retention of natural forests, ecosystem restoration, or sustainable agricultural practices. State-run PES schemes are often described as 'public' PES, distinguished from private or market-based PES where buyers and sellers of ecosystem services negotiate directly.[48] It can be understood as a type of subsidy used in macroeconomic policy to encourage positive externalities.[49]

Examples of state-run PES schemes can be found across different regions and in both developed and developing countries.[50] United States' federal agriculture policy dating back to the 1930's[51] and agri-environmental programs under European Union policy since the 1970s are characteristic of state-run PES by providing payments to farmers for voluntary conservation efforts.[52] China has a suite of multi-billion dollar national PES programs.[53] National PES schemes are particularly prevalent in Latin America, beginning with the introduction of Costa Rica's PES programme in 1997.[54] Mexico drew on the Costa Rican model in establishing a national programme 2003.[55] Another example is *Bolsa Florestal* in

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[48] Cf Vatn above (n. 33); cf Engel, Pagiola and Wunder above (n. 24); cf Greiber above (n. 27).

[49] Ibid.

[50] Cf Schomers and Matzdorf above (n. 33).

[51] Ibid.

[52] Ibid.

[53] Cf Schomers (n 33); J Qiu, R Liu, J Zhao and H Deng, 'Establishing eco-compensation mechanism in Bohai Sea waters under framework of ecosystem approach' (2008) 18 China Population, Resources and Environment 60; Y Xiong and KL Wang, 'Eco-compensation effects of the wetland recovery in Dongting Lake area' (2010) 20 Journal of Geographical Sciences 389.

[54] T Herbert and others, Environmental Funds and Payments for Ecosystem Services: RedLAC Capacity Building Project for Environmental Funds (RedLAC, 2010).

[55] Mexico began with PES to protect hydrological services, which has now expanded to encompass carbon and biodiversity services under the umbrella programme *ProArbol*: 'ProArbol' (*The REDD Desk*) <www.theredddesk.org/countries/initiatives/proarbol> accessed 1 October 2015.

Brazil's Amazonas State, which remunerates traditional communities and families for conservation and sustainable development activities.[56] Ecuador's *Proyecto Socio Bosque* has provided conservation incentives to rural landowners since 2008,[57] and influenced the development of a similar programme in Bolivia.[58] The Costa Rican and Ecuadorian examples are discussed in more detail below.

A. Costa Rica's Payments for Ecosystem Services Programme

Costa Rica's Payment for Environmental Services Programme (*Programa de Pago de Servicios Ambientales,* PPSA) is one of the most studied examples in the PES literature, and is internationally regarded as a success.[59] The PPSA was legally established via amendments to the national Forestry Law[60] in 1997 with the objective of reducing deforestation. It seeks to replace the traditional concepts of 'subsidies' and 'incentives' with 'economic recognition for ecosystem services',[61] and is implemented in furtherance of constitutional rights to a healthy and ecologically balanced environment.[62]

The Forestry Law established the National Forest Finance Fund *(Fondo Nacional de Financiamento Forestal*, FONAFIFO), as a semi-autonomous agency to manage the PPSA with oversight from the Ministry of Environment and Energy (*Ministro de Ambiente y Energía*, MINAE).[63] FONAFIFO enters into standardized contracts with landowners for four ecosystem services identified in the law: (i) carbon fixation, capture and storage; (ii)

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[56] 'Bolsa Floresta Program' (Amazonas Sustainable Foundation*)* <www.fas-amazonas.org/programa-bolsa-floresta/?lang=en> accessed 1 October 2015.

[57] 'Socio Bosque: Programma de proteccion de bosques [Socio Bosque: Forest Protection Programme]' (Ministerio del Ambiente, Gobierno Nacional de la Republica de Ecuador) <www.sociobosque.ambiente.gob.ec> accessed 4 October 2015.

[58] 'Socio Bosque comparte experiencias con delegación boliviana [Socio Bosque Shares Experiences with Bolivian Delegation]' (Gobierno Nacional de la Republica de Ecuador) <www.sociobosque.ambiente.gob.ec/node/690> accessed 4 October 2015.

[59] K Bennett and N Henninger, *Payments for Ecosystem Services in Costa Rica and Forest Law No. 7575: Key Lessons for Legislators* (World Resources Institute, 2009); I Porras and others, Learning from 20 Years of Payments for Ecosystem Services in Costa Rica (International Institute for Environment and Development, 2013).

[60] Law 7575 of 1996.

[61] 'Pago de Servicios Ambientales [Payments for Ecosystem Services]' (FONAFIFO, Ministerio de Ambiente y Energia, Gobierno de Costa Rica) <www.fonafifo.go.cr/psa/> accessed October 25 2015.

[62] Constitution of the Republic of Costa Rica, Art. 50.

[63] MINAE Executive Decree 30762 of 2002 designates FONAFIFO sole responsibility for managing the PPSA; prior to this management was shared with the National System of Conservation Areas.

protection of water for urban, rural or hydroelectric use; (iii) biodiversity conservation; and (iv) scenic natural beauty.[64]

The PPSA is voluntary and accessible to any private landowner with property title or possession rights, with a minimum land area of one hectare.[65] Payment levels and contract terms vary (between 5 and 15 years) depending on different categories of conservation activities.[66] For example, incentives in 2015 were set at US$ 398 per hectare per year for a five-year term for areas protecting water resources.[67]

An annual decree prioritizes budget allocations to specific categories of PES contracts.[68] For 2015, there were five overarching categories: (i) reforestation; (ii) natural regeneration; (iii) forest protection (with sub-categories, including protection of water resources); (iv) sustainable forest management; and (v) agroforestry.[69] Applications within these categories are further prioritized by a points system based on criteria such as conservation gaps (85 points), biological corridors (80 points), importance to water resources (80 points), and poverty (10 points).[70] Areas of importance to water resources must be selected based on basin plans[71], as identified by the MINAE Water Board,[72] such that the PPSA works cohesively towards broader water management objectives.

In 2001 tax law amendments established that 3.5 percent of the revenues accruing from Costa Rica's fossil fuel tax be allocated to the PPSA.[73] In 2006 water tariffs were increased significantly and 25 percent of revenues were dedicated to the PPSA, to be applied in strategic water catchment areas.[74] The Forestry Law also gives FONAFIFO broad powers to obtain financing from other sources.[75] To encourage private sector investment, FONAFIFO issues Certificates of Ecosystem Services in exchange for the voluntary 'purchase' of ecosystem services via financial contributions to the PPSA, which are promoted mainly on the basis of corporate social responsibility. [76] It is also expected that

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[64] Law 7575 of 1996, Art. 3(k).

[65] MINAE Decree No 39083 of 2015.

[66] Ibid.

[67] Ibid, Art. 4.

[68] For 2015, see MINAE Decree No 39083 of 2015.

[69] Ibid, Art. 1.

[70] Ibid, Art. 4.2.

[71] Ibid, Art. 7.

[72] Ibid, Art. 4.

[73] Law 8114 of 2001.

[74] MINAE Decree 32868 of 2006.

[75] Law 7575 of 1996, Art. 47.

[76] Cf Porras and others above (n. 59).

international funds from the United Nations REDD+ (Reducing Emissions from Deforestation and Forest Degradation) Programme will be channeled to the PPSA.[77]

B. Ecuador's Socio Bosque Programme

Ecuador's *Socio Bosque* (Forest Partners) is a national programme of conservation incentives that explicitly pairs poverty alleviation and ecosystem conservation, based on an ecosystem services framework. It was introduced in 2008 following the adoption of a new constitution setting out comprehensive provisions on environmental protection, including: public rights to a healthy environment[78]; existential rights of nature[79]; obligations of the state to protect natural heritage, including through the creation of financial incentives[80]; and a statement that ecosystem services shall not be subjected to appropriation, their use and delivery being regulated by the state.[81] *Socio Bosque* was established by decree[82] based on these constitutional principles and in accordance with a mandate set out in the National Development Plan 2007-2010.[83]

As the designated authority for *Socio Bosque,* the Ministry of Environment is authorized to enter into contracts with landowners to provide financial incentives for the conservation and protection of forests and páramo[84] ecosystems on their properties.[85] The Ministry of Environment is responsible for determining the level of incentives, the ecosystem services targeted, and the terms and conditions included in standardized contracts.[86] These details are set out in a series of ministerial agreements and consolidated in an operations manual.[87] Payments target three ecosystem services: (i) carbon storage, (ii) water cycle regulation and (iii) habitat for biodiversity.[88]

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[77] GK Rosendal and PJ Schei, 'How may REDD+ Affect the Practical, Legal and Institutional Framework for 'Payment for Ecosystem Services' in Costa Rica?' (2014) 9 Ecosystem Services 75.

[78] Constitution of the Republic of Ecuador, Art. 14.

[79] Ibid, Art. 71.

[80] Ibid, Art. 3.7.

[81] Ibid, Art. 74.

[82] Ministry of Environment Decree 169 of 2008.

[83] National Development Plan, 2007-2010 (National Government of the Republic of Ecuador 2007).

[84] Páramos are high altitude neotropical ecosystems that are particularly important for water resources in Ecuador.

[85] Ministry of Environment Decree 169 of 2008, Art. 3.

[86] Ibid, Art. 5.

[87] Unified Operation Manual, Socio Bosque Project (Ministry of Environment, 2012).

[88] Ibid, Art. 3.1b).

Participation is voluntary for landowners,[89] who must have land title to apply.[90] Payments are conditional not only on conservation of the land, but on commitments by participants to apply financial resources according to an investment plan to advance development goals such as health and education.[91] The term of contracts is 20 years, requiring participants to make a long-term commitment to conservation and demonstrating a long-term vision for the programme. Payment amounts range from US$ 60 per hectare per year for areas less than 20 hectares to US$ 0.70 per hectare per year for areas over 10,000 hectares[92], with higher levels of payments for smaller landholders in line with poverty alleviation goals.

The selection process for applications applies national environmental and social data to create spatial targeting maps identifying priority areas, ensuring *Socio Bosque* is consistent with broader sustainable development planning.[93] Applications are selected from within these mapped areas, and further prioritized based on a formula designed to weigh: (i) the level of threat to the area (from 1 to 6 points); (ii) the importance of the area to providing ecosystem services (from 0 to 9 points) and (iii) level of poverty (from 0 to 3 points).[94]

The majority of funds for *Socio Bosque* come from state resources allocated as part of the Ministry of Environment's annual budget. The Ministry is looking to diversify sources of funding, including: earmarking of new green taxes; fees attached to extractive industry licenses to compensate for impacts; voluntary contributions from corporations, possibly linked to some form of environmental offsetting; international cooperation funds; and REDD+ payments.[95]

III. Law Regulating Decentralized Payments for Ecosystem Services

The introduction of laws to regulate PES is a relatively recent and novel development in environmental law. Peru and Colombia have become leading jurisdictions with the introduction of legislation considered 'groundbreaking' in the PES policy landscape.[96] Under this type of legal framework PES schemes may be operated and funded by various parties

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[89] Ministry of Environment Decree 169 of 2008, Art. 2.

[90] Unified Operation Manual, Socio Bosque Project (Ministry of Environment, 2012) Art. 5.

[91] Ibid, Art. 8.

[92] Ibid, Art. 4.2.1.

[93] F de Koning and others, 'Bridging the gap between forest conservation and poverty alleviation: the Ecuadorian Socio Bosque program' (2011) 14(5) Environmental Science & Policy 531.

[94] *Unified Operation Manual, Socio Bosque Project* (Ministry of Environment, 2012) Art. 3.2 b).

[95] J Fehse, Private conservation agreements support climate action: Ecuador's Socio Bosque programme (Climate and Development Knowledge Network, 2012).

[96] Cf Bennett and Carroll above (n. 9) ix.

but the legislation establishes regulatory oversight of the schemes, including a national registry. The law authorizes and promotes voluntary, decentralized development of PES within regulatory limits, supports monitoring and enforcement, and provides legal certainty for the parties involved. The main objective of government intervention is to ensure coordination and consistency of PES with national strategies and state duties to manage natural resources. The Peruvian law is broadest, establishing national jurisdiction to regulate all PES, while the Colombian law provides national regulatory oversight for municipal PES for watershed protection. These examples are both elaborated on below.

A. Colombia's Legal Framework for PES

Colombia introduced regulations[97] in 2013 to promote and regulate the development of PES to protect municipal water supplies. The law was developed in accordance with a mandate under the National Development Plan 2010-2014, [98] which elaborated on the value of ecosystem services to the country and provided direction on designing strategies to integrate environmental considerations into decision-making. The Plan also refers to the constitutional duty of the state to conserve and protect ecosystems and their diversity, and the rights of the people to a healthy environment.[99]

Colombia's framework for natural resource management is set out in a general environmental law, which designates lead authority to the Ministry of Environment (Ministerio de Ambiente, Vivienda y Desarrollo Territorial - MAVDT), and delegates responsibilities such as watershed management to regional environmental authorities (Corporaciones Autónomas Regionales - CARs). Municipalities and departments are responsible for water provision and sanitation services. [100] The general environmental law requires departments and municipalities to allocate at least 1 percent of their annual income to the conservation of natural areas of strategic importance for municipal water supply.[101] In addition, any project that takes water directly from natural sources (for either human consumption, recreation, irrigation or industrial use), must allocate at least 1 percent of the total investment to the improvement and monitoring of the watershed that feeds the respective water source.[102]

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[97] Ministry of Environment and Sustainable Development Decree 953 of 2013.

[98] National Development Plan 2010-2014 'Prosperity for All', Government of the Republic of Ecuador.

[99] Constitution of the Republic of Colombia, Art. 79.

[100] Law 99 of 1993.

[101] Ibid, Art. 111.

[102] Ibid, Art. 43.

Amendments to this law, introduced in 2011, specifically permit these municipal funds to be applied towards the financing of PES schemes.[103] PES remains voluntary, as the funds may alternately be directed to land acquisition or to other watershed conservation activities.[104] Further to these amendments, regulations were issued in 2013 setting out rules and guidance for PES development, requiring collaboration between local government (municipalities and departments) and CARs, with oversight from MAVDT.[105]

Under the regulations, PES may be applied to protect ecosystem functions that generate hydrological services with benefits to the community, such as water regulation, erosion and sediment control, which must be linked to water resources that supply the municipal, district and regional aqueducts.[106] CARs define areas of strategic importance to water resources based on existing watershed management plans.[107] CARs then provide technical assistance to local governments to identify individual properties based on the criteria enumerated in the regulation, including the ecological quality of the property, the directness of the link between land use and water supplies, and the degree of threat to the area from anthropic pressures.[108]

Local governments approach landowners on targeted properties to negotiate voluntary contracts. The regulations also set- out guidance on: the selection of participants (including priority to those with lower incomes)[109]; the value of the incentive (cash or in-kind, considering opportunity costs)[110]; and contract terms and conditions (a list of issues that a PES contract must address, with a maximum term of 5 years).[111] Local governments must carry out periodic monitoring to verify compliance[112] and must register each contract with the CAR,[113] which submits an annual PES register to MAVDT.[114] MAVDT may provide funding and technical assistance to CARs to coordinate and promote PES.[115]

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[103] Law 1450 of 2011, Art. 210 amending Art. 111 of Law 99 of 1993.

[104] Ibid.

[105] Ministry of Environment and Sustainable Development Decree 953 of 2013.

[106] Ibid, Art. 3.

[107] Ibid, Art. 4.

[108] Ibid, Art. 5.

[109] Ibid, Art. 9.1.

[110] Ibid, Art. 9.2.

[111] Ibid, Art. 9.3.

[112] Ibid, Art. 9.4.

[113] Ibid, Art. 9.5.

[114] Ibid, Art. 14.

[115] Ibid, Art. 9.5, paragraph 4.

B. Peru's Legal Framework to Regulate and Promote PES

Peru introduced its *Payment for Ecosystem Services Law*[116] in 2014, establishing national oversight by the Ministry of Environment (MINAM) over all PES, whether publicly or privately funded. The purpose of the law is to promote, regulate and supervise voluntary PES for the conservation, restoration, and sustainable use of ecosystems to permanently secure the benefits they provide.[117] One of the objectives in developing the law was to encourage privately negotiated PES by providing legal certainty.[118] It is also a strong assertion of national jurisdiction over PES, in line with the powers and responsibilities of the state respecting the environment. The law declares that ecosystem services are part of the national patrimony[119] and that the promotion of public and private investments in ecosystem services is a matter of national interest and within the jurisdiction of the national government to oversee.[120] It also refers to constitutional provisions setting out that renewable and non-renewable natural resources are of the national patrimony,[121] obliging the state to conserve biodiversity and protect natural areas[122] and guaranteeing the rights of the public to a balanced environment.[123]

The law defines ecosystem services as the direct and indirect economic, social and environmental benefits people obtain from the correct functioning of ecosystems, with hydrological regulation of watersheds, maintenance of biodiversity, carbon sequestration, scenic beauty, soil formation, and genetic resources named as examples.[124] The scope of PES regulated under the law is defined broadly, including all schemes, tools, instruments and incentives applied to generate, channel, transfer and invest economic resources, monetary or non-monetary, for the conservation, restoration and sustainable use of the sources of ecosystem services.[125] Payments must be conditional on performance of actions to conserve, recover and sustainably use ecosystem services.[126]

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[116] Law 30215 of 2014.

[117] Ibid, Art. 4.

[118] 'Press release on PES Law' (Ministry of Environment): <www.minam.gob.pe/notas-de-prensa/conoce-como-funciona-la-recien-aprobada-ley-de-servicios-ecosistemicos/> accessed August 5, 2015.

[119] Ibid, Art. 3(b).

[120] Law 30215 of 2014, Supplementary Provisions, Clause 1.

[121] Constitution of the Republic of Peru, Art. 66.

[122] Ibid, Art. 68.

[123] Ibid, Art. 2.

[124] Law 30215 of 2014, Art. 3(b).

[125] Art. 3.

[126] Art. 5.

The law determines who is eligible to receive payments as 'contributors' to ecosystem services: (i) possessors or titleholders of lands; (ii) permit holders for renewable natural resources; (iii) NGOs under management agreements for protected areas; and (iv) others recognized by MINAM.[127] The law is more vague on who the 'beneficiaries' or buyers may be: any public or private, natural or legal person who obtains a benefit and compensates the contributor for the corresponding ecosystem services provided.[128] All public entities are authorized to raise financial resources to dedicate to PES[129] and local and regional governments are specifically permitted to finance PES from their budgets, and to receive and channel donations for PES.[130] This will be important to channeling REDD+ funds to local carbon projects that reduce carbon emissions through avoided deforestation. The law also requires MINAM to provide technical, administrative and financial support to local and regional governments to promote and develop PES.[131] MINAM must also establish a national Registrar, which is responsible for validating PES schemes as agreed between the contributor and beneficiary[132] and for maintaining a publically available register of PES contracts.[133]

At the time the law was passed over 40 PES projects were active in Peru, including both carbon sequestration and water quality and supply projects.[134] In the context of national environmental policy prioritizing water resources, MINAM is currently providing support for further development of PES in watersheds.[135] Also, a new water services law introduced in 2013 includes important provisions giving water utilities a mandate for PES: a new tariff will be dedicated to environmental compensation[136] and environmental compensation mechanisms for watershed management must be included in water utilities' operational plans.[137] Furthermore, in March 2015, MINAM signed an agreement with the national water

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[127] Ibid, Art. 3(d).

[128] Ibid, Art. 3(e).

[129] Ibid, Supplementary Provisions, Clause 3.

[130] Ibid, Art. 13.

[131] Ibid, Art. 12.

[132] Ibid, Art. 10.

[133] Ibid, Art. 9.

[134] Congreso aprobó ley que promueve los esquemas de retribución por servicios ambientales [Congress approves a law to promote PES] (Actualidad Ambiental) <http://www.actualidadambiental.pe/?p=23239> accessed August 5, 2015.

[135] cf Bennett and Carroll above (n. 9).

[136] Law Modernizing Water Services, Law 30045 of 2013, Art. 15.4.

[137] Ibid, Art. 3(b).

utilities regulator (SUNASS), to jointly develop policies and guidelines for PES financed by water tariffs to protect water sources.[138]

IV. Enabling Legal Frameworks with no PES-Specific Law

Legal frameworks can influence the development of PES in important ways without legal reform to regulate PES specifically. Government policy can also support PES without creating a centralized scheme operated by the state. Both the United States and the United Kingdom have been relatively active in the uptake of PES to protect watersheds, especially compared to other developed countries.[139] The legal and policy framework in both these cases creates an enabling environment that stimulates the development of PES. Water quality standards at the federal level in the United States and the Water Framework Directive in Europe have had similar functions as drivers for PES as a potentially cost-effective compliance mechanism.[140] In both cases the legislative framework adopts a results-based approach to compliance, which better enables PES as compared to traditional command-and-control- regulation. Funding support for PES, investment in research and capacity-building, and flexibility in municipal water infrastructure expenditures are also important factors that create an enabling environment for PES, as discussed below.

A. Source Water Protection via PES in the United States

New York City's investment in the conservation of the Catskills watershed is often cited as a leading example of PES.[141] The Catskills and Delaware watersheds provide 90 percent of the drinking water supply to New York City, with historically high water quality. In the 1980s concerns about pollution increased.[142] Around the same time, the federal *Safe Drinking*

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[138] MINAM press release: 'MINAM firma convenio con SUNASS para la implementación de Mecanismos de Retribución por Servicios Ecosistémicos Hidrológicos [MINAM signs agreement to implement PES for water]' March 11, 2015.

[139] Cf Bennett and Carroll above (n. 9).

[140] Cf Bennett and Carroll above (n. 9); A Inman and LED Smith, 'Payments for Ecosystem Services: A Review of Existing Mechanisms with Potential to Support Delivery of the Water Framework Directive Objectives' RELU Project RES-240-25-0018 Briefing Note (Centre for Development, Environment and Policy, 2012).

[141] Cf Salzman above (n. 34); cf Smith above (n. 8); E Mercer, D Cooley and K Hamilton, 'Taking Stock: Payments for Forest Ecosystem Services in the United States' (Forest Trends and US Department of Agriculture, 2011); T Gartner and others (eds), *Natural Infrastructure: Investing in Forested Landscapes for Source Water Protection in the United States* (World Resources Institute, 2013).

[142] Cf Smith above (n. 8).

Water Act [143] was introduced to set stringent standards for the quality of unfiltered water for human consumption. Under the new law a water filtration plant would be required if source water was below a certain quality, which could be avoided by watershed protection.[144] Faced with the challenge of compliance, New York City found that the cost of investing in watersheds to maintain and restore natural filtration was much lower than the cost of a new plant. A new filtration plant would have would have cost US$ 6 to 8 billion to build and would have required a two-fold increase in water bills to finance and operate, while watershed conservation costs US$ 1 to 1.5 billion over 10 years financed by a 9 percent tax increase in water bills and some federal and state grant assistance.[145]

Increased source water quality was achieved via PES contracts negotiated with land users in the watershed to reduce pollution and restore native vegetation. After a comprehensive stakeholder consultation process, a Memorandum of Agreement was signed by sixty towns, ten villages, seven counties and various environmental groups, to implement a number of distinct mechanisms that land users may opt into, tailored to different types of land and land uses. For example, forest landowners with at least 20 hectares of land are entitled to an 80 percent reduction in local property tax if they commit to a 10-year management plan. Farmers who opt in receive direct payments, but only if they enter into 10 to 15-year contracts with U.S. Department of Agriculture to remove environmentally sensitive land from production. The programme is voluntary and administered through the Watershed Agricultural Council.[146]

The Catskills example is not alone, with several other cities in different U.S. states using a PES approach to protect drinking water sources. The following cities all implemented PES schemes similar to New York City's to avoid building expensive new filtration plants: Boston, Massachusetts; Portland, Oregon; Portland, Maine; Seattle, Washington; Syracuse, New York; Auburn, Maine; Santa Fe, New Mexico and Denver, Colorado.[147] There is no specific law or government intervention mandating PES and laws for natural resource management also vary considerably in the different U.S. state jurisdictions. However, there are important features of the law and policy framework at the federal level that have facilitated this uptake of PES.

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[143] 42 U.S. Code § 300f.

[144] Cf Mercer, Cooley and Hamilton above (n. 141).

[145] Cf Smith above (n. 8).

[146] Cf Gartner above (n. 141).

[147] Cf Mercer, Cooley and Hamilton above (n. 141).

In addition to the introduction of results-based water quality standards that created a driver for PES, federal funding grants under the federal *Clean Water Act*[148] provide states with funding to allocate to local diffuse pollution reduction projects. The conditions on these grants are flexible enough to be applied towards PES, and have helped fund several municipal PES programs, including the Catskills example.[149] PES has also flourished in jurisdictions where regulations on water utilities are flexible enough to allow utilities invest in PES for source water protection rather than solely in traditional water treatment strategies.[150] More recently, the federal Environmental Protection Agency released a strategic agenda for green infrastructure[151] committing to funding, regulatory support, and guidance on best practices to encourage natural-infrastructure strategies, which could spur further development of PES.[152]

B. Policy Encouraging Investment in PES in the United Kingdom

PES for watershed conservation has emerged relatively rapidly in the U.K. over the past several years, particularly in England.[153] This is poised to scale-up further due to supportive policy from the U.K. Department for Environment, Food and Rural Affairs (DEFRA) and the Water Services Regulation Authority (OFWAT), the body responsible for the regulation of privatized water service companies in England and Wales.[154]

Historically, OFWAT hesitated to allow water service companies to pay landholders for watershed management, considering this a subversion of the 'polluter pays' principle.[155] This began to change following positive experiences by two utility-led investments in watershed services pilot projects (the 'Sustainable Catchment Management Program' and 'Upstream Thinking') and in 2009 OFWAT approved catchment management plans by more than 100 water companies representing more than US$ 100 million in funding for watershed

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[148] Federal Water Pollution Control Act (the 'Clean Water Act'), 33 U.S.C. §§1251-1387, s. 319.

[149] G Bennett, N Carroll and K Hamilton, *Charting New Waters: State of Watershed Payments 2012* (Forest Trends, 2013).

[150] T Gartner, J Mulligan, R Schmit, and J Gunn (eds) Natural Infrastructure: Investing in Forested Landscapes for Source Water Protection in the United States (World Resources Institute, 2013).

[151] *Green Infrastructure Strategic Agenda 2013* (United States Environmental Protection Agency, 2013).

[152] A Leonardi, 'Chapter 7: Europe' in G Bennett and N Carroll (eds), *Gaining Depth: State of Watershed Investment 2014* (Forest Trends, 2014).

[153] Ibid.

[154] Ibid.

[155] Ibid.

services. Although the majority of companies planned to simply 'investigate' watershed approaches between 2010 and 2015, this is anticipated to lead to PES development.[156]

DEFRA supported 11 PES pilot projects for catchment management between 2011 and 2013 and established an Ecosystem Markets Task Force to develop a plan to expand PES, including a best practice guide on PES design.[157] The resulting *Action Plan* recognizes that the 'Government and its agencies have a role in facilitating stakeholders including the private sector to develop PES'. [158] A relatively low level of government intervention is planned to achieve this, focusing on:

(i) capacity building;
(ii) disseminating best practices;
(iii) demonstrating 'proof of concept' for PES applications through piloting; and
(iv) removing barriers that could enable PES opportunities to develop.[159]

With respect to PES for water quality, DEFRA will also ensure that PES approaches are integrated within a coherent framework for catchment management across England.[160]

Following DEFRA's *Action Plan,* OFWAT began a review of the regulatory framework for water service companies to consider ways to encourage more innovative and sustainable solutions, including PES.[161] DEFRA also issued the *Strategic Policy Statement to* OFWAT in 2013, strongly in favour of investment in reducing pollution upstream rather than extracting pollution downstream.[162] It states the 'Government expects Ofwat's regulatory framework to enable water companies to pursue payments for ecosystems services schemes'.[163]

Broader policy is also less directly involved in supporting PES in the U.K., most significantly the E.U.'s Water Framework Directive (WFD). The WFD requires members of the European Union to meet water quality standards and to engage in integrated river basin management planning, but leaves the choice of specific policy interventions to individual states.[164] PES is viewed by policy-makers as a cost-effective compliance mechanism.[165]

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[156] Ibid.

[157] Payments for Ecosystem Services: A Best Practice Guide (DEFRA, 2013).

[158] Developing the potential for Payments for Ecosystem Services: an Action Plan (DEFRA, 2013) 13.

[159] Ibid.

[160] Ibid, 7.

[161] Developing the potential for Payments for Ecosystem Services: an Action Plan (DEFRA, 2013).

[162] DEFRA's Strategic Policy Statement to OFWAT - Incorporating Social and Environmental Guidance (DEFRA, 2013).

[163] Ibid, s. 3.13.

[164] Cf Bennett, Carroll and Hamilton above (n. 149).

[165] Cf Inman and Smith above (n 140).

European Commission guidance for implementing the WFD also emphasizes economic instruments and natural infrastructure.[166]

Conclusion

Legal frameworks for payments for ecosystem services are diverse and represent various degrees of government intervention in PES. This article has presented three categories of legal frameworks for PES and evaluated examples of each, ranging from laws establishing state-run PES schemes, to laws regulating PES through to enabling legal frameworks. These examples demonstrate that PES in practice is not best described as a market-alternative to government regulation, but rather as a tool that is deeply integrated with legal and regulatory frameworks and used to achieve public policy goals. The role of law can also be understood in terms of the state representing the public interest in ecosystem services, which is in some cases bolstered by constitutional rights and duties.

Legal frameworks can influence the development of PES in different ways. Most directly, the law can create state-run schemes. PES-specific laws can also enable the decentralized development of PES, establish regulatory oversight, and encourage PES uptake by providing legal certainty. Environmental quality standards can drive PES development if they allow flexible options for compliance. Supportive policies can provide guidance and funding for PES programmes' start-up, and law and policy reform can remove barriers to PES. The law can also create dedicated funding sources for PES. Legal frameworks can also affect the design and implementation of PES, in particular to ensure that PES works towards higher-level strategies for ecosystem services. The law can dictate all contract terms and conditions for state-run schemes. PES-specific laws can dictate a process for integrating national, regional and local planning for PES and also require that PES contracts include certain elements. Supportive policies can provide technical support and guidance on best practices for designing PES.

The examples of legal frameworks discussed here show an increasing trend in law and policy developments directed at PES. This trend will likely continue as part of broader efforts to better account for the economic value of ecosystem services in natural resource management and sustainable development planning. The upstream-downstream nature of water management is especially conducive to PES development, and legal frameworks can implement an ecosystem services approach to both provide water services and conserve watersheds more cost effectively. This is of critical interest as policy-makers seek ways to meet human demands, reduce costs and protect earth's ecosystems on which we depend.

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[166] Cf Bennett, Carroll and Hamilton above (n. 149).

ONE HEALTH AND BIODIVERSITY CONVENTIONS
THE EMERGENCE OF HEALTH ISSUES IN BIODIVERSITY CONVENTIONS

Claire Lajaunie and Pierre Mazzega*

Abstract

The article aims to show the emergence of health issues in biodiversity conventions along with the awareness of the interrelations between ecosystems, animal health and human health. It will first examine the evolution of the use of concepts related to health, the way they spread into the various conventions, and the trend and timing of this evolution. Then it will determine which international institutions or organizations are fostering the circulation of concerns related to health among the biodiversity conventions and how. Finally, the article focuses on the emergence of the concept of One Health in the conventions and on the reasons for this emergence.

Introduction

A 2015 report of the World Health Organization (WHO), United Nations Environment Programme (UNEP) and Convention on Biological Diversity[1] (CBD) about biodiversity and human health[2] acknowledges the complex interlinkages between biodiversity, ecosystem stability and infectious diseases: it highlights the various aspects of those links insisting on the potential benefits of strengthened partnerships between conservation and health, from

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[1] Which came into force in 1993.

[2] World Health Organization and Secretariat of the Convention on Biological Diversity, *Connecting global priorities: biodiversity and human health: a state of knowledge review* (WHO, SCBD, 2015) (pp364). Available at <https://www.cbd.int/health/stateofknowledge/> accessed 3 May, 2016.

the health of wildlife to human health. Nevertheless, the awareness of the importance of these interlinkages has been built up over years, integrating knowledge from scientific research through multiple advocacy channels, and in many areas further interdisciplinary research will be necessary. Among the new Sustainable Development Goals recently adopted by the UN, the third Goal 'Ensure healthy lives and promote well-being for all and at all ages' the target 3.3 clearly states:

> *By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases.*[3]

We choose to examine in detail how this awareness of the interrelations between ecosystems, animal health and human health evolved by tracking the emergence of health issues in biodiversity-related conventions.

In 2000, while there was an effective awareness that natural ecosystems on which human life depends were under threat, there was a lack of detailed information regarding the extent and the causes of the damage. The Secretary General of the United Nations thus decided to launch the Millennium Ecosystem Assessment (MA). The objective of the MA was to assess the consequences of ecosystem change for human well-being, with the aim to give a scientific basis to action for enhancing the conservation and sustainable use of diverse ecosystems. Presented as 'an international collaborative effort to map the health of our planet'[4], it also focused on the impact of the planet's health on human well-being.

The MA has been modelled on the Intergovernmental Panel on Climate Change (IPCC), which sets up effective assessment process in order to provide scientific technical and methodological advice to the parties to the United Nations Framework Convention on Climate Change (UNFCC) or to the parties to the Montreal Protocol on Substances that Deplete the Ozone Layer[5]. Similarly, the MA aims to provide scientific assessment input to the technical and scientific bodies of the Convention on Biological Diversity (CBD), the

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[3] UN General Assembly resolution 70/1 *Transforming our world: the 2030 Agenda for Sustainable Development*, A/RES/70/1 (25 September 2015) p16/35.

[4] KA Annan, We the peoples: the role of the United Nations in the 21st century (United Nations, Dept. of Public Information, 2000).

Available at <http://www.un.org/en/events/pastevents/pdfs/We_The_Peoples.pdf> accessed 3 May, 2016.

[5] IPCC Special report (1999) JE Penner, DH Lister, DJ Griggs, DJ Dokken, M McFarland (eds), *Aviation and the Global Atmosphere, Summary for Policymakers* (IPCC, 1999) 12, available at <http://www.ipcc.ch/pdf/special-reports/spm/av-en.pdf> accessed 3 May, 2016.

Ramsar Convention on Wetlands, the Convention on Conservation of Migratory Species of Wild Animals (CMS) and the Convention to Combat Desertification (CCD). Indeed, from the beginning the MA questioned the health of ecosystems and the related effects on human well-being. The purpose of this article is to identify how health issues have appeared in the conventions related to biodiversity. Those issues can concern human health through various topics (such as food security, unsustainable land-use or invasive species) but they are also related to ecosystems or animal health.

The article will first examine the evolution of the use of concepts related to health, the way they spread into the various conventions, and the trend and timing of this evolution. Then it will determine which international institutions or organizations are fostering the circulation of concerns related to health among the biodiversity conventions and how. Finally, the article focuses on the emergence of the concept of One Health in the conventions and on the reasons for this emergence

I. Ecosystem Health and Human Well-Being: The Ecosystem Approach

The ecosystem approach has been acknowledged by the Convention on Biodiversity since its Second Conference of the Parties in 1995. Affirming that conservation and sustainable use of biological diversity and its components should be addressed in a holistic manner, it was decided that the ecosystem approach should be the primary framework for action under the Convention[6]. Then, the 2000 MA supported an integrated approach for the analysis of the goods and services[7] provided by ecosystems. That approach is called an 'ecosystem approach'. It assumes from the start that human well-being is dependent upon a good management of ecosystems, taking into account the interlinkages between the ecological and social systems involved. The approach is based on the fact that information and knowledge of those interactions is a prerequisite for sound decision-making.[8]

A. Coordinating Complex Analyses

Indeed, in 2000, the decision V/6 of the Fifth Conference of the Parties (COP) to the CBD on the 'ecosystem approach' acknowledged the complexity of ecosystem processes and

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[6] Convention on Biodiversity COP II, 1995, Decision II/8, Preliminary consideration of components of biological diversity particularly under threat and action which could be taken under the Convention, §1. All CBD COP decisions are available at < https://www.cbd.int/decisions/cop/ > accessed 3 May, 2016.

[7] E Ayensu, DR van Claasen and M Collins, 'International Ecosystem Assessment', (1999) 286 Science 685-686.

[8] D Charron, 'Ecosystem Approaches to Health for a Global Sustainability Agenda', (2012) 9(3) EcoHealth 256-266.

functions. It highlighted the uncertainties involved, particularly those due to the interactions with the social systems[9], stating that:

> *[T]here is a need for flexibility in policy-making and implementation. Long-term, inflexible decisions are likely to be inadequate or even destructive. Ecosystem management should be envisaged as a long-term experiment that builds on its results as it progresses*[10].

It thus endorsed the 'ecosystem approach' advocated for adaptive management practices, and stated twelve Principles of the 'ecosystem approach' and their rationale[11]. The subsequent COP in 2002 affirmed the necessity of using the 'ecosystem approach' in national policies and legislation. In order to facilitate that application, it stated the importance of developing regional guidelines for the use of the 'ecosystem approach'[12]. The same year, the Strategic Plan for the Convention on Biological Diversity[13] reaffirmed the need of an implementation of the convention based on the ecosystem approach. That Plan also defined strategic goals and objectives which would be necessary to achieve a significant reduction of the rate of biodiversity loss by 2010 at the global, regional and national levels.

In response to the decision V/6 of 2000, a project entitled 'An Ecosystem Approach under the CBD, from concept to action' was initiated. This project led UNESCO, IUCN, Ramsar[14], Royal Holloway-University of London, World Wildlife Fund (WWF) and the Secretariat of the CBD to jointly organizing three regional pathfinder workshops. It is interesting to note that the combined report of those three regional workshops addresses the interpretation of the decision V/6: It outlines the theoretical and general nature of that

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[9] S Morand, JP Dujardin, R Lefait-Robin and C Apiwathnasorn (eds), *Socio-Ecological Dimensions of Infectious Diseases in Southeast Asia* (Springer, 2015).

[10] Convention on Biodiversity COP V, 2000, Decision V/6 Ecosystem approach, §10, available at < https://www.cbd.int/decision/cop/?id=7148 > accessed 3 May, 2016.

[11] See UNEP, CBD, *The Ecosystem Approach* (Secretariat of the Convention on Biological Diversity, 2004) 8-31 for the twelve principles and their rationales.
Available at <https://www.cbd.int/doc/publications/ea-text-en.pdf > accessed 1 May 2016.

[12] Convention on Biodiversity COP VI, 2002, Decision VI/12 Ecosystem approach, Preamble.
< https://www.cbd.int/decision/cop/?id=7148 > accessed 3 May, 2016.

[13] Convention on Biodiversity COP VI, 2002, Decision VI/26, Strategic Plan for the Convention on Biological Diversity.
Available at < https://www.cbd.int/decision/cop/default.shtml?id=7200 > accessed 3 May, 2016.

[14] The Ramsar Convention also known as the Convention on Wetlands, signed in 1971 at Ramsar, Iran. < http://www.ramsar.org/ > accessed 3 May, 2016.

decision and that V/6's implementation would be hampered without the development of operational tools and guidance[15]. In response to this point, a decision of the COP of 2004 detailed the rationale the 12 Principles, proposed implementation guidelines for each of those principles, and outlined cross-cutting aspects of the 'ecosystem approach'.

Among the objectives defined into the Strategic Plan of the CBD, one is highlighting the role of the CBD in promoting cooperation between all relevant international instruments and processes to enhance policy coherence[16]. That effort to promote such cooperation is illustrated by the organization in 2004 of an expert workshop[17] to foster cooperation and synergy between the CBD and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), as both Conventions address international concerns about biodiversity loss. That workshop led to a decision by the COP of CITES in 2004 about the synergy between CITES and CBD which endorsed the 'ecosystem approach' and to a decision regarding the synergies between CITES and the Convention for Migratory Species (CMS) as well[18].

As detailed in a 2004 UNEP report, a significant number of initiatives to improve synergies among the multilateral environmental agreements (MEA) and particularly among the biodiversity related conventions and Rio Conventions or between various organizations such as UN organizations, other institutions and initiatives (GEF, IUCN, World Bank),

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[15] RD Smith and E Maltby, Using the Ecosystem Approach to implement the CBD. A global synthesis report drawing lessons from three regional pathfinder workshops (Royal Holloway Institute for Environmental Research, Surrey, 2001) 16.

Available at <https://www.cbd.int/doc/meetings/esa/ecosys-01/information/ecosys-01-inf-02-en.pdf> accessed 3 May, 2016.

[16] Convention on Biodiversity COP VI, 2002, Decision VI/26, Strategic Plan for the Convention on Biological Diversity, notably §8 and Goal 1.2. Available at

< https://www.cbd.int/decision/cop/default.shtml?id=7200 > accessed 3 May, 2016.

[17] TRAFFIC, FFI, IUCN – The World Conservation Union, BfN and GTZ, UNEP and the CITES and CBD Secretariats, 'Promoting CITES-CBD Cooperation and Synergy', Workshop 20 – 24 April 2004, Bonn – Germany, Workshop Proceedings (pp241).

Available at < https://www.cites.org/common/cop/13/inf/vilm.pdf > accessed 3 May, 2016.

[18] Convention on International Trade in Endangered Species of Wild Fauna and Flora, COP 13, 2004, Decision 13.2 to 13.5, Synergy between CITES and CBD (notably 13.2). Available at

< https://cites.org/eng/dec/valid13/E13-Dec.pdf_> accessed 3 May, 2016, and document CoP13 Doc. 12.1.2 §4, available at < https://cites.org/eng/cop/13/doc/E13-12-1-1.pdf> accessed 3 May, 2016; see also Resolution 13.3, Cooperation and synergy with the Convention on the Conservation of Migratory Species of Wild Animals (CMS). Available at < https://cites.org/eng/res/13/13-03.php_> accessed 3 May, 2016.

through Memorandum of Understanding, Joint Work Programme or action plans[19] had already taken place.

B. Ecosystems Approach and Human Health

The link between ecosystem health and human well-being, which is at the core of the MA, can be extended to human health. This is in line with the definition of health given by the WHO:

> *Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*[20]*.*

Thus, a health synthesis of the findings of the MA (published in 2005 by the WHO) examines the links between ecosystems and human health, and how ecosystem change and management decisions may affect human health. It shows that causal links between environmental change and human health are complex because often they are indirect, displaced in space and time, and dependent on a number of modifying forces[21]. That complexity has already been demonstrated in previous works discussing the links among health, environment and sustainable development[22] according to the Rio Conventions and the Agenda 21, on the one hand, and on the environmental factors contributing to human health[23], on the other hand.

The 'ecosystem approach' supported by the CBD has then been progressively extended to human health. As stated by the WHO in the Health synthesis of the MA:

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[19] UNEP-WCMC, 'Synergies and Cooperation: A status report on activities promoting synergies and cooperation between Multilateral Environmental Agreements, in particular biodiversity-related conventions and related mechanisms' (2004). Available at < https//old.unep-wcmc.org/synergies-and-cooperation 208.html_> accessed 3 May, 2016.

[20] WHO, Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June 1946.
Available at <www.who.int/governance/eb/who_constitution_en.pdf> accessed 3 May, 2016.

[21] CF Corvalán, S Hales, and A McMichael, Ecosystems and Human well-being, Health Synthesis – A report of the Millenium Ecosystem Assessment (WHO, 2005).
Available at <www.millenniumassessment.org/.../document.357.asp> accessed 3 May, 2016.

[22] CF Corvalán, T Kjellström, and KR Smith, 'Health, Environment and Sustainable Development: Identifying Links and Indicators to Promote Action', (1999, September) 10(5) Epidemiology 656‑60.

[23] KR Smith, C Corvalán, and T Kjellström, 'How Much Global Ill Health Is Attributable to Environmental Factors', (1999, September) 10(5) Epidemiology 573‑84.

> *[E]cosystems are the planet's life-support systems for the human species and all other forms of life. The needs of the human organism for food, water, clean air, shelter and relative climatic constancy are basic and unalterable. That is, ecosystems are essential to human well-being and especially to human health (…)*[24]*.*

The 'ecosystem approach' to human health is also called Ecohealth approach[25]:

> *The Ecohealth approach is anthropocentric — managing the ecosystem revolves around seeking the optimal balance for human health and well-being, rather than simply on environmental protection. (…) The presence of human beings creates a new dynamic whereby people's social and economic aspirations need to be considered, particularly since people have the power to control, develop, and use their environment in a sustainable way, or to abuse it*[26]*.*

The interest of the ecosystem approach of health is to be able to integrate those various elements and techniques in order to raise the awareness of decision-makers regarding the complexity and the dynamic of the interlinkages between ecosystems and human health[27], to reveal the potential impacts of public policies[28] in various areas on this dynamic (land management, agriculture, climate change) and ultimately to provide the best way to adopt sound policies acknowledging those links. This approach appears mainly in the decisions of the COPs in relation to various topics such as agriculture, nutrition and food security, emerging diseases or non-communicable diseases.

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[24] CF Corvalván, S Hales, and A McMichael, Ecosystems and Human well-being, Health Synthesis, Millenium Ecosystem Assessment, 2005 (WHO, 2005); op. cit. p. 12.

[25] VA Brown, 'Principles for EcoHealth Action: Implications of the Health Synthesis Paper, the Millennium Ecosystem Assessment, and the Millennium Development Goals' Workshop Group, EcoHealth ONE, Madison, Wisconsin in (2007) 4(1) EcoHealth 95-98.

[26] J Lebel, *Health: an ecosystem approach* (International Development Research Centre, Ottawa, 2003) notably p. xii.
Available at <http://www.idrc.ca/EN/Resources/Publications/openebooks/012-8/index.html> accessed 3 May, 2016.

[27] BA Wilcox and DJ Gubler, 'Disease ecology and the global emergence of zoonotic pathogens, Environmental health and preventive medicine', (2005) 10 Environmental Health and Preventive Medicine 263–272.

[28] C Lajaunie and S Morand, 'A legal tool for participatory methods in land systems science: the Thai model of Health Impact Assessment and the consideration of zoonotic diseases concerns into policies', (2015) (n.11) GLP newsletter 30-33.

II. Biodiversity Liaison Group and the Circulation of Information and Knowledge

The intricate series of events and initiatives mentioned above led to a certain organization of the flow of information and knowledge at the international level (Figure 1). As seen, many initiatives had been taken to improve synergies between MEAs and especially between biodiversity and Rio Conventions prior to 2004. One of them resulted in the creation of a Joint Liaison Group (2001) constituting an informal forum for exchanging information between the three Rio Conventions.[29]

Nevertheless, the COP of the CBD in the Decision VII/26 mandated the Secretariat to establish a separate Liaison Group of biodiversity-related Conventions to enhance the coherence and cooperation in their implementation. That Biodiversity Liaison Group (BLG) links the secretariats of the seven biodiversity-related conventions: the Convention on Biological Diversity (CBD); the Convention on International Trade in Endangered Species of Fauna and Flora (CITES), the Convention on the Conservation of Migratory Species of Wild Animals (CMS); the Ramsar Convention on Wetlands (Ramsar); the UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage (WHC); the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) and the International Plant Protection Convention (IPPC). It constitutes a:

> *…platform to exchange information and to enhance the implementation at the national level of the objectives of each respective convention whilst also promoting synergies at the national level[30].*

In this context, the circulation of information is enhanced and strengthened by the position of the CBD: being part of both groups of Conventions, it bridges *de facto* the Joint Liaison Group (JLG) and the Biodiversity Liaison Group (BLG).

Figure One illustrates the emergence of health issues from the various Conventions ongoing Conference of Parties work and decisions, which will be discussed in the sections that follows.

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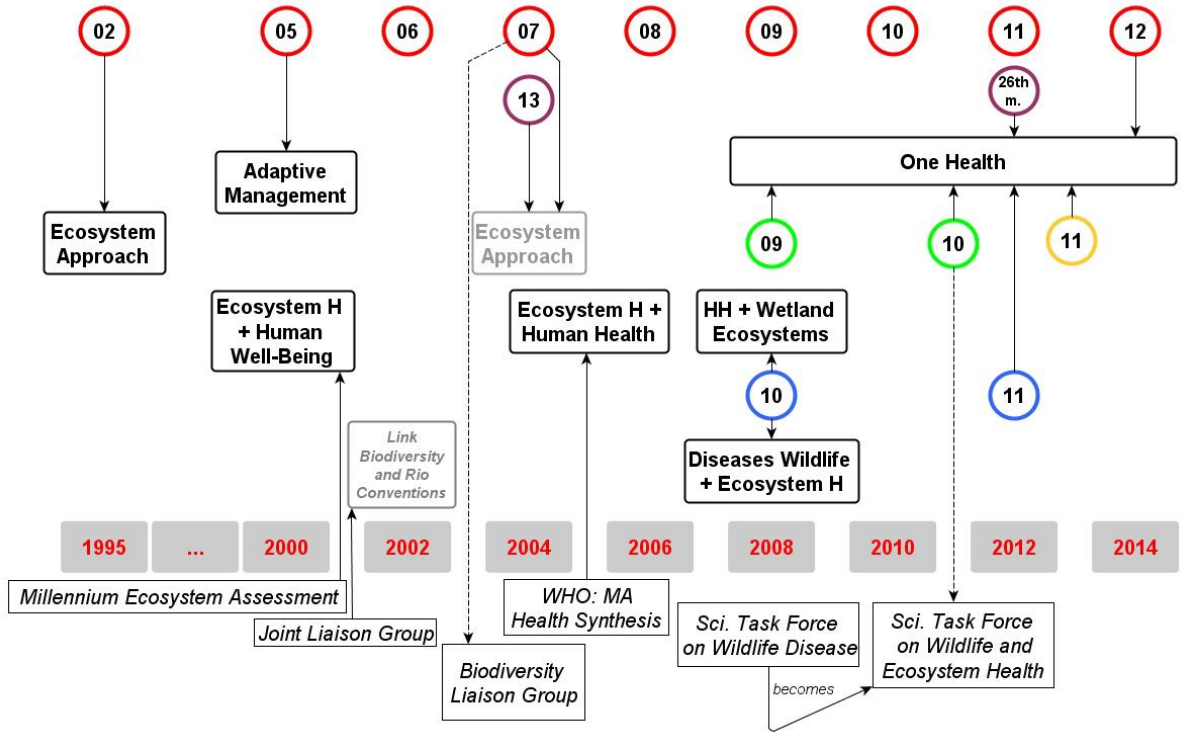
[29] The three 1992 Rio Conventions are: the UN Framework Convention on Climate Change (UNFCCC); the Convention on Biological Diversity (CBD); and the UN Convention to Combat Desertification (UNCCD).

[30] Modus Operandi for the Liaison Group of the Biodiversity-related Conventions, adopted on 4th September 2011, Geneva, § Guiding principles, 1st principle.
Available at <whc.unesco.org/document/107380 > accessed 3 May, 2016.

FIGURE 1. Summary presentation of key events associated with the emergence of health issues in the biodiversity-related Conventions. The color of each circle indicates the Convention (and the number within the circles, refers to the relevant Conference of Parties (COP) meeting): red = CBD; purple=CITES; green = CMS; blue = Ramsar; yellow: CCD. COPs are connected with the main emerging concepts cited in this study [using the following abbreviations: H = 'Health'; HH = 'Human Health'].



Regarding the cooperation among MEA and other organizations, another decision of the COP of the CDB of 2008 underlines the role of the Biodiversity Liaison Group (BLG) in avoiding duplication of efforts and improving the implementation of the biodiversity-related Conventions[31]. As such, the decision invites the BLG[32] to work on cross-cutting issues such

[31] Convention on Biodiversity COP IX, 2008, Decision IX/27 Cooperation among multilateral environmental agreements and other organizations.

Available at <https://www.cbd.int/decision/cop/default.shtml?id=11670> accessed 3 May, 2016.

[32] In order to promote policy coherence, the third meeting of the Biodiversity Liaison Group in 2005 mentioned that: 'A wider partnership could be constructed as an inner core-group and one or more supporting networks; Other organizations that might have a role in a core group, in addition to the five

as climate change and invasive alien species. It also calls for greater collaboration of the subsidiary scientific and technical bodies of the three Rio Conventions (CBD, CCD, and Framework Convention on Climate Change). The 2008 decision strongly supports collaborative partnerships such as the Consortium of Scientific Partners on Biodiversity. It also specifically highlights the collaboration between the executive secretary of CBD with the World Health Organization as well as with the Cooperation on Health and Biodiversity (COHAB) initiative33 on biodiversity and health-related issues, most notably to establish tools for capacity-building and awareness-raising in the health sector.

The same year, 2008, the CMS adopted a decision about emerging and re-emerging diseases in wildlife species stating that those diseases were linked to issues regarding the ecosystem health such as processes of landscape fragmentation, unsustainable land-use choices, pollution or other types of ecosystem disruption[34]. It expressly refers to a Ramsar decision of 2008 stressing the role of wetlands play for the support of both human and wildlife populations and how migratory species can be useful indicators of ecosystem health.

Also in 2008, it is important to note that the Ramsar COP adopted the Changwon Declaration. That declaration states that: 1) interrelationships between wetland ecosystems and human health should be a key component of national and international policies, plans and strategies, and 2) there is a need for co-management by both wetlands and health sectors of the links between wetland ecological character and human health.

The development of synergies among the biodiversity-related Conventions and among Rio Conventions is expressed by mutual references in the diverse COP decisions, by shared knowledge and by a common focus. This has led to further integration of the main cross-cutting issues related to biodiversity in the various Conventions. Moreover, those decisions are the result of coordination efforts between biodiversity-related Conventions and

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biodiversity-related conventions, include: UNEP and IUCN; FAO, Unesco, DESA; Selected major, global, mainstream NGOs, for example: World Wide Fund for Nature, Birdlife International, Wetlands International' (nb. these are the core partners of Ramsar) in the Third meeting of the Biodiversity Liaison Group, Gland, Switzerland, 10 May 2005, BLG3/REP, §12. Available at < https://www.cbd.int/blg/ > accessed 3 May, 2016.

[33] COHAB is a community of individuals and organizations working together to address the gaps in awareness, policy and action on the links between biodiversity and human health and well-being. The Initiative supports efforts to enhance human security through the conservation and sustainable use of biodiversity and the goods and services it provides; see < http://www.cohabnet.org/_> accessed 3 May, 2016.

[34] S Morand, K Owers and F Bordes, 'Biodiversity and emerging zoonoses', ch. 3, in A Yamada, LH Kahn, B Kaplan, TP Monath, J Woodall and L Conti, *Confronting Emerging Zoonoses, The One Health Paradigm*, (Springer, 2014) 27-41.

main international organizations, such as FAO, WHO or OIE[35] for instance, thus they reinforce the convergence of priorities as intended with the creation of the Biodiversity Liaison Group.

It is particularly significant regarding health issues especially from the creation of the Scientific Task Force on Avian Influenza and Wild Birds[36] in 2005 by the CMS in cooperation with the Agreement on the Conservation of African Eurasian Migratory Waterbirds (AEWA) in order to integrate migratory species and other environmental considerations into the international efforts to combat Highly Pathogenic Avian Influenza[37], stressing the link between wildlife health, conservation issues and human health[38]. The Task Force coordinated by the CMS Secretariat and FAO welcomed the CBD in 2006.

The BLG could also foster the harmonization of biodiversity-related Conventions' reporting at the global level for instance, with joint systems of information management between MEAs. It could also provide reflection about the clarity of the information needed and whether it should be quantitative or qualitative. At the national level it could lead to the creation of more integrated and better coordinated biodiversity information systems between national institutions, allowing a better cooperation between MEAs and their focal points within countries[39].

The Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES, 2012) considers the integration of health into its conceptual framework in order to address issues of biodiversity, ecosystem services and their impacts on human well-being and

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[35] Created in 1924, the 'Office International des Épizooties' (OIE) became the World Organization for Animal Health in 2003, but retains its ancient acronym.

[36] Comprised of representatives from UNEP, CMS, AEWA, Ramsar, BirdLife International, the International Council for Game and Wildlife Conservation (CIC), Wetlands International, the Wildlife Conservation Society and the Zoological Society of London, with the UN Food and Agriculture Organization (FAO), WHO and the World Organization for Animal Health (OIE) participating as observers.

[37] I Scoones (ed), Avian influenza: Science, Policy and Politics (Pathway to Sustainability) (Routledge, Earthscan, 2010).

[38] Convention on Migratory Species, COP 9, 2008, Resolution 9.8, responding to the challenge of emerging and re-emerging diseases in migratory species, including highly pathogenic avian influenza h5n1. Available at <http://www.cms.int/en/meeting/ninth-meeting-conference-parties-cms> accessed 3 May, 2016.

[39] UNEP-WCMC, 'Preconditions for harmonization of reporting to biodiversity-related multilateral environmental agreements', (June 2009 doc).

health[40]. Established as a science-policy interface mechanism, the IPBES aims to improve the quality and availability of policy-relevant information to support policy formulation and implementation. Governments and MEAs related to biodiversity and ecosystem services can make 'requests' to the platform. In that sense, the collaboration with the MEAs and particularly with the CBD will probably increase the synergy and the circulation of information.

III. One Health: Call for an Integrated Approach

The pace of the circulation[41] of information regarding health into the Conventions related to biodiversity has been accelerated by the development of agreements or initiatives between international institutions[42] or between the secretariats of the Conventions. Many of those initiatives and agreements were developed to improve international awareness and cooperation to prevent infectious disease pandemics, after various SARS and Avian Influenza episodes and in accordance with the WHO International Health Regulations (2005). One very significant initiative is the Global Early Warning and Response System for Major Animal Diseases, including Zoonoses[43] (GLEWS, 2006), a joint FAO/OIE/WHO initiative to enhance Early Warning and Response at international level. The purpose is to improve the sharing of information on disease alerts by coordinating the alert systems of the three institutions, while avoiding the duplication of efforts. The System aims to strengthen international preparedness for epidemics, including Zoonoses at the human/animal interface. Nevertheless, the animal health issues considered focused on domestic animal health.

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[40] IPBES/1/INF/9, outcome of an informal expert workshop on main issues relating to the development of a conceptual framework for the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, Bonn, Germany, 21-26 January 2013.

[41] 'The notion of circulation of legal models constitutes a framework of dynamic analysis of comparative law'; cf. I Alogna 'La circolazione del modello di sviluppo sostenibile. Prospettive di diritto comparato per un percorso multidirezionale', (2016) 1 (T1) Fondazione CESIFIN A Predieri, 14 pp, available on <www.cesifin.it> accessed 3 May, 2016. The aim of Circulex project is to study the circulation of norms and actor networks in Global Environmental Governance http://www.agence-nationale-recherche.fr/?Project=ANR-12-GLOB-0001 accessed 3 May, 2016.

[42] LO Gostin, 'Healthy Living Needs Global Governance', (2014) 511 Nature 147-150.

[43] FAO, OIE, WHO, *Global Early Warning and Response System for Major Animal Diseases, Including Zoonoses (GLEWS)*, (FAO, OIE, WHO, 2006). Available at <http://www.glews.net/2008/07/> accessed 3 May, 2016.

In the meantime, in 2008 the CMS drew attention to emerging and remerging diseases in migratory species and more generally to wildlife diseases[44] and their potential impact on animal and human health (see Figure 2 below). This problem is considered to be due to human unsustainable activities and habitat fragmentation. During its 2008 COP , a resolution of the CMS asked the its secretariat and the FAO Animal Health Service to convene a new Task Force on Wildlife Disease based on the principles governing the Scientific Task Force on Avian Influenza and Wild Birds, which was complimented at the occasion for its success[45]. The resolution requested the FAO to:

> *…integrate into their "One World One Health" approach, disease and management issues that can be brought to the attention of the Scientific Task Force on Wildlife Disease for consideration and action*[46]*.*

It seems to be the first reference to the 'One Health' approach into a biodiversity-related Convention's decision. However, in the same year, a Strategic Framework for Reducing Risks of Infectious Diseases entitled 'Contributing the One World One Health'[47] was drafted by the FAO, OIE, UNICEF, UN System Influenza Coordination, World Bank and the WHO.

It should be underlined that in 2010 an International Ministerial Conference on Animal and Pandemic Influenza was organized in Hanoi, Vietnam, under the auspices of the European Union and the United States of America, with the support of the UN System Influenza Coordination and other international organizations.[48] The conference gathered representatives of countries of the region, of regional bodies around the world and of the technical bodies of international organizations. It declared that country strategies and

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[44] P Daszak, AA Cunningham and AD Hyatt, 'Emerging Infectious Diseases of Wildlife Threats to Biodiversity and Human Health' (2000) 287 Science 443-449.

[45] P Rabinowitz, M Scotch and L Conti, 'Human and animal sentinels for shared health risks', (2009) 14(1) Veterinaria italiana, 23-24.

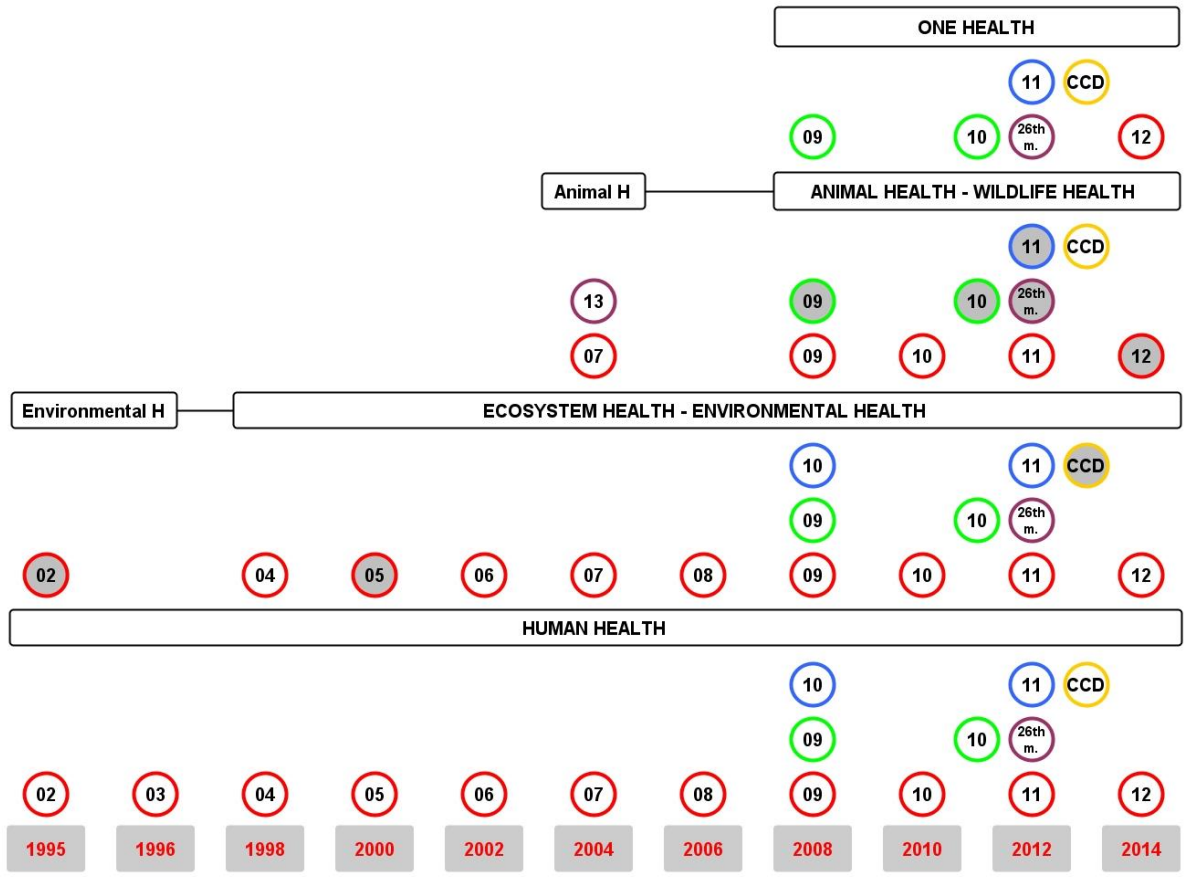
[46] Convention on Migratory Species, COP 9, 2008, Resolution 9.25 Scientific Task Force on Avian Influenza and Wild Birds, CMS's response to highly pathogenic avian influenza, subtype H5N1, §4.

[47] The 'One World, One Health' concept, which establishes a more interdisciplinary and cross-sectoral approach to preventing epidemic or epizootic disease and for maintaining ecosystem integrity, is a trademark of the Wildlife Conservation Society.

[48] C Lajaunie, S Morand and A Binot, 'The link between health and biodiversity in Southeast Asia through the example of infectious diseases', (2015) 8(1) Environmental Justice 26-31.

pandemic preparedness plans should be aligned nationally and regionally to address the global 'One Health' challenges.[49]

FIGURE 2. Under each health key-concept are listed the COPs to Conventions cited in the article, which rely on the concept in their decisions. The color of each circle indicates the Convention ((and the number within the circles, refers to the relevant Conference of Parties (COP) meeting): red = CBD; purple= CITES; green = CMS; blue = Ramsar; yellow = CCD. Under the 'Ecosystem Health - Environmental Health' heading a full-grey circle indicates that only the 'environmental health' concept occurs in the decisions. Under the 'Animal Health - Wildlife Health' heading a full-grey circle indicates that both concepts (animal and wildlife health) occur in the decisions.



Thus in 2011, a CMS resolution on Wildlife Disease and Migratory Species referred to the One Health approach as a multidisciplinary way of addressing emerging those infectious diseases increasingly gaining ground and as endorsed by several international organizations

[49] International Ministerial Conference on Animal and Pandemic Influenza, Hanoi Declaration 2010, Vietnam, 19-21 April 2010.

including FAO, OIE, WHO, UNICEF and the World Bank. The same resolution decided to rename the Task Force on Wildlife Disease and call it Scientific Task Force on Wildlife and Ecosystem Health, to reflect more comprehensively the One Health approach[50]. The Ramsar COP in 2012 in turn acknowledged the One Health movement, together with the Ecohealth approach for their capacity to demonstrate the fundamental connectivity in health of humans, domestic livestock, and wildlife[51]. The same year, the CITES COP formally encouraged a One Health multi-sectoral and transdisciplinary approaches including science-based information sharing [52] among the concerned stakeholders (governments, UN agencies, non-governmental organizations).

It is significant that the Agreement between the World Organisation for Animal Health (OIE) and the Convention on Biological Diversity signed in 2013 promotes a One Health approach to manage the risks presented by Animal Diseases and Zoonoses at the animal-human-ecosystem interface[53]. Then in 2013 as well, the United Nations Convention to Combat Desertification (COP 11) considered that the One Health initiative could be a powerful tool to successfully cope with the drivers and consequences of desertification[54].

Finally, in 2014, the CBD itself during its latest COP acknowledged twice the interest of the One Health approach: the first time in a decision on bushmeat and sustainable wildlife management[55]. That decision stated the relevance of the approach to developing national

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[50] Convention on Migratory Species, COP 10, 2011, Resolution 10.22, Wildlife disease and migratory species, Preamble and §1. Available at <http://www.cms.int/en/meeting/tenth-meeting-conference-parties-cms> accessed 3 May, 2016.

[51] Ramsar Convention, COP XI, 2012, Resolution XI.12 Wetlands and health: taking an ecosystem approach, Preamble and §7. Available at <http://ramsar.rgis.ch/cda/en/ramsar-documents-cops-cop11-cop11-resolutions/main/ramsar/1-31-58-500%5E25837_4000_0__> accessed 3 May, 2016.

[52] Convention on International Trade in Endangered Species of Wild Fauna and Flora, 26th Meeting, Document 23, Relationship between wildlife trade and wildlife diseases, §1 and §3b. Available at <https://cites.org/eng/com/ac/26/index.php > accessed 3 May, 2016.

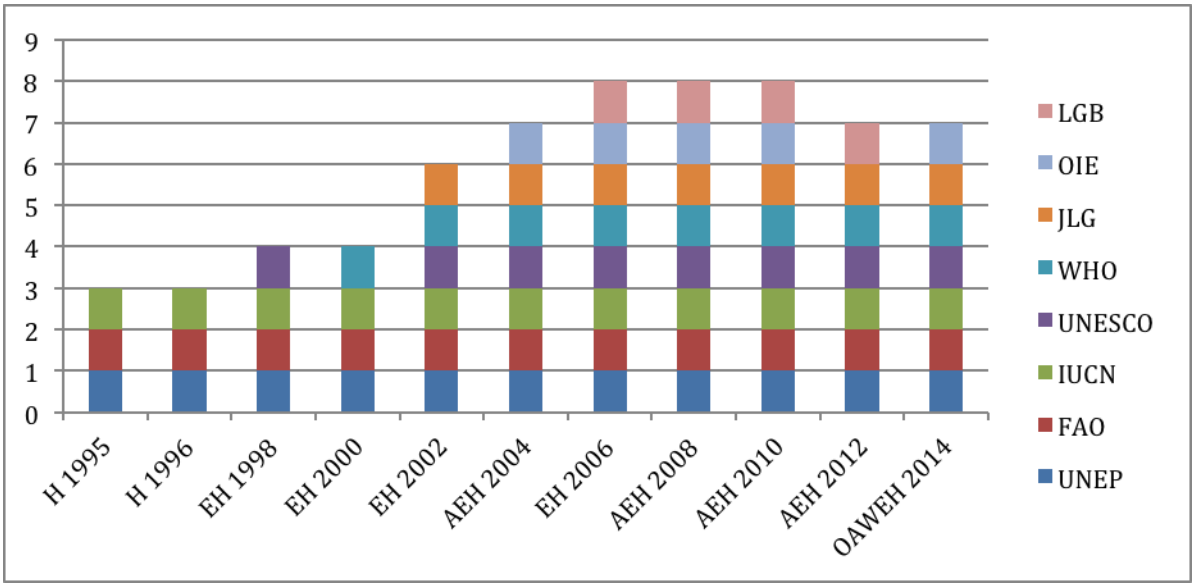
[53] OIE, CBD, Cooperation Agreement between the Secretariat of the Convention on Biological Diversity and the World Organization for Animal Health (OIE), 2013, Art. 1.
Available at <http://www.oie.int/doc/document.php?numrec=4260303 > accessed 3 May, 2016.

[54] United Nations Convention to Combat Desertification, COP 11, 2013, Final outcome of the UNCCD 2nd Scientific Conference, ICCD/COP (11)/CST/INF.3, §29.
Available at <http://www.unccd.int/en/about-the-convention/official-documents/Pages/SessionDisplay .aspx?k=COP%2811%29/CST> accessed 3 May, 2016.

[55] Convention on Biodiversity COP XII, 2014, Decision XII/18 Sustainable use of biodiversity: bushmeat and sustainable wildlife management, §4. Available at:
<https://www.cbd.int/decisions/cop/?m=cop-12> accessed 3 May, 2016.

and local wildlife surveillance systems. The second time One Health was acknowledged was in a decision on biodiversity and human health, which recognized the value of the One Health approach to address the cross-cutting issue of biodiversity and human health. Further, it stated One Health's consistency with the 'ecosystem approach' to integrate 'the complex relationships between humans, microorganisms, animals, plants, agriculture, wildlife and the environment'[56].

FIGURE 3. Involvement of various organizations in decisions of the CBD COPs considering one or more health issues (indicated with the date on *x-axis*): H 'Human Health'; E 'Ecosystem (or Environmental) Health' ; A 'Animal Health' ; W 'Wildlife Health'; O 'One Health '. [LGB: Liaison Group of Biodiversity-Related Conventions; OIE; World Organization for Animal Health; JLG: Joint Liaison Group of the Rio Conventions, etc.]



The commitment of the various Conventions related to biodiversity to find practical answers regarding the interlinkages between environmental, animal and human health led to the adoption of the ecosystem approach and later on to the recognition of the One Health approach as outlined above (Figure 3). It appeared as a way to consider the complexity of the various interlinkages and to provide, among other issues, an appropriate answer to the risk of emerging infectious diseases.

[56] Convention on Biodiversity COP XII, 2014, Decision XII/21 Biodiversity and human health, §4. Available at <https://www.cbd.int/decisions/cop/?m=cop-12> accessed 3 May, 2016.

Conclusion

As outlined in this article, the understanding of the consequences of the modification of the environment and ecosystems on human health, on the one hand and the interactions between animal and human health, on the other hand, has been progressively taken into account by the Conventions related to biodiversity and refined to consider the specific case of wildlife. It shows that the One Health approach is resulting from concerted international support[57] but also from 'the convergence of a series of alliances, specific events and related agendas at this particular time'[58] as illustrated within the biodiversity-related Conventions.

The integrative and global One Health concept appears to be a very interesting tool to draw the attention and support of policy-makers to issues at the interface of the environment / animal / human health[59] and to help them to understand the dynamics and interactions between those sectors. Nevertheless, the complexity of those interactions and the variety of issues should be considered carefully in all their dimensions for the design and the active implementation of sound and informed policies, otherwise the holistic approach calling for a common and concerted response with a true integration of results from different disciplines could miss its real target[60].

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[57] A Binot, R Duboz, P Promburom, W Primpapai, J Cappelle, C Lajaunie, F Goutard, T Pinyopummintr, M Figuié and F Roger, 'Beyond cross-sectoral collaborations at the Animal/Human/Environment interface across stakeholders: the ComAcross project in Southeast Asia', (2015) 1 One Health Journal 44-48.

[58] EPJ Gibbs, 'The evolution of One Health: a decade of progress and challenges for the future', (2014) 174 Veterinary Record 85-91 doi:10.1136/vr.g143.

[59] LO Gostin and EA Friedman, 'The Sustainable Development Goals: One-Health in the World's Development Agenda', (2015) 314 (24) JAMA 2621.

[60] BA Walther, C Boëte, A Binot, Y By, J Cappelle, JJ Carrique-Mas, M Chou, N Furey, S Kim, C Lajaunie, S Lek, P Méral, M Neang, BH Tan, C Walton and S Morand, 'Biodiversity and Health: Lessons and Recommendations from an Interdisciplinary Conference to Advise Southeast Asian Research, Society and Policy', (2016) Infection, Genetics and Evolution 29-46.

1.5°C TO STAY ALIVE?:

Aosis and the Long Term Temperature Goal in the Paris Agreement

Lisa Benjamin* and Dr Adelle Thomas**

The global temperature goals contained in Article 2 of the Paris Agreement[1] have been widely touted as a major marker of the success of the agreement. In particular, the aspirational goal of pursuing efforts to limit the global temperature increase to 1.5°C above pre-industrial levels was a surprise to many observers of the negotiations. However, inclusion of the 1.5°C long term temperature goal had been a long-fought struggle, led by the Alliance of Small Island States (AOSIS), and resulted mainly from the Structured Expert Dialogue (SED) on the 2013-2015 review. This insight piece provides an overview of the results of the 2013-2015 review in light of the 1.5°C temperature goal, and its importance for small island states. This piece also charts the convoluted course of the outcome of the 2013-2015 review in the Paris negotiations, the consequential recognition of the 1.5°C goal in the agreement, and provides some initial thoughts of the adequacy of this provision in the Paris Agreement.

In 2010 the Cancun Agreements set a long-term goal of limiting the global average temperature increase to below 2°C above pre-industrial levels.[2] It was agreed that this temperature goal would be reviewed periodically to ensure its adequacy in preventing 'dangerous' human interference with the climate system, particularly in the context of a 1.5°C global goal.[3] Parties also agreed to establish the 2013-2015 review that was mandated with investigating the need to strengthen the temperature goal and potentially limit temperature increases to 1.5°C.[4] At the Durban COP in 2011, the parties agreed that the review would be informed by IPCC assessment reports, UN agency reports, observed

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[1] FCCC/CP/2015/L.9.

[2] FCCC/CP/2010/7/Add.1 Decision 1/CP.16 para I.4.

[3] Ibid.

[4] FCCC/CP/2010/7/Add.1 Decision 1/CP.16 para V.138-140.

regional changes as well as by submissions from parties. It was also to be assisted by the Subsidiary Body for Implementation (SBI) and the Subsidiary Body for Scientific and Technology Advice (SBSTA).[5] The 2013-2015 review focused on gathering and assessing scientific evidence to determine an appropriate temperature goal that would limit impacts from climate change, and included involvement of over seventy experts and parties. The SED held four meetings throughout the two-year period of its mandate,[6] and was required to end its work at COP 21 in Paris.

Results from the SED show that there has been an increase of the global average temperature of 0.85°C since 1880.[7] This increase in temperature has had significant, observable impacts on a global scale, including decreased food production, declines in marine fisheries, increases in sea level rise and flooding, the loss of glaciers and ice sheets and detrimental effects on ecosystems.[8] The current temperature increase has resulted in impacts that already exceed the adaptation capacity of many peoples and ecosystems[9] Deliberations regarding the qualification of 'dangerous' human interference with the climate system show that there is no universally safe level of climate change or temperature increase.[10] Species, people and communities currently affected by climate change impacts are already coping with unsafe changes, making further increases to the temperature even more harmful.

Results also showed that as the global average temperature rises above current levels of warming, there are significant increases in impacts on a global scale, including higher levels of risk to unique and threatened ecosystems, more intense extreme weather events, increases in coastal and inland flooding and more disruption to livelihoods.[11] While temperature increases result in amplified effects globally, risks to some regions are higher than others due to greater levels of vulnerability and limitations to adaptation. For small islands in particular, increased warming results in very high risks to coastal erosion, flooding, terrestrial and marine ecosystems, livelihoods, health and economic stability.[12]

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[5] FCCC/CP/2011/9/Add.1 Decision 2/CP.17 paras 157-167.

[6] See Chronology 2013-2015 Review, available at:
http://unfccc.int/science/workstreams/the_2013-2015_review/items/7522.php

[7] 'Report on the structured expert dialogue on the 2013-2014 Review' FCCC/SB/2015/INF.1 para 16.

[8] Ibid, para 36.

[9] Ibid, para 37, 39.

[10] Ibid, para 40.

[11] Ibid, para 22, para 31.

[12] Ibid, Figure 7.

With 2°C of warming, the rate of climate change would exceed the adaptation capabilities for a number of species and geographic areas, including small islands. A warming of 2°C was found to be inadequate to prevent dangerous levels of impacts on a global scale.[13] For small islands the difference in projected risks between 1.5°C and 2°C of warming was found to be significant. Although there will be increased environmental changes with a warming of 1.5°C, terrestrial and marine species would be able to adapt, coral reefs would have a higher likelihood of survival, sea level rise would likely remain below 1 metre, and there would be more adaptation options available to small islands to cope with impacts.[14] Consequently, the 1.5°C long term temperature goal became a red line for AOSIS at the Paris negotiations.

AOSIS has been calling for a global goal to limit temperature increase to 1.5°C since 2008, using the slogan '1.5°C to stay alive.'[15] AOSIS requested that the 2013-2015 review take place in order to consider strengthening the long term temperature goal of 2°C, and to conclude at the 2015 Paris negotiations in order for the results of the review to inform the outcome of the 2015 negotiations.

At the conclusion of the SED review, AOSIS called for the results of the SED to be put before the Conference of Parties (COP) in Paris in order for the COP to consider strengthening and lowering the overall long term temperature goal. AOSIS viewed the

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[13] Ibid, Message 5.

[14] Ibid, para 110.

[15] For more information on AOSIS see www.aosis.org, 'Alliance of Small Island States 25 Years of Leadership at the United Nations' 2015 AOSIS, available at http://aosis.org/wp-content/uploads/2015/12/AOSIS-BOOKLET-FINAL-11-19-151.pdf; C Betzold 'Borrowing Power to Influence International Negotiations: AOSIS in the Climate Change Regime, 1990–1997' (2010) 1–14, available at <http://www.psa.ac.uk/journals/pdf/5/2010/1603_1456.pdf; J Ashe, 'The Role of the Alliance of Small Island States (AOSIS) in the Negotiation of the United Nations Framework Convention on Climate Change (UNFCCC)' (1999) 23 Natural Resources Forum209–220; TN Slade, 'The Making of International Law: The Role of Small Island States', (2003) 17 Temple Int'l and Comparative L Jl 531–544; J Grote, 'The Changing Tides of Small Island States Discourse – A Historical Overview of the Appearance of Small Island States in the International Arena', (2010) 43 Verfassung und Recht in Ubersee 164–191; PS Chasek, 'Margins of Power: Coalition Building and Coalition Maintenance of the South Pacific Island States and the Alliance of Small Island States', (2005) 14 Review of European Community and Int'l Environmental L 125–137; I Fry, 'Small Island Developing States: Becalmed in a Sea of Soft Law' (2005) 14 Review of European Community and Environmental Int'l L 89–99; L Benjamin, 'The Role of the Alliance of Small Island Developing States (AOSIS) in UNFCCC Negotiations' (2011) Int'l Environmental Law-making and Diplomacy Review 117-132.

outcome of the SED as a 'paradigm shift'[16] in the way in which the world should view the current 2°C limit. On the basis of the review, AOSIS called for a below 1.5°C temperature limit to become a benchmark in the Advanced Durban Platform negotiations, and ultimately in the Paris Agreement.[17] It should be noted, however, that AOSIS conceded that even with a 1.5°C temperature goal, SIDS would still experience significant residual impacts due to climate change.[18]

AOSIS had requested the 2013-2015 review in part to increase the urgency and ambition of parties' nationally determined contributions at the Paris COP. One of the key goals for AOSIS was to ensure that the emission pathways in the Paris Agreement did not make the 1.5°C goal 'infeasible'. [19] Despite the two year SED process, which included receiving inputs from parties, the 43rd sessions of SBI and SUBSTA regarding the outcomes 2013-2015 review were contentious. A few countries within these meetings attempted to obstruct the outcomes of the 2013-2015 review being forwarded for consideration by the COP, despite the 2011 Durban Outcomes anticipating that the ADP process would consider the results of the 2013-2015 review.[20] The AOSIS statements at the closing of the SBI and SUBSTA meetings called these obstructions 'unacceptable', [21] and cited its 'extreme' disappointment, going so far as to say that as a group it was 'appalled' by the actions of some countries.[22] This is very forceful language, and indicates the precariousness of the situation at a critical juncture of the Paris negotiations.[23] AOSIS insisted that the review be considered in the ADP process.

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[16] Submission by AOSIS on the Outcome of the Structured Expert Dialogue and the 2013-2015 Review, May 2015 available at :
http://www4.unfccc.int/submissions/SitePages/sessions.aspx?showOnlyCurrentCalls=1&populateData=1&expectedsubmissionfrom=Parties&focalBodies=SBSTA&themes=Science%20and%20Research

[17] Ibid.

[18] FCCC/SB/2015/INF.1 para 113.

[19] Submission by AOSIS on the Outcome of the Structured Expert Dialogue and the 2013-2015 Review, May 2015 (n16 above).

[20] FCCC/CP/2011/9/Add.1 Decision 2/CP.17 para 166.

[21] Statement delivered by the Maldives on behalf of the Alliance of Small Island States (AOSIS) at the Closing SBSTA Plenary Paris 2015 available at http://aosis.org/documents/climate-change.

[22] Statement delivered by the Maldives on behalf of the Alliance of Small Island States (AOSIS) at the Closing SBI Plenary Paris 2015 available at:
http://aosis.org/documents/climate-change.

[23] See also the G77 and China statements on the closing of the SBI and SBSTA which expressed disappointment at the inability of the parties to reach a consensus on the issue, available at:

In the end it was perhaps the secret 'high ambition coalition' that broke the deadlock in the negotiations over the 1.5°C temperature goal.[24] The coalition was formed in July 2015, and included both developed and developing countries (although omitted China and India). The four main aims of the coalition included a legally binding agreement in Paris, a long term temperature goal in line with scientific advice, a review mechanism for countries' emission contributions, and a coherent transparency mechanism.[25] Critically, the US joined this coalition, which included 79 countries,[26] including a number of SIDS.[27] Ultimately, the Paris Agreement includes a long term temperature goal of 'well below 2°C' above pre-industrial levels, with an aspirational goal of limiting temperature increase to 1.5°C.[28]

The significant efforts of AOSIS over several years did result in a successful mention of the 1.5°C limit, but ultimately the measure of these efforts will be determined by whether or not the quasi-voluntary nationally determined contributions (NDCs) collectively meet the long term temperature goal. While parties have an obligation in the Paris Agreement to prepare, communicate and maintain successive rounds of NDCs, these NDCs merely represent the 'intention' of parties,[29] and are no longer legally binding targets as they were in the Kyoto Protocol. The language regarding NDCs is therefore very weak, and current NDCs put the world on track for approximately 2.7°C, or higher, of warming.[30] The long term temperature goal, therefore, currently serves as a marker of the collective, global ambition gap represented by NDCs.

In addition, there is no obligation on parties to ensure that collectively NDCs must not exceed the long term temperature goal in the Agreement. As the outcome of the SED

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http://www4.unfccc.int/submissions/SitePages/sessions.aspx?showOnlyCurrentCalls=1&populateData=1&expectedsubmissionfrom=Parties&focalBodies=SBI; and http://www4.unfccc.int/submissions/SitePages/sessions.aspx?showOnlyCurrentCalls=1&populateData=1&expectedsubmissionfrom=Parties&focalBodies=SBI.

[24] 'The Huge, Secret Coalition that Could Deliver at Win at Paris' available at :http://magazine.good.is/articles/secret-climate-coaltion-high-ambition-paris-cop21;

[25] 'Climate Coalition breaks cover in Paris to push for binding and ambitious deal' available at: http://www.theguardian.com/environment/2015/dec/08/coalition-paris-push-for-binding-ambitious-climate-change-deal.

[26] 'COP 21: US joins 'high ambition coalition' for climate deal' http://www.bbc.com/news/science-environment-35057282.

[27] The coalition was allegedly initiated by Tony de Brum, foreign minister for the Marshall Islands, see 'Climate Coalition breaks cover in Paris to push for binding and ambitious deal' (n25 above)..

[28] Art. 2, FCCC/CP/2015/L.9.

[29] Art. 4(2).

[30]http://climateanalytics.org/latest/climate-pledges-will-bring-27c-of-warming-potential-for-more-action.

demonstrated, failure to meet the long term temperature goal of 1.5°C would have serious negative impacts for SIDS, including the possibility of increased 'loss and damage'. While there is no universally agreed definition of loss and damage, UNFCCC Decision 2/CP.19 describes it as: loss and damage associated with the adverse effects of climate change includes, and in some cases involves more than, that which can be reduced by adaptation.[31] Loss and damage has been referred to as 'adverse effects of climate variability and climate change that occur despite global mitigation and local adaptation efforts.' [32] Loss and damage is commonly understood to mean impacts which exceed the adaptation efforts of states, and includes both slow onset events such as sea level rise, coral bleaching and ocean acidification, as well as extreme events such as hurricanes and typhoons. The issue of loss and damage also became a red line for AOSIS in the Paris negotiations, but became a contentious issue due to the reluctance of many states to become responsible for compensation due to loss and damage. As a result, there was an agreement to enhance the mandate and responsibilities of the existing Warsaw Implementation Mechanism on loss and damage, separate and apart from adaptation,[33] but compensation for loss and damage was excluded in the Decision. Hoad notes that the exclusion of economic loss and damage was an attempt to preclude legal claims by SIDS and others against large emitting nations.[34] As negative impacts of climate change increase, it is likely that the controversial issue of loss and damage, particularly for SIDS, will persist.

The Paris Agreement may be seen as a success if viewed as a process agreement only, as the substance of the legal obligations do not currently ensure that the world will achieve the well below 2°C or 1.5°C temperature limit. Binding commitments were only achieved in terms of transparency processes and five-yearly global stocktakes. Transparency as well as monitoring, reporting and verification processes won the day in Paris, and this type of nationally-determined climate regime has superseded the old 'top down' Kyoto model with legally binding targets and sanctions. More detailed modalities of the transparency, global stock take and implementation and compliance mechanisms and committee will be fleshed out by the Ad Hoc Working Group on the Paris Agreement in the years to come. However, at the moment, the transparency and global stock-take

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[31] FCCC/CP/2013/10/Add.1.

[32] K van der Geest, M Zissener and K Warner, 'Addressing Loss and Damage with Microinsurance,' Envisioning Resilience: Towards Climate Compatible Development, Special Issue No. 109, April 2014, 3.

[33] Art. 8 FCCC/CP/2015/L.9.

[34] D Hoad, 'The 2015 Paris Climate Agreement: outcomes and their impacts on small island states', (2016)11(1) Island Studies Journal, 318.

mechanisms are the only tools with discrete legal obligations to measure achievement against the long-term temperature goals.[35] Language regarding implementation and compliance under the Paris Agreement is weak, and any compliance mechanism will now be 'non-punitive' and 'facilitative in nature.'[36] Therefore it is unclear what kinds of redress would be available to SIDS in the instance of collective failure to meet the long term temperature goal of well below 2°C. Compliance under the Agreement is likely to follow a managerial model, emphasizing reputation and respectability at the international level as drivers of ambition.[37] As a result, on the basis of existing provisions under the Paris Agreement, collective failures to meet the well below 2°C temperature goal will be made public, but the Agreement currently contains no clear legal avenues for SIDS to ensure that parties collectively redress such a failure.[38]

Whether these largely process-based arrangements can ensure the world achieves a long term temperature goal of 1.5°C shall remain to be seen. Subsequent scientific reviews of the long term goal, which are designed to inform the collective efforts of nations are built into the Paris Agreement and Decision.[39] The five-yearly global stocktake is one of the few remaining levers at the international level designed to incentivize increased ambition by countries. Scientific reviews which coincide with subsequent global stocktakes are likely to highlight continuing ambition gaps. The challenges AOSIS experienced in attempting to ensure that parties took into account the outcomes of the SED at the high-profile Paris negotiations are instructive, and worrisome. It is, therefore, of concern how seriously parties will receive and act upon subsequent expert reviews and recommendations that may

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[35] As Bodansky notes, the transparency and global stock take are tools to 'prod' states into increasingly ambitious action, D Bodansky, 'The Paris Agreement: A New Hope?', Forthcoming in American Journal of International Law, available at:
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2773895,

[36] Art.15 (2) FCCC/CP/2015/L.9.

[37] See for example A Chayes and A Handler Chayes, *The New Sovereignty: Compliance with International Regulatory Agreements* (Cambridge, Mass: Harvard 1998); M Doelle, 'The Paris Agreement: Historic Breakthrough or High Stakes Experiment?' Forthcoming, Special Issue, Climate Law (2016) available at:
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2708148

[38] Although Gerrard has highlighted the importance of Art. 4(1) in the transition away from fossil fuels, MB Gerrard, 'Legal Implications of the Paris Agreement for Fossil Fuels' 19th December 2015 available at: http://blogs.law.columbia.edu/climatechange/2015/12/19/legal-implications-of-the-paris-agreement-for-fossil-fuels/; Bodansky (n 35 above) has noted that the new paradigm shift evidenced in the Paris Agreement could, over time, lead to more ambitious climate action, pp 3-4.

[39] See Paris Agreement Art. 4(9), Art. 13(11) & (12), Art. 14, and 1/CP.21 paras 19-21, 100-102.

highlight ambition gaps between the long term temperature goal of well below 2°C and collective global efforts to reach that goal.

STRENGTHENING CAPACITY FOR ENVIRONMENTAL LAW IN THE ASIA-PACIFIC: DEVELOPING ENVIRONMENTAL LAW CHAMPIONS

Reflections on the Training Courses – Manila

23-27 March 2015 and 1-5 June 2015

Karen Bubna-Litic*

Introduction

In March 2015, the IUCN Academy of Environmental Law's 'Train the Trainers' program, was implemented in the first of two five day training programs, held in Manila, at the offices of ADB. The second five day training took place in early June 2015. The implementation of this program was a result of an agreement concluded in January 2015 between the Asian Development Bank (ADB) and the International Union for the Conservation of Nature (IUCN), represented by its Asian Regional Office in Bangkok, Thailand, as amended by an amendment to the implementation agreement dated 29 May 2015 (collectively, the 'implementation agreement').[1] The agreement provided that IUCN, through the IUCN Academy of Environmental Law (IUCNAEL), was to be the implementing agency for two programs under the regional Technical Assistance (TA) program of ADB.[2]

This TA was developed through close cooperation with the IUCNAEL and drew on its experience in developing the Train the Teachers (TTT) project.[3] The intention of the TA was to build 'Environmental Law Champions', with one of the outcomes set out in the implementation agreement being an 'enhanced capacity of law professors, university lecturers and public interest environmental lawyers in environmental law and natural capital and the cultivation of environmental law champions.'

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[1] Final Report to Asian Development Bank, submitted by IUCN (Asian Regional Office) and IUCN Academy of Environmental Law (IUCNAEL), December 2015.

[2] Technical Assistance: Strengthening Capacity for Environmental Law in the Asia-Pacific: Developing Environmental Law Champions (2015) (S-CDTA NO. 8616).

[3] Although many people have been involved with the final design of the TTT course, the initial draft of the structure and the teaching methodologies took place in April 2009 over three days by Rob Fowler, Ben Boer and Karen Bubna-Litic.

The TTT project, developed by the IUCNAEL and previously taught in China (in 2011 and 2013), was originally designed to build capacity in developing country law schools by training experienced environmental law professors in a wide range of teaching methodologies that can be utilised in the teaching of environmental law, enabling them to assist in the delivery of in-country training to less experienced colleagues. The intention was that each subsequent in-country course would be run by the experienced professors who had undertaken the TTT course with support from the IUCN Academy, that support being in the form of one or two trainers from the Academy, who had some familiarity with the environmental laws of that region.

The TA program was developed on a different basis in that the initial two courses were to train participants from a number of different countries within the Asian region, in the one course. Under the agreement, the IUCN Academy was to set up a TA Management Unit (TAMU) comprising of three international environmental law experts and three national experts on environmental law from the region. For these two courses, the 'international' members of the TAMU were Lye Lin Heng, Ben Boer, Karen Bubna-Litic and Rob Fowler. The 'national experts' were Gloria Estenzo Ramos, Laode Muhamid Syarif and Grizelda Mayo-Anda. Ben Boer was unavailable for the first course and Gloria Ramos was unavailable for the second course. All of the 'international' members had been extensively involved in the development of the IUCNAEL TTT project. Each of the trainers brought between 15-20 years of teaching in environmental law and practice in a variety of contexts which enhanced each of the training courses. The cooperation and camaraderie amongst the group of trainers was a notable element of the TAMU and commented upon by many of the participants. Here are some participant comments, 'It was wonderful gathering among the trainers of environmental law of the Asia Pacific Region. We were successful to exchange experiences, skills and create networking among the potential trainers of the Asia Pacific Region.' 'It was indeed a beautiful and enriching experience to have been part of this Programme. One is enormously grateful to have had the opportunity to share ideas and thoughts and also to forge new friendships across the region. May the momentum from the trail-blazing initiative grow in the fullness of time with the planned/proposed ideas and projects.' 'Let's make TTT Program live by using the teaching methods prescribed by it.''Some of the techniques discussed were very innovative and definitely to be followed.' 'The trainers have all been symbols of cooperative teaching'.

Who were the participants? Each course was intended to focus on particular regions in Asia. The first course was to cover south Asia and south-east Asia and the second course was to focus on the Mekong region. IUCNAEL collaborated with ADB to provide as wide as possible contact list to help identify potential participants.

Potential participants were asked for their views on their motivation and views on environmental law teaching and their environmental law teaching and experience at both undergraduate and postgraduate levels. They were also asked to detail the impact their participation in the training program would have and whether they would be willing to lead or contribute to the 'train the teachers' program in their country. In the end, both courses had a combination of experienced environmental law professors (including some Law School Deans) and some less experienced scholars. The first course had 26 participants from eight countries: Bangladesh (1), India (5), Indonesia (7), Malaysia (2), Nepal (1), Pakistan (1), Philippines (7), and Sri Lanka (2), with the gender balance being M (17), F (9). The second course had 31 participants from six countries: Cambodia (3), Laos (2), Myanmar (3), China (5), Thailand (7), Vietnam (11), with the gender balance being M (13), F (18).

Content, Challenges and Opportunities from the TA

The courses focused on building capacity in teaching methodologies, rather than environmental law content, as was demonstrated to IUCN Academy members at the Teaching workshop at the IUCN colloquium in Jakarta. The content of each course was developed in close collaboration with ADB with each course containing the following two key elements:

i) An overview of the core, substantive elements of environmental law that may be covered by teachers of an environmental law course; and
ii) A demonstration of a diverse range of teaching methodologies that may be well suited to the teaching of environmental law.

Each course comprised 20 modules and each module included statements of learning outcomes for both the substantive content and teaching methodologies focusing on in that particular module.

The substantive content included global and regional environmental issues, environmental planning and impact assessment, environmental protection law, protection of biodiversity and natural and cultural heritage, natural resources management law, climate change and clean energy law, environmental dispute resolution and the courts, IEL and environmental rights.

Examples of teaching methodologies included small group discussions, reflective journals, field trips, guest lectures, case studies, comparative approaches, use of films, 'free form' class discussions, brainstorming, structured class discussions, constructive feedback, mooting and role-plays. To see how this type of combination worked, take as an example the module on Alternative Approaches to Environmental Dispute Resolution. The learning outcomes for the session topic were:

a) Appreciation of the role of alternative approaches such as mediation to the resolution of environmental disputes; and
b) Awareness of the multiple, and often conflicting, interests involved in most environmental disputes

The learning outcomes for the teaching methodology was the appreciation of the function of a role-play exercise in enhancing student understanding of the nature of environmental disputes and of alternative approaches to their resolution.

Originally the TTT course had been designed for in-country training so having participants from different countries, posed quite a challenge in answering the question of which substantive law do you actually teach in the substantive part of each session. This challenge turned into an opportunity for each of the participants and the trainers to learn from each other about environmental regulation in each other's jurisdictions. In the feedback from the first course, the participants identified the comparative aspect of the teaching as one of the most valuable aspects of the course. This came from listening and sharing experiences, particularly in small groups and joint feedback sessions.

This feedback from the first course was incorporated more robustly into the second course where the six jurisdictions had many common regional issues and the feedback again highlighted the value of incorporating comparative perspectives.

Another opportunity arising out of these courses was the establishment of joint research and teaching opportunities. There was much discussion of having guest lecturers from different jurisdictions, either in person or through video links, participate in environmental law courses, in particular areas of their expertise. A joint research initiative came out of the first course between a participant from Malaysia and a participant from Indonesia who jointly presented at a conference in London on the issue of forest haze and the palm oil industry.[4]

There were some challenges with language in the second TA, with two of the countries requesting a translator. We were unsure how this would all go, as all of the presentations were delivered in English. After observing the first few sessions closely, the TAMU discussed the various options with the relevant participants and in the end, having a translator available enhanced the experience of all of the participants.

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[4] Hanim Kamaruddin, Cecep Aminuddin, 'Transboundary Haze Polluters and Accountability: The legal Landscape in Indonesia and Malaysia' published proceedings of the 18th International Academic Conference, London, International Institute of Social and Economic Sciences, August, 2015 http://www.iises.net/proceedings/18th-international-academic-conference-london/table-of-content/detail?article=transboundary-haze-polluters-and-accountability-the-legal-landscape-in-indonesia-and-malaysia

Plans for the Future

At the end of each course, there was an open discussion to get feedback on whether the participants were willing to assist in similar training in their countries in the future. The participants were enthusiastic about this prospect. Following the courses, a template for proposing in-country training, was distributed by ADB and participants were invited to submit their proposals.

A contract was signed on December 24th 2015 between IUCNAEL and ADB for the delivery by the Academy of four in-country training courses during 2016. A Roundtable of Environmental Law Champions and Academy trainers will be held at ADB in mid-2016, after two in-country training courses have been delivered, which will bring together the TAMU team and the environmental law champions to share inspirational stories and experiences conducting the in-country TTT programs.

Conclusion

The feedback from the participants, both formal and informal, strongly supported the design and philosophy of the courses, in that they felt inspired to adopt many of the teaching methodologies into their environmental law courses and to contribute to the future capacity building of environmental law in their own countries. Their commitment to the long-term advancement of environmental law teaching, illustrates the importance of the selection process, to ensure none of the participants had only a token interest in the courses.[5] This was confirmed by participant feedback which stated that they felt constantly engaged in, and stimulated by, the subject matter of every session over the five days and did not lose focus or interest at any time.[6] One participant emphasized the value of informal education, during coffee breaks, lunches and after a day's training at local spots.

The two courses run in Manila in 2015 have been successful 'train the trainers' courses. Out of the fourteen jurisdictions trained, seven countries put in proposals for in-country training, which was one of the main outcomes envisaged. Four of these will now take place in 2016. Some of the participants with less experience have already implemented some of the teaching methodologies into their courses and in this sense the TA has also served as a successful 'train the teachers' exercise.

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[5] Final Report to Asian Development Bank, submitted by IUCN (Asian Regional Office) and IUCN Academy of Environmental Law (IUCNAEL), December 2015.

[6] Ibid.

BUILDING SUSTAINABLE FUTURES IN THE LEGAL CLASSROOM

Michelle Lim*****

Introduction

The stable functioning of Earth's life support systems is a prerequisite for a thriving global society.[1] There is however growing evidence that human impact is putting such functioning at risk. The likely impacts of global environmental change include diminishing food production, water scarcity, extreme weather, ocean acidification, deteriorating ecosystems and sea-level rise. These impacts will further undermine human well-being and long-term prosperity. [2] Present and future generations are therefore faced with unprecedented challenges and the quest to achieve sustainable futures is fraught with uncertainty.

There is consequently an emerging need for law and policy which is integrated, adaptive and forward looking. Long-term sustainability relies on legal practitioners and scholars, judges and policy makers being able to make optimal decisions in the present and for the future while faced with significant uncertainty. At the same time, rules and institutions can play an important role in shaping desirable and sustainable futures. The role of law in sustainability is however often overlooked. Further, despite increasing shifts within higher education to develop sustainability competencies[3], these shifts have focused on the environmental and life sciences.

The law students of today, a.k.a. the lawyers, policy makers and societal and academic leaders of tomorrow, have a vested interest in the state of the planet of our future. The current generation is not only the key stakeholder in the issue of planetary sustainability but also brings unique perspectives, methods and tools to addressing these challenges.

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* Law Futures Centre, Griffith Law School, Griffith University, Australia. This insight article draws on more detailed discussion and an example of the approach in Michelle Lim & Andrew Allan The use of scenarios in legal education to develop futures thinking and sustainability competencies (forthcoming 2016) The Law Teacher.

[1] David Griggs, Mark Stafford-Smith, Owen Gaffney, Johan Rockström, Marcus Öhman, Priya Shyamsundar, Will Steffen, Gisbert Glaser, Norichika Kanie, and Ian Noble, 'Sustainable development goals for people and planet'. (2013) *Nature* 495 (7441), 305.

[2] David Griggs, Mark Stafford-Smith, Johan Rockström, Marcus Öhman, Owen Gaffney, Gisbert Glaser, Norichika Kanie, Ian Noble, Will Steffen, Priya Shyamsundar, 'An integrated framework for Sustainable Development Goals (2014) *Ecology and Society* 19 (4), 49.

[3] M. Rieckmann, 'Future-oriented higher education: which key competencies should be fostered through university teaching and learning?' (2012) 44 *Futures* 127, 128.

Managing the future is however a 'wicked' problem. This means that the complex interdependencies and contradictory and shifting nature of the problem makes it difficult to solve. This suggests that innovative ways to envision law's and humanity's futures are needed.

Scenarios are the classic device of futures studies and provide an important way to deal with the uncertainty inherent in attempting to build sustainable futures in the present. The use of the plural form of the word 'futures' is deliberate as it emphasises the need to contemplate different visions of the future. It is the visioning of multiple plausible futures that facilitates out of the box thinking across multiple realities. This enables creative problem solving and contingency planning in the face of unpredictable futures.[4]

As determinations of sustainability can only be made after the fact, definitions of sustainability are therefore often only predictions of actions today that one hopes will result in a sustainable future.[5] An expansive tool-kit is therefore needed to plan for the range of futures that could eventuate. Enabling law students to engage in futures thinking is crucial for developing the broad problem-solving skills required in the context of uncertainty.

Envisioning Sustainable Futures Through the Use of Scenarios

There are a range of different understandings of scenarios.[6] Scenarios can be quantitative or qualitative. Quantitative scenarios are usually based on computer models and include numbers and graphs. Qualitative scenarios consist of storylines which describe plausible futures. The discussion of scenarios in this paper refers to qualitative scenarios, i.e. narratives of a range of different plausible futures. Quantitative scenarios could also be useful for law students. However, given the additional challenges of introducing computer models and even graphs into the law classroom, the focus in this paper is therefore on qualitative scenarios.

An example of a narrative of the future would be a 'business as usual' scenario where one back-casts to a defined period in the past (e.g. 30 years) and then considers the changes that have occurred from that time in the past to the present. To develop a 'business as usual' scenario you would then envisage a future in 30 years time with the same rate of

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[4] Peter Bishop, Andy Hines and Terry Collins, 'The current state of scenario development: an overview of techniques' (2007) 9 *Foresight* 5, 5.

[5] Robert Costanza & Bernard C Patten, 'Defining and predicting sustainability' (1995) *Ecological Economics* 15(3), 193, 193

[6] See for e.g. Philip W.F. van Notten, Jan Rotmas, Marjolein B.A. van Asselt, Dale S. Rothman 'An updated scenario typology' (2003) 35 *Futures* 423, 424; Bishop, Hines and Collins, above (ns 5, 6 & 25).

change as seen over the previous 30 years. Other scenarios could consist of narratives of the future where industrialization, economic growth, environmental protection, human well-being or some other characteristic is prioritized to differing degrees. None of these narratives need to represent probable descriptions of the future. The emphasis is on these descriptions being *plausible*. Further, to facilitate meaningful thinking about a range of different futures each narrative should include negative and positive components with none of the narratives representing a 'bad' or a 'good' future. Four or five scenarios tend to be a good number to facilitate thinking about different futures. Any more and the process becomes difficult to manage. Any less and there are an insufficiently broad range of future realities to consider.

The set of scenarios used could come from existing narratives such as the Boulder Scenarios[7] developed in parallel with the Intergovernmental Panel on Climate Change's quantitative scenarios on greenhouse gas concentration pathways. Alternatively, the storylines could be developed by students themselves. This has the benefit of allowing future generations to articulate their own visions of the future. Scenarios could also be developed with colleagues from other disciplines.

The recommendation for law teachers is to bring scenarios into the classroom. Law teachers would do this by either facilitating the development of a range of plausible futures by students themselves or by providing students with already formulated scenarios.[8] Students would analyse existing laws and institutions in the context of the different futures and examine 1) the adequacy of existing laws for dealing with possible future realities; 2) the range of different laws and sectors that will need to be considered to achieve a desirable future; and ultimately 3) what changes in existing laws and governance systems could implemented today to set current practices along a sustainable path.

Conclusion

Sustainability is not merely a challenge for the sciences. Similarly, within law, sustainability competencies are required beyond environmental law related spheres. As the challenges for our planet are immense and interconnected, future governance actors need to be equipped with the skills to envisage sustainable futures so that they will be prepared to address multiple futures and shape a sustainable tomorrow.

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[7] Brian O'Neill, Timothy Carter, Kristie Ebi, Jae Edmonds, Stephane Hallegatte, Eric Kemp-Benedict, Elmar Kriegler, Linda Mearns, Richard Moss, Keywan Riahi, Bas van Ruijven, Detlef van Vuuren, Meeting Report of the Workshop on the Nature and Use of New Socioeconomic Pathways for Climate Change Research, Boulder, CO, November 2-4, 2011. https://www2.cgd.ucar.edu/sites/default/files/iconics/Boulder-Workshop-Report.pdf

[8] See Lim & Allan (forthcoming 2016) (n 1).

TEACHING MATERIALS ON PROTECTED AREAS LAW AND GOVERNANCE

Alexander Paterson[*], Barbara Lausche[**], Patti Moore[***],
Jamie Benidickson[****] and Lydia Slobodian[*****]

Area-based conservation – including protected areas and connectivity conservation -- is one of the oldest and most important means of protecting biological diversity and essential ecosystem services. Protected areas and their connected ecosystems are a primary resource for biodiversity conservation, and are recognized as essential in order to maintain the basic ecosystem services and functions that sustain human life. They provide a wide range of social, environmental and economic benefits to people and communities worldwide. There are over 200,000 designated protected areas in the world, covering about 12% of the surface of the earth.[1]

Today, protected areas face many challenges. Climate change, human-caused habitat destruction, and over-exploitation of resources threaten biodiversity within protected areas. Conflicts between conservation interests and interests in development or resource exploitation are impacting protected areas across the world. Protected areas also face management and governance challenges, which affect and involve communities and stakeholders living in and around the areas, and in some cases threaten their existence. Legal frameworks are critical to creating and maintaining effective and sustainable protected areas. However, the legal aspects of protected areas management and governance are often not well understood.

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[1] Barbara Lausche, *Guidelines for Protected Areas Legislation* (Gland, Switzerland: IUCN, 2011).

IUCN has developed a set of educational tools for teaching and learning about protected areas law and governance.[2] They cover key legal aspects of management and governance of protected areas and connected landscapes, systems and processes in the terrestrial and marine contexts. The materials are primarily intended as resources for face-to-face instruction. They are designed for use in a wide variety of settings, including training sessions, workshops, university courses and practitioner seminars. The materials are freely available at www.protectedareaslaw.org.

The course consists of twelve interactive modules, which can be taught together as a complete course, or used individually or in different combinations, or together with other materials. Each module addresses a particular aspect of protected areas management or governance and explains connected legal, political and scientific concepts. The course is based on two main IUCN texts: *Guidelines for Protected Areas Legislation* (2011); and *The Legal Aspects of Connectivity Conservation* (2013).

The first six modules represent the core course and focus on generic aspects found in PA law. They cover: introductory concepts, governance, legislative drafting and institutions, planning and declaration, management, and regulation and financing. The other six modules of the course explore more specialized aspects of protected areas law: international law, connectivity, marine protected areas, and transboundary protected areas.

Each module includes an outline, a seminar presentation, interactive exercises, and short videos. These materials are generic. Educators should adapt them to their specific circumstances and audiences. This can include, *inter alia*, adding case studies and examples from the relevant country or region, or removing slides and other materials that do not apply or that duplicate other materials used. Elements from different modules can be put together in different combinations, or used in different settings. For example, an educator could use a video from Module 1 (introduction), a seminar presentation from Module 7 (international) and an exercise from Module 9 (connectivity) for a session on protected areas and connectivity in the context of a course on international law.

The module outlines contain detailed guidance on how to adapt and use each module. Module outlines also contain assessment questions and additional resources that can supplement the main texts.

The seminar presentations include a PowerPoint and notes for the educator thoroughly and comprehensively explaining the subject of the module. They emphasize engagement of learners, for example through prompts for discussion. Each presentation is

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[2] Alexander Paterson, Barbara Lausche, Jamie Benidickson, and Patti Moore *Building Capacity on Protected Areas Law and Governance* [Training Modules] Lydia Slobodian (ed) (Gland, Switzerland: IUCN, 2015). Available at: <www.protectedareaslaw.org>.

designed to take approximately two hours, but could be easily adapted for longer or shorter training periods.

Each module includes two exercises, which can be used in class or as assignments. They include exercises such as role play negotiations, discussion forums, and legal drafting problems. Most exercises are based on fictional case studies, accompanied by detailed descriptions and maps. For example, one exercise challenges participants to take on the roles of a protected areas authority and a local community in negotiating a co-management agreement for a new protected area. The materials include a case study, map of the area, and negotiation mandates for each side – including revised mandates introduced part-way through to reflect concessions and shifts in the objectives of the different parties.

Each module also includes a short video, designed to provide an accessible overview of main concepts and issues through a combination of animation and video footage from different protected areas. An additional set of short videos use interviews from leading experts and case studies from around the world to provide perspectives on special types of protected areas, such as marine protected areas, or particular concepts like connectivity conservation.

The course can be used in many different circumstances and settings, including university courses, workshops, and training sessions for practitioners and legislative drafters. They are appropriate for training lawyers as well as non-lawyers who work with or are involved in protected areas. They can be used for legal graduate and undergraduate students, and students in different fields, from biology to international relations.

This project represents a collaboration between the IUCN Environmental Law Centre, the IUCN World Commission on Environmental Law, and the IUCN Academy of Environmental Law, working with the World Commission on Protected Areas, the IUCN Global Protected Areas Programme, and IUCN regional offices for Eastern and Southern Africa (ESARO), West and Central Africa (PACO), and Mexico, Central America and the Caribbean (ORMACC). It is generously supported by the Aage V. Jensen Charity Foundation.

All of the materials are provided through an online platform: www.protectedareaslaw.org. No registration is required to access the materials: they are freely available. The website also provides a place for instructors to upload additional materials, which can be used by others. This might include versions of the IUCN presentations or exercises which have been adapted for specific circumstances, or additional case studies or resources that could be used to supplement the existing materials. All users are encouraged to register and contribute. For further information, please contact the IUCN Environmental Law Centre at ELCSecretariat@iucn.org.

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COUNTRY REPORT: ARMENIA

ENVIRONMENTAL PROTECTION IN THE CONTEXT OF THE NEW CONSTITUTION OF THE REPUBLIC OF ARMENIA

Aida Iskoyan* Heghine Hakhverdyan** and Laura Petrossiantz***

On 6 December 2015 a Constitutional referendum was held in Armenia, and 62% voted 'Y ES' to the new Constitution which introduces fundamental amendments to the environmental provisions contained in the former Constitution.

Without prejudice to other provisions of the Constitution, in this country report we focus on approaches underlying the constitutional concept of environmental protection, the right to live in a healthy and favorable environment and the right of access to information, including environmental information. On 12 October 2015, prior to the referendum a public hearing was conducted at the Environmental Law Research Center (ELRC) of Yerevan State University with participation of members of the Constitutional Commission, academics, public officials, and representatives of NGOs and international organizations. This country report provides a comparative analysis between the actual text of the new Constitution and the proposals for changes submitted by ELRC as part of the public hearings.

Environmental Protection as a Core Value

Article 12 of the Constitution entitled 'Environmental protection and sustainable development' reads as follows:

1. The state promotes environmental protection and restoration, reasonable use of natural resources governed by the principle of sustainable development and taking into account responsibility towards future generations.

2. Everyone shall take care about the environmental protection.[1]

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[1] Translated from Armenian by the authors.

ELRC had suggested the following edition of the article: 'The state shall ensure environmental protection and restoration, the reasonable use of natural resources for the benefit of present and future generations' (underline added).

This suggestion essentially amounted to keeping Article 10 of the former Constitution with the corresponding additions and was substantiated on the basis that the clear formulation of norms regarding environmental protection and restoration, and reasonable use of natural resources, at the constitutional level is an important aspect of a modern Constitution, and is an aspect that was reflected in the former Constitution.

Protection of the environment is not only a fundamental value, but is also codified as a 'norm-goal' and 'norm-principle', which is indispensable for establishing human environmental rights, and for the definition of competences of the relevant public authorities at the Constitutional level as well as in legislation. The chapter within which Article 12 is reflected – namely the chapter providing the foundations for the Constitutional order – has fundamental importance in the context of the interpretation of other constitutional provisions. Given the importance of the provision the article 12 as included in the new Constitution therefore does not stand scrutiny for a number of reasons.

First, the word 'promote'**,** is not sufficiently clear and nor strong enough to achieve environmental protection. It is not binding and, therefore, by using that verb the importance of the proactive role of the State in the sphere of environmental protection is significantly reduced.

Second, returning again to the legal certainty of constitutional formulations, the use of the term 'sustainable development' is problematic. Leaving aside the theoretical discourse on defense or criticism of the sustainable development concept a number of problems may arise due to the use of this term. There is no generally accepted legal definition of the concept and the content of sustainable development is therefore uncertain. Therefore, in this case fertile ground for contradictory interpretations is established through the use of this term. It is also not possible to form a clear understanding in the context of Article 12 as to whether sustainable development is perceived as a value (as environmental protection or as a principle.

Third, the expression 'taking into account responsibility towards future generations' in paragraph 1 of Article 12 is also vague and uncertain. The term 'responsibility' in the legal sphere is endowed with certain content, which is further developed in the current legislation. However, the use of this expression in the present context leads to an incorrect understanding of 'responsibility' as a legal term, creating some disruption from the classical interpretation within the theory of law and national practice as well.

It is absolutely clear and completely acceptable that the Constitution values protection and restoration of the environment, the reasonable use of natural resources for

future generations from the perspective of not causing negative impact to the environment. While the idea is well in line with the core constitutional values, its wording, in our opinion, is not consistent enough.

As a logical continuation of the ELRC's suggestions with regard to Article 12, the ELRC also proposed to make a corresponding addition to Article 86 of the then draft Constitution which defines primary policy objectives of the state in different spheres such as economic development, employment, social issues etc. The specific suggestion was to incorporate a new subparagraph addressing environmental protection. In particular, the ELRC proposed to add the following phrase to Art 86: 'ensuring environmental safety for present and future generations'.

A final criticism of Article 12 submitted by the ELRC on the draft Constitution was that the second part of Article 12 is not methodologically substantiated. It is simply inappropriate to impose a constitutional obligation on citizens to protect the environment in the chapter 'Basics of the Constitutional Order'. There is an obvious asymmetry between the state and the individual in terms of sharing the 'burden' to protect the environment in terms of Article 12 - 'the state promotes' while 'Everyone shall ...'. This approach appears to be manifestly inappropriate.

Right of Access to Information

Article 51 of the Constitution establishes the right to access information as follows:

1. Everyone has the right to access data concerning the activities of public authorities, local government and respective officials and to acquaint with the documents.
2. The right to access data can be restricted only by law for the reason of protecting public interest or fundamental rights and freedoms of others.
3. The order to access data as well as the grounds for liability of officials for hiding or unlawfully rejecting access to data is prescribed by law.

The ELRC welcomed the approach in the Constitution to regulate the right to access to data (information) within a single provision. However, the following criticisms concerning this provision were recorded by the ELRC at the public hearings.

First, the content and meaning of the term 'data' is narrower than that of the term 'information'. The latter would have included records formed through, for example, processing or summarizing data while the former would seem to exclude such categories of information. The use of the term 'data' could therefore lay a foundation for limiting the scope of information accessible by the public.

Second, the expression 'data concerning the activities of public authorities, local government and respective officials' significantly narrows the scope of publicly available information. It is obvious that information about the activities is much more limited than information relevant to competences, which is not always directly linked to activities. In addition, the legal content of the word 'activity' itself is not clear. Therefore, ELRC had suggested corresponding replacement of this expression. Unfortunately, the ELRC's recommendations were not accepted.

Progress or Regress?

The new Constitution does not envisage *the right to live in a healthy and favorable environment* which has raised serious concerns among civil society organizations and individual experts that are also shared also by the academic community. A particularly troubling question is why the new Constitution no longer incorporates such a right, which did exist in terms of the previous Constitution. This omission is particularly puzzling given the fact that the decision to bring about constitutional reform was *inter alia* based on the desire to strengthen and establish fundamental human rights. This is clearly evident from the Concept document which underpinned the amendment process. The document, which outlined the proposed amendments of the Constitution, states as follows:

> *To overcome the existing half-solutions in the current Costitution and to complete systematic approaches the following is stated:*
> *1. The latest history of constitutoinal developments in the Republic of Armenia proved that due to both objective and subjective reasons the development of an independent statehood has not reached a stage to record that the democracy has a constant basis, human rights are reliably protected,* (underline added) ***....***
> *2. In terms of methodology it is necessary to make a coherent transition from the authority-centered system of constitutional solutions to anthropocentric system, which could not be fully implemented within constitutional reforms in 2005. This in turn implies craetion of necessary and sufficient preconditions for the realization of the constitutional principle "rule of law"* (underline added).
> *3. Rule of law, constituting the essence of the legal state implies, that human rights must be constitutionally fixed, legally guaranteed, protected and provided with adequate procedural solutions.*

Given these fundamental objectives of the reform, it is entirely unexpected and surprising that the drafters of the new Constitution stepped back from including the right to live in a healthy and favorable environment in the new Constitution. The ELRC deeply believes this

to be a serious drawback of the new Constitution[2]. Unlike the pformer Constitution, the new Constitution also does not incorporate the *duty to protect and improve the environment individually or jointly with others,* which the ELRC considers to be of vital importance to any society in terms of valuation of public goods.

As a conclusion we find that the new Constitutional solutions in the sphere of protection of the environment and the right to live in a healthy and favorable environment undermine the importance of the environment as a core value and are not efficient in terms of further progressive development of the current legislation.

[2] Analysis of ELRC concerning environmental human rights in the new Constitution has been widely shared and covered by national media and also posted on the web-page of the Armenian Aarhus Centres – www.aarhus.am.

COUNTRY REPORT: AUSTRALIA

Katherine Owens*

Introduction

In 2015, the Federal Government introduced a Bill designed to block environmental groups using 'lawfare' to delay and disrupt coal mining projects. The Bill followed closely on the heels of the Federal Court's decision to set aside the Commonwealth Environment Minister's approval of the Adani Carmichael coal mine in Queensland, one of a number of Federal and State court cases commenced and/or decided in relation to coal mining projects in 2015. This Report will examine the Federal Government's proposed reforms to the test for standing under Commonwealth environmental legislation, as well as the court cases that immediately preceded the introduction of the Bill. Separately, the Report will also discuss the Humane Society International Incorporation's successful application for orders that Kyodo Senpaku Kaisha Ltd, the company responsible for conducting Japan's scientific whaling program, be held in contempt of the Federal Court of Australia, and recent developments in Australia's climate policy that were announced in the lead up to the 2015 United Nations Climate Change Conference in Paris.

Federal Government Attempts to Limit Environmental Challenges

Section 487 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) ('EPBC Act') currently provides, for both individuals and organisations, a statutory test for standing in relation to applications for judicial review of decisions made under the Act. It extends the meaning of the term 'person aggrieved' in the *Administrative Decisions (Judicial Review) Act 1977* (Cth), allowing an environmental group that has engaged in relevant environmental research or activities in the previous two years, and has environmental research or protection included in its objects of association, to bring an action under the EPBC Act. The *Environment Protection and Biodiversity Conservation Amendment (Standing) Bill 2015* ('the Bill'),[1] introduced on 20 August 2015, would amend the EPBC Act to repeal the extended standing provision under s 487, with the effect that only 'aggrieved persons' within the meaning of the *Administrative Decisions (Judicial Review) Act 1977* (Cth)

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[1] Australian Parliament, at:
www.aph.gov.au/Parliamentary_Business/Bills_Legislation/Bills_Search_Results/Result?bId=r5522.

would be entitled to lodge an application for judicial review of decisions made under the EPBC Act.[2]

The Bill was introduced following the Federal Court's consent orders in *Mackay Conservation Group v Minister for Environmen*t,[3] which set aside a decision of the Commonwealth Environment Minister under the EPBC Act to approve a proposed action to develop the Carmichael mine, an open cut and underground coal mine with rail link and associated infrastructure in central Queensland, which is discussed in detail below. In his second reading speech for the Bill the Minister for the Environment, the Hon Greg Hunt MP, identified this litigation, among other coal mining challenges in Queensland, as 'a major threat to the administration of the EPBC Act', referring to the 'direct Americanisation' of litigation through 'the use of litigation to disrupt and delay key projects and infrastructure within Australia and to directly increase investor risk'.[4] The Minister then went on to state that:

> *Changing the EPBC Act will not prevent those who may be affected from seeking judicial review. It will maintain and protect their rights. However, it will prevent those with no connection to the project, other than a political ambition to stop development, from using the courts to disrupt and delay key infrastructure where it has been appropriately considered under the EPBC Act*.[5]

The proposed amendment is not, however, likely to remove the ability of environmental groups to challenge decisions under the EPBC Act.[6] Rather, the courts will need to engage in the lengthy assessments required in order to establish common law standing.[7] When

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[2] See Law Council of Australia, Submission No 61, to Senate Standing Committee on Environment and Communications, Inquiry into the Environment Protection and Biodiversity Conservation Amendment (Standing) Bill 2015, 10 September 2015, 4.

[3] Federal Court of Australia, No: NSD33/2015, Consent Order, 4 August 2015.

[4] The Hon Greg Hunt MP, Minister for the Environment, House of Representatives, Hansard, 20 August 2015, 8987.

[5] The Hon Greg Hunt MP, Minister for the Environment, House of Representatives, Hansard, 20 August 2015, 8990, cited in Australian Parliament, The Senate, Environment and Communications Legislation Committee, Report on the Provisions of the Environment Protection and Biodiversity Conservation Amendment (Standing) Bill 2015, November 2015, 2.

[6] Andrew Edgar, 'Proposed Repeal of s 487 of the EPBC Act: The end of litigation by environmental groups?', 7 September 2015, AUSPUBLAW

[7] Andrew Edgar, 'Proposed Repeal of s 487 of the EPBC Act: The end of litigation by environmental groups?', 7 September 2015, AUSPUBLAW; National Environmental Law Association, Submission

determining whether a person is aggrieved,[8] the courts have commonly referred to the 'special interest' test under the common law in relation to environmental groups set out in *Australian Conservation Foundation v Commonwealth*.[9] In that case, the High Court held that something more than a mere intellectual or emotional interest was required in order to meet the threshold of having a 'special interest' in the subject matter of the decision.[10] Justice Gibbs stated:[11]

> *A person is not interested within the meaning of the rule, unless he is likely to gain some advantage, other than the satisfaction of righting a wrong, upholding a principle or winning a contest, if his action succeeds or to suffer some disadvantage, other than a sense of grievance or a debt for costs, if his action fails.*

However, subsequent courts have taken a more flexible approach, and have had regard to a variety of features indicative of a 'special interest' in the subject matter of the dispute, such as whether a group is recognised as the 'peak body' on a certain matter, and whether the group is granted government funding for its activities and included in public consultation processes in relation to the subject matter of the decision.[12]

No 80, to Senate Standing Committee on Environment and Communications, Inquiry into the Environment Protection and Biodiversity Conservation Amendment
(Standing) Bill 2015, 4 September 2015, 4-5; Stephen Keim and Chris McGrath, 'Chicken Little Abbott and Brandis wrong on "lawfare"', The Canberra Times, 21 August 2015.

[8] In terms of s 5 of the *Administrative Decisions (Judicial Review) Act 1977*) (other than those acting for unincorporated associations (s 488) and those seeking an injunction under the Act (s 475(6) and s 475(7)).

[9] (1980) 146 CLR 493. See Andrew Edgar, 'Proposed Repeal of s 487 of the EPBC Act: The end of litigation by environmental groups?', 7 September 2015, AUSPUBLAW.

[10] Australian Conservation Foundation v Commonwealth (1980) 146 CLR 493, 530-1.

[11] *Australian Conservation Foundation v Commonwealth* (1980) 146 CLR 493, 530-1; see also Andrew Edgar, 'Proposed Repeal of s 487 of the EPBC Act: The end of litigation by environmental groups?', 7 September 2015, AUSPUBLAW.

[12] See, for example, *ACF v Minister for Resources* (1989) 76 LGRA 200 and *North Coast Environment Council Inc v Minister for Resources* (1994) 55 FCR 492, both cited in National Environmental Law Association, Submission No 80, to Senate Standing Committee on Environment and Communications, Inquiry into the Environment Protection and Biodiversity Conservation Amendment (Standing) Bill 2015, 4 September 2015, 4 and Faculty of Law, University of Tasmania, Submission No 60, to Senate Standing Committee on Environment and Communications, Inquiry into the Environment Protection and Biodiversity Conservation Amendment (Standing) Bill 2015, 10 September 2015, 3.

Many submissions on the Bill also noted that the provision for extended standing is a key component of the original architecture of the EPBC Act,[13] which indicated 'the importance the legislature attached to the involvement and input of concerned members of the community – an importance that reflects the objects set out in s 3 of the Act'.[14] Extended standing provisions of this nature are based on the principle of the rule of law, and ensure that the potential environmental impacts of a project are appropriately assessed, and that decision-making processes are accountable and transparent.[15] Statistics also indicate that, contrary to the observations of the Minister for the Environment, the extended standing provisions have been used very sparingly.[16]

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[13] See, for example, Professor Jacqueline Peel et al, Submission No 76, to Senate Standing Committee on Environment and Communications, Inquiry into the Environment Protection and Biodiversity Conservation Amendment; (Standing) Bill 2015, 10 September 2015, 3, and National Environmental Law Association, Submission No 80, to Senate Standing Committee on Environment and Communications, Inquiry into the Environment Protection and Biodiversity Conservation Amendment (Standing) Bill 2015, 4 September 2015, 2.

[14] Anvil Hill Project Watch Association Inc v Minister for the Environment and Water Resources [2007] FCA 1480.

[15] Professor Rosemary Lyster and Dr Andrew Edgar, Australian Centre for Climate and Environmental Law, Submission No 55, to Senate Standing Committee on Environment and Communications, Inquiry into the Environment Protection and Biodiversity Conservation Amendment (Standing) Bill 2015, 2; Law Council of Australia, Submission No 61, to Senate Standing Committee on Environment and Communications, Inquiry into the Environment Protection and Biodiversity Conservation Amendment (Standing) Bill 2015,10 September 2015, 7-10; Andrew Edgar, 'Proposed Repeal of s 487 of the EPBC Act: The end of litigation by environmental groups?', 7 September 2015, AUSPUBLAW.

[16] See, for example, Dr Chris McGrath, Submission No 96, to Senate Standing Committee on Environment and Communications, Inquiry into the Environment Protection and Biodiversity Conservation Amendment (Standing) Bill 2015, 11 September 2015, 5-8; Dr Jacqueline Peel et al, Submission No 76, to Senate Standing Committee on Environment and Communications, Inquiry into the Environment Protection and Biodiversity Conservation Amendment (Standing) Bill 2015, 10 September 2015, 2-4, and Australian Parliament, The Senate, Environment and Communications Legislation Committee, Report on the Provisions of the Environment Protection and Biodiversity Conservation Amendment (Standing) Bill 2015, November 2015, 4-6. The grounds upon which judicial review can be sought under both the EPBC Act and the AD (JR) Act are narrow, and confined to questions of due process and the lawfulness of decision-making. Of the approximately 5500 referrals of projects for approval under the legislation, only 22 have been challenged in judicial review proceedings since 2000.

On 20 August 2015, the Senate referred the Bill for inquiry and report, and on 18 November 2015, the Environment and Communications Legislation Committee released its final report, recommending that the Bill be passed (a view not supported by the Labor or Greens Senators on the Committee). The Committee considered that:[17]

> *The repeal of section 487 will not diminish the protection of Australia's environment and the conservation of biodiversity and heritage provided by the EPBC Act. The provisions of the EPBC Act specify the arrangements for environmental impact assessment and the matters that the minister must have to regard to when deciding to grant an approval. These provisions, which are the core of the Commonwealth regime for the protection of matters of national environmental significance, will not be altered by the repeal of section 487.*

The committee notes that review of decisions under the EPBC Act will remain available through the ADJR Act and Judiciary Act. In addition, the committee notes that there is continuous engagement with interested stakeholders, including communities where projects are proposed, in both Commonwealth and state and territory environmental assessment processes.

The Bill is now awaiting further debate in the Senate, which is the Upper House in the Australian Parliament.[18]

Mega-Mine Proposals Locked in Litigation

Queensland's Galilee Basin has become one of the 'key battlegrounds' in the fight to phase out fossil fuels, where a number of proposed coal mines are being challenged by environmental and community groups.[19] Potential land use conflicts and growing concern over the Great Barrier Reef's endangered coral system are likely to keep these proposed coal developments high on the public agenda in 2016. The following section will focus on the legal challenges to the Carmichael Mine in the Galilee Basin, which is the most advanced proposal, and which also precipitated the Federal Government's proposed reforms to standing. The Carmichael mine is, however, only one of a number of large coal mining

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[17] Australian Parliament, The Senate, Environment and Communications Legislation Committee, Report on the Provisions of the Environment Protection and Biodiversity Conservation Amendment (Standing) Bill 2015, November 2015, 27.

[18] See Australian Parliament, Bills and Legislation, Environment Protection and Biodiversity Conservation Amendment (Standing) Bill 2015, <www.aph.gov.au/Parliamentary_Business/Bills_Legislation/Bills_Search_Results/Result?bId=r5522>

[19] Jamie Smyth, 'Great Barrier Reef: Battle under the sea', 19 May 2015, *Financial Times,* http://www.ft.com/intl/cms/s/0/5fa694fa-fae8-11e4-9aed-00144feab7de.html#axzz3wSZZR16g.

developments proposed within the Gaililee Basin. Other mines the subject of challenge also include the Alpha Coal mine and Kevin's Corner.[20]

Carmichael Mine in Queensland

Judicial Review in the Federal Court

Adani Mining Pty Ltd, a wholly owned subsidiary of India's Adani Group, proposes to construct a AU$16 billion open-cut and underground coal mine and 189-kilometre rail line, but has faced repeated challenges from environmental groups.[21] The mine will extract approximately 60 million tonnes of coal per annum, and operate for approximately 90 years, making it one of the largest coal mines in the world.[22] Environmental campaigners have focussed on the impacts of the project on climate change, with the burning of coal produced by the mine likely to generate an estimated 4.7 billion tonnes of greenhouse gas emissions.[23]

On 12 January 2015, the Mackay Conservation Group filed an application for judicial review under the Administrative Decisions (Judicial Review) Act 1977 (Cth) of the decision of the Minister for the Environment made under the EPBC Act to approve proposed action to develop an open cut and underground coal mine, rail link and associated infrastructure in central Queensland, subject to certain conditions.[24] The challenge was based on a number of grounds, including:[25]

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[20] For detailed and helpful case studies in relation to the mines see Dr Chris McGrath, Environmental Law Australia, 'Case Studies', at http://envlaw.com.au/alpha-coal-mine-case/.

[21] See Queensland Government, Department of State Development, Coordinator-General Projects, Carmichael Coal Mine and Rail Project, http://www.statedevelopment.qld.gov.au/assessments-and-approvals/carmichael-coal-mine-and-rail-project.html.

[22] Environmental Impact Statement, Executive Summary, E-I, www.statedevelopment.qld.gov.au/assessments-and-approvals/carmichael-coal-environmental-impact-statement.html.

[23] See Dr Chris McGrath, Environmental Law Australia, 'Case Studies' citing Joint Expert Report to the Land Court of Queensland on 'Climate Change –Emissions', Taylor & Meinshausen, < http://envlaw.com.au/carmichael-coal-mine-federal-court/>; see also, Australian Conservation Foundation Incorporated v Minister for the Environment, QUD1017/2015, [15].

[24] *Mackay Conservation Group v Minister for Environment*, Originating Application for Judicial Review, NSD33/2015.

[25] Sue Higginson, 'Is the Carmichael Court win a mere technical hitch?', 5 August 2015, www.edonsw.org.au/carmichael_not_a_technical_hitch.

> *The failure to take into account the scope 3 greenhouse gas emissions that will result from the burning of the coal that is mined, and the impact of those emissions on the World Heritage listed Great Barrier Reef*
> *The failure to take into account Adani's poor environmental history*
> *The failure to take into account two Approved Conservation Advices for two nationally threatened species that will be significantly impacted by the mine – the Yakka Skink and the Ornamental Snake.*

The Minister and Adani conceded the case on the basis of the third point, and the parties filed orders requesting that the Minister's approval of the mine be set aside by consent. The proposed orders were presented to the Federal Court via a letter from the Australian Government Solicitor (AGS), acting for the Minister and the Commonwealth, which was written with the agreement of Mackay Conservation Group and Adani Mining Pty Ltd. The Federal Court then made orders by consent setting aside the Minister's decision on 4 August 2015.26 On 14 October 2015, the Minister re-approved the Carmichael Coal Mine and Rail project, stating that the project had been approved 'in accordance with national environment law subject to 36 of the strictest conditions in Australian history'.27 This second EPBC Act approval is now the subject of a separate application for judicial review lodged on 9 November 2015 by the Australian Conservation Foundation in the Federal Court in Brisbane.28 The application alleges that the Minister failed to properly consider the impacts of the climate pollution from the mine on the Great Barrier Reef World Heritage Area, including that the Federal Minister failed to consider the effect on the Great Barrier Reef of 'emissions from transport by rail, shipping and combustion of the product coal overseas', contravening the EPBC Act and, by extension, Australia's international obligations to protect the Great Barrier Reef.29

Merits review in the Land Court of Queensland

The Carmichael mine also requires a mining lease under the Mineral Resources Act 1989 (Qld) (MRA), and an environmental authority under the Environmental Protection Act 1994

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[26] Federal Court of Australia, Statement re NSD33/2015 Mackay Conservation Group v Minister for Environment, 19 August 2015, http://www.fedcourt.gov.au/news-and-events/20-august-2015.

[27] The Hon Greg Hunt MP, Minister for the Environment, 'Carmichael Coal Mine and Rail Infrastructure Project', Media Release, 15 October 2015.

[28] Australian Conservation Foundation Incorporated v Minister for the Environment, Originating Application for Judicial Review, QUD1017/2015.

[29] Australian Conservation Foundation Incorporated v Minister for the Environment, Originating Application for Judicial Review, QUD1017/2015.

(Qld) (EPA). These State approval processes have resulted in a number of additional objections in the Land Court of Queensland under the MRA and EPA, including from a conservation group, Land Services of Coast and Country Inc, which objected to the grant of the mining lease and the environmental authority on a number of grounds, including impacts on groundwater systems and biodiversity, particularly the black-throated finch, which is an endangered bird species.[30] The Land Court delivered its decision on 15 December 2015, recommending that the mining lease and environmental authority be granted subject to further conditions in relation to monitoring of impacts on Black-throated Finch, which the Queensland State Government will now take into consideration in making its decision on the mining lease and environmental authority for the proposed project.[31]

The Carmichael mine also relies on the expansion of the Abbot Point Coal Terminal, and on 24 December 2015, the Federal Government approved the third iteration of this proposal, known as the Abbot Point Growth Gateway Project.[32] Previous versions of the project have been challenged by environmental groups, on the basis of, among other matters, the Terminal's proximity to the Great Barrier Reef and proposals to dispose of dredge spoil in the marine park.[33] It is expected that further challenges will be lodged in relation to the Government's 24 December 2015 decision.[34]

Within months of the Federal Court challenge to the Carmichael mine in Queensland, a local community group in NSW, the Upper Mooki Landcare Group, with the assistance of the Environmental Defenders Office NSW, applied for judicial review in the NSW Land and Environment Court of the NSW Government's decision to grant approval to Shenhua Watermark's open cut coal mine on the Liverpool Plains in north-western NSW on the basis

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[30] Adani Mining Pty Ltd v Land Services of Coast and Country Inc & Ors [2015] QLC 48, [15].

[31] See Dr Chris McGrath, Environmental Law Australia, 'Case Studies', < http://envlaw.com.au/carmichael-coal-mine-federal-court/>.

[32] Australian Government, Department of the Environment, Approval, Abbot Point Growth Gateway Project, Queensland (EPBC 2015/7467), <epbcnotices.environment.gov.au/_entity/annotation/2f828db4-2fa8-e511-9621-005056ba00a7/a71d58ad-4cba-48b6-8dab-f3091fc31cd5?t=1450740730681>.

[33] MacKay Conservation Group, 'Abbot Point – a disaster in the making', www.mackayconservationgroup.org.au/abbot_point_a_disaster_in_the_making.

[34] Emily Smith, 'Long Road Awaits Adani despite coal expansion approval', *Daily Mercury*, 24 December 2015, <www.dailymercury.com.au/news/long-road-awaits-adani-despite-port-tick/2882484/>; SBS, 'Donations Flow to Abbot Point Challenge', 23 December 2015, www.sbs.com.au/news/article/2015/12/23/donations-flow-abbot-point-challenge.

of the Minister's failure to consider the mine's impacts on a local population of Koala's.[35] The Liverpool Plains is one of Australia's most productive farming areas and Shenhua, a Chinese company, plans to extract up to 10 million tonnes of coal from the open cut mine each year for 30 years.[36]

Challenges under Australia's National Laws to Japan's Scientific Whaling Program

This year also saw the revival of the Federal Court's 2008 decision in *Humane Society International Inc v Kyodo Senpaku Kaisha Ltd,*[37] in which Humane Society International ('HSI') successfully obtained a declaration and an injunction from the Federal Court of Australia to restrain Japanese whaling in the Australian Whale Sanctuary, within the waters of Australia's exclusive economic zone around its Antarctic territory. HSI challenged Japan's scientific whaling program on the basis that Kyodo Senpaku Kaisha Ltd ('Kyodo'), the company responsible for conducting the whaling program, was breaching the provisions of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) ('EPBC Act'), given that the company did not, at any time, hold a permit or authority as required under the EPBC Act for killing, taking and treating Antarctic minke whales off the coast of Antarctica in the Australian Whale Sanctuary. These orders were served by HSI representatives on Kyodo, which continued to conduct 'scientific' whaling activities in the Australian Whale Sanctuary between 2008 and 2013 in contravention of the orders.[38] The Australian Government did not take enforcement action in relation to those orders pending the outcome of the International Court of Justice hearing into Japan's whaling program (examined in the 2014 Country Report). However, with the recommencement of Japan's whaling program scheduled for December 2015, HSI sought to enforce the 2008 injunction,[39] making an application for orders that the respondent, Kyodo, be found guilty of contempt of court on the basis that it has killed, taken and treated Antarctic minke whales off the coast of Antarctica in the Australian Whale Sanctuary in each of the summers of 2008 to 2009, 2009 to 2010,

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[35] EDO NSW, 'Current Cases: Upper Mooki Landcare Inc v Shenhua Watermark Coal Pty Ltd and NSW Minister for Planning', <www.edonsw.org.au/current_cases>.

[36] Shenhua Watermark Coal Pty Ltd, Watermark Coal Project, Environmental Impact Statement, February 2013, iii, <majorprojects.affinitylive.com/public/a86af1422205f18302ef3aafb59cb191/01.%20Watermark%20Coal%20Project%20EIS%20-%20Main%20Report.pdf> .

[37] (2008) 165 FCR 510; [2008] FCA 3.

[38] EDO NSW, 'Current Cases: Humane Society International v Kyodo Senpaku Kaisha Ltd' www.edonsw.org.au/current_cases.

[39] EDO NSW, 'Current Cases: Humane Society International v Kyodo Senpaku Kaisha Ltd' www.edonsw.org.au/current_cases**.**

2011 to 2012 and 2012 to 2013 in breach of the 2008 Injunction.[40] On 18 November 2015, the Federal Court ruled that Kyodo is in contempt of Court and fined the company AU$1 million dollars.[41]

Compromise reached on Renewable Energy Target

After months of deadlock and uncertainty in relation to the future of renewable energy in Australia, the Australian Parliament passed the Renewable Energy (Electricity) Amendment Bill 2015 to amend the *Renewable Energy (Electricity) Act 2000* (Cth). The Bill reflects the bipartisan deal reached between the Federal Government and Labour opposition to reduce Australia's large-scale Renewable Energy Target from 41 000 GWh (about 27 percent of current forecast energy demand) to 33 000 GWh in 2020 (about 23 percent of current forecast energy demand), with interim and post-2020 targets adjusted accordingly. For a detailed overview of the framework and aims of the Renewable Energy Target ('RET') and the 2014 RET Review, please see the 2014 Country Report.

The expert consensus appears to be that, although the new target is significantly lower than the current target of 41,000GWh, the revised target will still require substantial increase in renewable energy capacity over the next five years.[42] However, as part of the bipartisan agreement, emissions-intensive trade-exposed industries are now fully exempted from the target, and the requirement for legislated biennial reviews of the RET have been removed. The Bill has also reinstated biomass from native wood waste as an eligible source of renewable energy under the same conditions that existed prior to its removal from eligibility in 2011. The latter change was the subject of considerable debate in the Senate, with amendments to remove the change moved by the Greens (with the support of Labor) on account of concerns that the reinstatement of native forest wood waste provide an incentive for logging high conservation value forests for the purposes of electricity generation.[43] The

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[40] Humane Society International Inc v Kyodo Senpaku Kaisha Ltd [2015] FCA 1275, [1].

[41] Humane Society International Inc v Kyodo Senpaku Kaisha Ltd [2015] FCA 1275, [46].

[42] Sallyanne Everett et al, 'More wind farms likely as a result of changes to the Renewable Energy Target' Clayton Utz Insights, 25 June 2015; www.claytonutz.com/publications/edition/25_june_2015/20150625/more_wind_farms_likely_as_a_result_of_changes_to_the_renewable_energy_target.page.

[43] Australian Parliament, Senate Hansard, Bills, Renewable Energy (Electricity) Amendment Bill 2015, 15 June 2015, 3348. See also Australian Government, Climate Change Authority, Renewable Energy Target Review, December 2012, 7.1.5.

Bill was, however, passed with this provision after the Federal Government reached a deal with four crossbenchers to establish a National Wind Farm Commissioner.[44]

Emissions Reduction Fund Safeguard Mechanism Finalised

In August 2015, the Federal Government announced Australia's Intended Nationally Determined Contribution, or post-2020 target, for presentation to the UNFCCC conference in Paris. The target proposes a reduction of Australia's emissions by 26-28% by 2030 based on 2005 levels,[45] which falls significantly short of the Climate Change Authority's recommended targets of 30% below 2000 levels by 2025, and 40-60% below 2000 levels by 2030.[46] The Government has indicated that it will meet the target by implementing a 'suite of Direct Action policies' that were outlined in the 2014 Country report for Australia, including the Emissions Reduction Fund and Safeguard Mechanism, along with the Renewable Energy Target and initiatives in energy efficiency and energy productivity.[47]

This year, the Government also finalised rules to support the Safeguard Mechanism for Emissions Reduction Fund ('ERF'), which is designed to ensure that emissions reductions purchased through the ERF are not displaced by increased emissions elsewhere in the economy.[48] The key requirement under the Safeguard Mechanism, which is to come into effect on 1 July 2016, is that facilities that emit more than 100,000 tonnes of greenhouse

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[44] Melissa Clarke, 'Renewable Energy Target: Greens accuse Government of creating 'dead koala certificates', ABC News, 24 June 2015, <www.abc.net.au/news/2015-06-24/greens-accuse-government-of-creating-27dead-koala-certificates/6569594>. The Wind Farm Commissioner will deal primarily with health concerns in relation to wind farms: see The Hon Greg Hunt MP, Minister for the Environment, 'Appointment of National Wind Farm Commissioner and Independent Scientific Committee on Wind Turbines', Media Release, 9 October 2015, www.environment.gov.au/minister/hunt/2015/mr20151009.html.

[45] Australian Government, Department of the Environment, 'Australia's 2030 climate target', www.environment.gov.au/climate-change/publications/factsheet-australias-2030-climate-change-target.

[46] Australian Government, Climate Change Authority, 'Targets and Progress Review', www.climatechangeauthority.gov.au/reviews/targets-and-progress-review-3.

[47] Australian Government, Department of Foreign Affairs and Trade, 'Australia's 2030 Emission Reduction Target';
www.dpmc.gov.au/sites/default/files/publications/Summary%20Report%20Australias%202030%20Emission%20Reduction%20Target.pdf.

[48] The rules are contained in the following legislative instruments: National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015, National Greenhouse and Energy Reporting Amendment (2015 Measures No. 2) Regulation 2015; and National Greenhouse and Energy Reporting (Audit) Amendment Determination 2015 (No 1).

gas annually[49] must keep their net emissions below a specified baseline. The Rules include, among other matters, methods for establishing baselines for existing and new projects and the means by which baselines may be met and/or altered. Civil penalties of up to AU$1.8 million may be imposed on responsible emitters who exceed their baselines.

A major criticism of the baselines to be set under the Safeguard Mechanism is that those baselines are not expected to drive emissions reduction activities within the relevant facilities.[50] However the Explanatory Statement makes it clear that the Government's objective is to achieve national emissions reductions through the ERF, and not the Safeguard Mechanism. The role of the Safeguard Mechanism, according to the Federal Government, is to ensure that reductions purchased under the ERF are not displaced by a significant rise in emissions above business as usual.[51]

Although Australia will technically meet its 2020 greenhouse emission reductions targets, primarily due to Kyoto carryovers, absolute emissions will not reach minus 5 per cent by 2020.[52] RepuTex projects that:[53]

> *[N]ational emissions will increase from minus 2 per cent on 2000 levels to 4 per cent above 2000 levels by 2020. Emissions growth will be driven by increased activity in the land-clearing, generation and export sectors, with new LNG and Coal facilities – including Gorgon,*

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[49] Around 140 facilities will be captured by this threshold.

[50] Elisa de Wit, 'Exposure Draft Rules released for Safeguard Mechanism', Norton Rose, 7 September 2015, <www.nortonrosefulbright.com/au/knowledge/publications/132039/exposure-draft-rules-released-for-safeguard-mechanism?utm_source=Mondaq&utm_medium=syndication&utm_campaign=View-Original>; RepuTex, 'Government lets top 20 polluters off the hook', 3 August 2015, www.businessspectator.com.au/article/2015/8/3/carbon-markets/government-lets-top-20-polluters-hook?utm_source=exact.

[51] Australian Government, Explanatory Statement, *National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015*, 6, 10-12; Elisa de Wit, 'Exposure Draft Rules released for Safeguard Mechanism', Norton Rose, 7 September 2015; <www.nortonrosefulbright.com/au/knowledge/publications/132039/exposure-draft-rules-released-for-safeguard-mechanism?utm_source=Mondaq&utm_medium=syndication&utm_campaign=View-Original.

[52] Lenore Taylor, 'Greg Hunt confirms Australia has 'officially' met its 2020 climate goal', 25 November 2015, <www.theguardian.com/environment/2015/nov/25/greg-hunt-confirms-australia-has-officially-met-its-2020-climate-goal.

[53] RepuTex, 'Update: The Price of Emissions Growth – Accounting to 2020', 20 November 2015, www.reputex.com/publications/market-update/update-market-to-pay-for-australian-emissions-growth-accounting-our-way-to-2020/.

> *Wheatstone, APLNG, Maules Creek and Grosvenor – becoming operational between 2015 and 2017.*
>
> *While immaterial to Australia's 2020 Kyoto commitment, short-term growth will place significant pressure on Australia's 2030 emissions target, given any emissions increases from today will ultimately need to be reduced later.*
>
> *Analysis indicates that emissions increases over 2015-20 may double the rate of Australia's annual abatement task out to 2030, while compounding the cost of action. From today, we estimate Australia requires nearly 6 million tonnes (Mt) of "new" abatement each year to meet its 2030 target. Should emissions grow as expected, Australia would instead require 13 Mt of "new" abatement each year over 2020-2030, more than double the current rate.*

Accordingly, it remains to be seen how the Australian Government will transition from its current policy approach, with ERF funding to end in 2016, to a pathway that will position Australia to meet its pledged targets for 2030.

COUNTRY REPORT: THE BAHAMAS:

Legislative Developments

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with assistance from
Lisa Benjamin, Assistant Professor, The College of The Bahamas[**]

Introduction

This report provides a brief overview of the legislative developments concerning access to environmental information and public participation in developmental decisions, and the conservation and sustainable funding of Bahamian protected areas and resources. This report reviews the legislative developments in 2015 and assesses their success in providing governmental accountability, access to justice and public participation in environmental decision making.

Generally, environmental legislation in The Bahamas is outdated and fragmented. In recent years, however, a number of pieces of environmental legislation have been developed. This is most likely the result of regional and international commitments, as well as increasing pressure from various environmental groups both regionally and nationally. In 2010 and 2012, the government of The Bahamas enacted the *Planning and Subdivision Act* and *Freedom of Information Act* respectively. These Acts were met with much public criticism and presently there are two Bills that seek to address and rectify those criticisms. Further legislative developments include the enactment of the *Bahamas Protected Areas Fund Act 2013* and an amendment to *The Fisheries Resources (Jurisdiction and Conservation) Regulations*. These recent developments illustrate a new attitude toward environmental and resource preservation, while acknowledging the importance of access to information and public participation to ensure more effective legislative enforcement.

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Freedom of Information Act

The issue of freedom of information in the environmental field has gained ground in the region. Throughout the Latin American and Caribbean the regional movement toward access to information, public participation and access to justice principles has progressed into a Declaration on the application of Principle 10 of the Rio Declaration on Environment and Development.[1] In the Declaration, signatory countries[2] (The Bahamas is not a signatory) have pledged to advance the implementation of a regional agreement on the three pillars of environmental democracy established in the Rio Declaration under Principle 10.

Prior to January 2012, The Bahamas had no Freedom of Information (FoI) legislation in place to enable its citizenry access to government-controlled information. However, amid public outcries and much criticism by citizens and civic groups,[3] the Government of The Bahamas drafted and tabled its first *Freedom of Information Act* in 2012 (FoIA). The Act, although passed in 2012, has not been enforced to date due to the Minister responsible never announcing a date for its coming into operation and it never having been officially gazetted. A Committee was formed to review the 2012 Act and a revised Bill was published in 2015.

The Freedom of Information Act 2012

The FoIA 2012 was received sceptically by the public, who criticized the Act for many noted deficiencies. The shortcomings of the law included the lack of access to judicial or quasi-judicial bodies to challenge decisions made by Ministers of government agencies, the wide class of documents that are exempt from disclosure, the lack of definition of 'public interest' (relevant to justifying exemptions to the disclosure of information in the 'public interest'), and the lack of provisions for the disclosure of Environmental Impact Assessments (EIAs).

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[1] Economic Commission for Latin America and the Caribbean, 'Principle 10' (*Economic Commission for Latin America and the Caribbean*) <http://www.cepal.org/en/principio-10> accessed 21 December 2015.

[2] Brazil, Chile, Columbia, Costa Rica, Dominican Republic, Ecuador, Honduras, Jamaica, Mexico, Panama, Peru, Trinidad and Tobago, Uruguay.

[3] Royston Jones, Protestors demand Freedom of Information Act' *The Nassau Guardian* (New Providence, 12 June 2014) <http://www.thenassauguardian.com/news/48018-protestors-demand-freedom-of-information-act> accessed 21 December 2015; Dames, Candia. 'FOIA needs close to 100 amendments' *The Nassau Guardian* (New Providence, 16 June 2014) <http://www.thenassauguardian.com/news/48114-foia-needs-close-to-100-amendments>; Royston Jones, 'Minnis calls for FOIA, gender equality op-ed' *The Nassau Guardian* (New Providence, 23 December 2015) <http://www.thenassauguardian.com/news/61505-minnis-calls-for-foia-gender-equality-in-op-ed> accessed 21 December 2015.

Retired Justice Jeanne Thompson stated, 'What we seem to be left with is an Act with no teeth. We would still be in a position waiting for a whistle blower to let us know what is going on'.[4]

During this period, the need for an enforceable FoIA was never more apparent than in the Bahamian Bimini Bay litigation brought on behalf of a coalition of concerned residents, which took place in 2014.[5] The case illustrates that without stringent requirements for information to be made accessible to the public under an enforceable and appropriate FoIA legislation, it can be extremely difficult to obtain information on projects and developments before they have progressed too quickly to be halted. An attorney representing the coalition, Dawson Malone, stated in an address to the public on the *Freedom of Information Act*, 'If I am relying on access to the court to vindicate my rights, I must have information to do so'[6] Due to the FoIA 2012 being unenforceable, there was no means for the coalition to obtain the necessary information to adequately challenge the development, and the coalition was put through the exorbitant expense of instituting a judicial review action. The lack of access to information in the Bimini Bay case is just one example of the disastrous consequences an unenforceable FoIA can have on public participation in national decision making.

The non-disclosure of EIAs was another barrier to the coalition in the Bimini Bay litigation. The EIA, which disclosed a number of negative environmental consequences of the development, was difficult to obtain. Although not in force at the time, the FoIA 2012 lacked the necessary statutory provisions on the disclosure of EIAs to ensure members of the community proper and thorough access to information to challenge the Bimini Bay development.

Since the draft of FoIA 2012 was released, various civic groups in the country have harshly criticized the Act.[7] Critics called for extensive amendments to be made to the Act in order to render it satisfactory to the public. The Government of The Bahamas noted such

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[4] Renee Farquharson, 'Access to environmental information: Our right to know' *The Nassau Guardian* (New Providence, 14 November 2014): <http://www.thenassauguardian.com/bahamas-business/40-bahamas-business/51852-access-to-environmental-information-our-right-to-know-> accessed 21 December 2015.

[5] Lisa Benjamin, 'Country Report: The Problem of Unpermitted Development and Fragmented Environmental Laws' (2015) 5 IUCNAEL EJournal: <http://www.iucnael.org/en/86-journal/issue/491-issue-20142> accessed 2 January 2016.

[6] Farquharson (n 4).

[7] Candia Dames, 'FOIA needs close to 100 amendments' *The Nassau Guardian* (New Providence, 16 June 2014) <http://www.thenassauguardian.com/news/48114-foia-needs-close-to-100-amendments> accessed 21 December 2015.

extensive amendments and decided the FoIA 2012 would best be replaced by a new piece of legislation, the Freedom of Information Bill 2015 (FoIB).

The Freedom of Information Bill 2015 versus The Freedom of Information Act 2012

The Freedom of Information Bill was published in May 2015 but has not yet been passed. The Bill seeks to reinforce and give effect to certain fundamental principles underlining the system of constitutional democracy through governmental accountability, transparency, and public participation in national decision making by granting the public a right of access to records held by public authorities.[8]

A disturbing issue in the FoIA 2012 was the unfettered power of the Minister to deny requests for information. The Minister, upon denying a request for information, could issue an exemption certificate to the person who had made the application. Where a certificate had been issued, the Act deemed it was conclusive that the record was exempt and no judicial or quasi-judicial proceedings of any kind could be brought to challenge the decision of the Minister.[9] The Minister was effectively given a veto power through these provisions, which, in effect, nullified the right of access to information granted in the legislation. The 2015 Bill addresses this by eliminating the unfettered power of the Minister.

There was also no definition of 'public interest' in the 2012 Act, and while the 2015 Bill does not provide a definition of public interest, it does set out public interest considerations which must be taken into account when deciding on disclosure. Further, the Information Commissioner is given the task of issuing guidelines on public interest considerations. In addition, the Bill clarifies that public interest considerations are not a blanket provision and the class of records exempt on the ground of public interest must satisfy a three tier test in order to be disclosed.[10]

Another vexing issue in the FoIA 2012 legislation was the list of exempt records. The statutory provisions on exempt records were extensive and included: records affecting security, defence or international relations; records relating to law enforcement; records subject to legal privilege; records affecting national economy; records revealing government's deliberative process; records which prejudice the effective conduct of public affairs; records relating to commercial interests; records relating to heritage sites; records relating to personal information; and records likely to endanger health and safety. This

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[8] Objects and Reasons, Freedom of Information Bill, 2015. The definition of public authority now covers a Ministry, Departments of Government, statutory body or authority incorporated or not, a public corporation wholly owned or partly owned by the Government, or any other body or organization specified in the Act.

[9] Freedom of Information Act 2012, s 25.

[10] Freedom of Information Bill 2015, s 16.

extensive list of exempt records does not appear to encourage the flow of information between state and citizen. The change in the Bill provides exceptions to the class of exempt records which in effect narrows the exemptions public authorities may rely on to withhold information. As a result, the provisions in the Bill define more clearly which records are exempt. Public authorities may not claim blanket exemptions but instead, the information requested must fall in the more narrowly defined provisions of exemptions. Further provisions allow for certain exemptions to be waived with the consent of appropriate parties.[11] These changes generally provide more certainty and clarity for both public officers and citizens who have to apply these exemptions.

The 2015 Bill also increases the autonomy of the Information Commissioner, which was deficient in the 2012 Act. Where a Minister has denied an application for information, the applicant who has exhausted internal review procedures may independently appeal a decision of a public authority to the Commissioner who has powers to conduct investigations, require evidence and compel witnesses to testify. The law provides for extensive review powers of sanctioned authorities to decisions denying persons access to information. Should procedures within the legislation be exhausted, persons have redress to the Supreme Court for a review of the decision by the Commissioner. The law places further accountability measures on the Commissioner to report to Parliament on the operation of the Act, ostensibly to review the Act's progress as well as its long and short term viability. To this end, the Commissioner must make annual reports on the number of exemptions claimed, the number of applications for information made, and the number of appeals against decisions inter alia.

Recommendations

The FoIB 2015, despite some shortcomings, represents significant progress toward governmental accountability, public participation in national decision making and access to information in environmental decision making. For too long, developments have negatively impacted the environment in The Bahamas with no progression towards transparency by public authorities and their role in these developments. Despite its merits, the FoIB 2015 still poses some challenges to environmental decision making due to its general nature and scope. EIAs, which form an integral part of environmental decision making, are not mentioned in the Bill as records which are specifically disclosable. While the Bahamas Environment Science and Technology (BEST) Commission does publicize EIAs on its website, it is not a statutory body and as a result it has no statutory duty to do so.[12] Further,

[11] Ibid, s 20(4).

[12] Benjamin (n 5).

as a private entity, the BEST Commission has no duty to respond to requests for information by public citizens. Recommendations to the 2015 FoIB would provide specific statutory provisions on access to EIAs to adequately challenge decisions by public authorities that affect the environment.

Bahamas Protected Areas Fund and the Fisheries Resources (Jurisdiction and Conservation) (Amendment) Regulations

This section covers The Bahamas Protected Areas Fund Act, its connection to the Caribbean Challenge Initiative and Marine Protected Areas in The Bahamas, and the recent amendment to legislation related to grouper conservation in The Bahamas.

Bahamas Protected Areas Fund

The Caribbean Challenge Initiative (CCI) is a marine conservation initiative in terms of which 9 Caribbean governments have signed a declaration pledging to safeguard the region's marine and coastal environment. The Caribbean countries that have signed the declaration are: (i) The Bahamas; (ii) The British Virgin Islands; (iii) Dominican Republic; (iv) Grenada; (v) Jamaica; (vi) Puerto Rico; (vii) St. Lucia; (viii) St. Kitts and Nevis; and (ix) St. Vincent and the Grenadines. There are two main goals of the CCI: (i) to conserve and manage at least 20% of the marine and coastal environment by 2020 (the 'twenty by twenty goal'); and (ii) to have established sustainable finance mechanisms to achieve the twenty by twenty goal. The CCI is important and significant to the region as it represents a collaborative effort throughout the Caribbean to achieve expanded protection for marine and coastal areas.

Recently, the Bahamas announced additional Marine Protected Areas (MPAs) and as a result increased its percentage of protected areas to 10%. These MPAs include expansions to the Exuma Cays Land and Sea Park, the first MPA established in 1958, and the addition of creek systems and marine reserves in the north and central Bahamas. The most recent MPAs include the Fowls Cays Land and Sea Park in Abaco, more specifically in the barrier islands of Great Abaco, and the expansion of both the Conception Island National Park and the West Side National Park of Andros, including Williams Island and Billy Island, where the newly discovered shark nursery is located. As such, The Bahamas is halfway to the twenty by twenty goal with five years remaining of the CCI. According to the Bahamas Reef Environmental Educational Foundation (BREEF), this increase in the percentage of MPAs in The Bahamas has met national goals for the year. Additionally, BREEF, while working along with the government, hopes to increase the amount of MPAs to 20% by 2020. The Caribbean Challenge Initiative has also encouraged Caribbean countries to commit to creating National Conservation Trust Funds endowed by new sustainable finance mechanisms to provide financial support for the management of protected areas.

The Caribbean Biodiversity Fund (CBF) is a regional endowment fund established in September 2012 with its corporate office in The Bahamas. The CBF has the objective to provide a sustainable flow of funds to support activities that contribute substantially to the conservation, protection and maintenance of biodiversity within the national protected areas systems or any other areas of environmental significance of participating countries. The CBF is the first regional endowment that will channel support to multiple National Conservation Trust Funds (NCTFs) established in participating countries. Its initial financial commitments amount to US$42 million[13], with commitments from Antigua and Barbuda, The Bahamas, Dominican Republic, Grenada, Jamaica, St. Kitts and Nevis, St. Lucia and St. Vincent and the Grenadines to further contribute.

In 2014, the *Bahamas Protected Areas Fund Act* (BPAF Act) became law. It provides for the establishment and regulation of The Bahamas Protected Areas Fund (BPAF). This legislation makes reference to the Caribbean Biodiversity Fund as the regional trust fund established to finance the national protected areas trust funds in such countries as it may, from time to time, decide to include.[14] Broadly, the BPAF Act provides for there to be a Register of Protected Areas[15] and establishes the BPAF as a corporate body with legal personality and perpetual succession.[16] The BPAF Act provides for the financial structure of the fund and sets out potential sources of funding.[17] The purpose of the BPAF is to ensure sustainable financing in perpetuity for the management of protected areas in The Bahamas, including financing for management activities under the CCI and the objectives of the CBF.[18]

Sustainable financing for protected areas is the ability to secure stable and sufficient long term financial resources, and to allocate the resources in a timely manner and appropriate form to cover the full costs of protected areas (direct and indirect) and ensure that the areas are managed effectively and efficiently.[19] Sustainable financing is increasingly important to the management of protected areas as there are significant costs associated with the effective protection of protected areas in perpetuity. According to information provided by The Bahamas National Trust, sustainable financing helps to ensure that

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[13] The Caribbean Challenge Initiative: Sustainable Finance: http://www.caribbeanchallengeinitiative.org/index.php?option=com_content&view=article&id=409&Itemid=255#.VqfwLFLy29Y, accessed 26 January 2016

[14] The Bahamas Protected Areas Fund Act 2014, s 2.

[15] Ibid, s 4.

[16] Ibid, s 5.

[17] Ibid, s 5(2).

[18] Ibid, s 6.

[19] Convention on Biological Diversity, 'Sustainable Finance' <https://www.cbd.int/protected-old/sustainable.shtml> accessed 7 January 2016.

ecological and economic benefits continue for the flora, fauna and people of The Bahamas.[20] As it stands presently, a 2008 Needs Assessment for The Bahamas National Protected Area System indicated that in the period between 2008 and 2018, there will be an estimated financial costs increase of some BSD$151.8 million, with a projected financial gap of $93 million, if sustainable financing mechanisms are not further developed.[21]

Additionally, the BPAF Act also provides for the BPAF to give grants and be dedicated to charitable purposes.[22] The BPAF is controlled by eleven directors who should have experience in ecological science, biodiversity conservation, finance, law, investment management, fundraising and grant writing.[23] These skill sets are necessary for undertaking the responsibilities of the Fund.

Further, it should be recognised that the commitment that The Bahamas has made under the CCI is two-fold. Firstly, through the Caribbean Challenge Initiative, The Bahamas has committed to expand its protected areas. On 31 August 2015, 15 new parks were created and three parks were expanded comprising over 11 million acres in total. Secondly, through the CCI, The Bahamas has committed to improving the effective management of these protected areas. The effective management of these protected areas is directly related to sustainable financing and its mechanisms as protected areas cannot be properly managed without the costs being properly funded. This illustrates the correlation between the CCI and national funds. The BPAF Act for The Bahamas, therefore, is not only innovative in the sense that it aligns itself with the CCI appropriately, but also for the fact that The Bahamas was the first in the region to pass legislation to establish a national conservation fund for protected areas in 2014.

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[20] Krista Sherman, 'Implementation status of the GEF FSP pilot 3 demonstration project – 'Tourism & Coral Reef Health in the Exuma Cays Land and Sea Park' (Sustainable Financing Workshop, 19 September 2012): <http://www.bahamasprotected.com/bahamasprotected_pdf/BNT%20Project%20Output%20Documents_/Sustainable%20Finance%20Workshop%20Presentation%20%283%29.pdf> accessed 7 January 2016.

[21] http://bahamasprotected.com/ accessed 26 January 2016 ; Master Plan for BNPAS para 2.3.4 http://www.bahamasprotected.com/bahamasprotected_pdf/TNC%20Project%20Output%20Document_/Master%20Plan%20for%20the%20BNPAS-FINAL-2.pdf accessed 28 January 2016; Interview with Lynn Gape, Bahamas National Trust, Deputy Executive Director, (5 February 2016).

[22] The Bahamas Protected Areas Fund Act 2014, s 9-10.

[23] Ibid, s 11.

The Fisheries Resources (Jurisdiction and Conservation) (Amendment) Regulations 2015

This amendment is quite relevant as it effectively provides for there to be an annual closed season for the Nassau grouper, an endangered species on the IUCN's Red List. The inclusion of the Nassau Grouper on the Red List is cause for grave concern. The Red List of threatened species informs policy development by providing an evaluation of the extinction risk of the species.[24] The Nassau Grouper is endangered due to overfishing and is highly vulnerable as it is a slow breeder. Without respect for a closed season during its spawning period, there is no opportunity for the species to safely reproduce. Independent of its status as a threatened species, it is also important to protect the Nassau Grouper as it plays an integral role in the delicate eco system of marine life in The Bahamas.

The *Fisheries Resources (Jurisdiction and Conservation) (Amendment) Regulations* prohibit the landing of grouper except for scientific research purposes. The closed season is from 1 December to 28 February. These dates reflect the species' breeding period. This encourages the continued spawning and conservation of the species. Prior to the amendment being passed, the decision and dates for a closed season were dependent on the political will of the Minister of Agriculture and Fisheries. This fuelled uncertainty for the protection of the Nassau Grouper which has continued to decline in population in recent years. The new legislation proposes to solve this problem by having a closed season with set dates according to the spawning period.[25] Thus, the decision to have a closed season is no longer dependent on the political will of the Minister of Agriculture and Fisheries. Further, according to BREEF, the closed season for the Nassau Grouper is stricter than other closed seasons because it does not allow for sale of the Nassau Grouper during the closed season (although the legislation does not specify if the restriction applies to fresh and frozen sales).[26]

These developments are beneficial to The Bahamas as they directly align with the two major goals of the Caribbean Challenge Initiative; to protect twenty percent of the marine and coastal environments by 2020 and to provide sustainable funding mechanisms. The Bahamas has worked toward these goals through the expansion of protected areas and the conservation of marine life, specifically the Nassau grouper. Further, through the

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[24] International Union for the Conservation of Nature, 'The IUCN Red List of Threatened Species' <http://www.iucn.org/about/work/programmes/species/our_work/the_iucn_red_list/> accessed 7 January 2016.

[25] 'Praise for Government as Grouper Season Closed' *The Tribune*, (New Providence, 6 December 2014) <http://www.tribune242.com/news/2014/dec/11/praise-government-grouper-season-closed/> accessed 7 January 2016.

[26] Interview with Casuarina McKinney Lambert, BREEF Director (15 December 2015).

implementation of legislation to regulate the Bahamas Protected Areas Fund, The Bahamas has sought to establish mechanisms to enable sustainable finance in so far as it relates to those protected areas.

Department of Environmental Planning and Protection Bill and Planning and Subdivision Bill

This section of the report discusses the development of environmental legislation in The Bahamas through two Bills: the Environmental Planning and Protection Bill 2015 and the Planning and Subdivision Bill 2015.

Department of Environmental Planning and Protection Bill 2015

One of the objectives of the Department of Environmental Planning and Protection Bill 2015 (DEPP Bill) was to cure the significant institutional fragmentation that The Bahamas suffers from. The issue of fragmented environmental laws was addressed in the IUCN EJournal's 2015 country report for The Bahamas.[27] The 2015 country report highlighted two cases in which the government and/or the Bahamian judiciary were unaware of the applicability of a piece of legislation. Due to excessive fragmentation, the 2015 article highlighted the need for a comprehensive and well-funded environmental protection agency, properly established by statute and equipped with officials who are well-versed with environmental legislation.

The DEPP Bill seeks to establish a government Department of Environmental Planning and Protection (the Department). The Department will be responsible for the integrated protection and sustainable management of the Bahamian environment and natural resources. The Department's primary responsibilities will include developing, implementing and promoting environmental protection standards, regulations for discharging wastes, a system of project review and approval, an environmental emergency programme, environmental information, and research, education and training. The Bill's overall objective is to consolidate environmental protection law and to centralise its responsibility.

The DEPP Bill was introduced following a rise in environmental litigation in The Bahamas and several oil spills on The Bahamas' capital island.[28] The DEPP Bill provides

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[27] Benjamin (n 5).

[28] Ricardo Wells, 'Legal Action Considered Over Oil Spills At Clifton' *The Tribune*, (New Providence, 6 July 2015) <http://www.tribune242.com/news/2015/jul/06/legal-action-considered-over-oil-spills-clifton/> accessed 19 December 2015; Neil Hartnell, 'Cable Seeking $15m Over Rubis Gas Leak' *The Tribune*, (New Providence, 9 July 2014) <http://www.tribune242.com/news/2014/jul/09/cable-seeking-15m-over-rubis-gas-leak/> accessed 19 December 2015.

statutory authority for Environmental Impact Assessments (EIAs) for all activities reasonably expected to have significant environmental impact, whether on Crown or private lands. In doing so, the Bill creates a wide-reaching authority extending to all lands and all likely environmental threats. Further, projects requiring an EIA cannot commence without the issuance of an environmental clearance and environmental permit, effectively establishing necessary safeguards. In addition, the Department's Director has the authority to amend, suspend or cancel an environmental clearance or permit if new circumstances arise that may adversely affect the environment.

Under the DEPP Bill, the Minister is empowered to create offences punishable by fines, imprisonment or both. These offences may be of a continuing nature and may attract fines for each day the offence continues following conviction, which encourages swift rectification. Also of merit are the provisions relating to the recovery of costs incurred for remedying a consequence of any default.

The DEPP Bill provides for the encouragement and facilitation of environmental protection by the public. The Department is charged with developing programmes and dispersing information to the public to encourage a culture of public conservation and environmental appreciation.

Planning and Subdivision Bill 2015

The Planning and Subdivision Bill 2015 (PSB) responds to recurring issues under the *Planning and Subdivision Act 2010* (PSA) regarding extensive provisions and inadequate staffing.[29] The PSB, which is to repeal the PSA, proposes to further consolidate town and planning subdivision developments while increasing public participation in the approval process. One of the issues with the PSA was that inadequate resources were made available to the Department to implement the legislative provisions. Phillip Davis, the Deputy Prime Minister, stated that the government planned to meet the staffing inadequacies by moving to a larger space and hiring additional staff to meet the demand.[30]

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[29] Alison Lowe, 'DPM: Planning and Subdivision Act changes to 'increase transparency' *The Nassau Guardian* (New Providence, 19 June 2014): <http://www.thenassauguardian.com/bahamas-business/40-bahamas-business/48210-dpm-planning-and-subdivision-act-changes-to-increase-transparency> accessed 2 January 2016; Natario McKenzie, 'Government urged to Remove Planning Bottlenecks' *The Tribune* (New Providence, 20 June 2014): <http://www.tribune242.com/news/2014/jun/20/govt-urged-to-remove-planning-bottlenecks/ > accessed 2 January 2016.

[30] Ibid.

Under the PSA, public access to information and public hearings are mandated for development applications. The public hearings facilitate public revision and questioning of the material and public input and representations. The Minister is also mandated to have regard to public submissions or representations when deliberating on a Land Use Plan. Following the finalisation of a Land Use Plan, the public is again engaged through making a copy of the finalised plan public. Any person may make written representations to the Minister within two months of publication and prior to the Minister's approval, and the Minister must have regard for these representations.

Under the PSB, public hearings are mandated for scheduled projects and other projects recommended by the Minister, albeit the number of public hearings is not legislated. However, in considering any Environmental Impact Statement (EIS), the deciding authority is only required to have regard for the EIS conclusions and comments from referral agencies. In short, the proposed changes in the Bill restrict public participation and rid the legislation of specific provisions for public engagement.

Weaknesses or Conflicts of the Bills

A more detailed examination of the Bills raises a number of questions in relation to weaknesses and overlap. These issues include the extent of Ministerial discretionary power and potential overlap between the Bills.

Ministerial discretionary power is prevalent in both Bills. For example, the Minister 'may make regulations and issue guidelines setting standards and establishing procedures for the preparation and review of environmental impact assessments'. Greater levels of certainty, accountability and transparency would be promoted if the requirements of an EIA were established in the Bill itself, and Ministerial responsibility was mandated and not merely discretionary. It is important to note that the appropriate Ministers under both Bills have the authority to prescribe these standards, which may lead to confusion and institutional overlap.

Another Ministerial discretionary power under the PSB involves determining the type and extent of consideration, inclusive of the criteria, procedures and timing of an EIS review. This power can effectively lessen the importance of the EIS in the decision making process, and cause potential conflict with the DEPP Bill. Additionally, the PSB seems to curb opportunities for public participation as there is no provision requiring public comment to be considered or given weight in the decision making process.

Both the DEPP Bill and the PSB have similar provisions relating to land use, public access to information and EIAs. The Department of Environmental Planning (under the DEPP Bill) is, however, required to work in tandem with the Department of Physical Planning (under the PSA) in relation to Land Use Plans. There is potential for confusion because both Departments are charged with developing some aspect in relation to the same subject

matter. At the same time, there are provisions in both Acts which require discretion to be exercised subject to conditions and restrictions in other legislation. By stripping the public consultation provisions in the PSB and inserting them into the DEPP Bill, both pieces of legislation must be passed in tandem to ensure that the public retains its right to be consulted. The simultaneous passing of both pieces of legislation is, however, unlikely due to low political momentum. It is also unlikely that the DEPP Bill will be passed. This would effectively strip the public of rights provided from existing legislation (the PSA) without them being introduced through the DEPP Bill. To eliminate this risk, both Bills should be developed, amended and passed together.

Conclusion

This report set out to analyse the efforts of the Bahamian government to enact, update and improve environmental legislation built on the three pillars of environmental democracy: access to information, access to justice and public participation in national decision making.

The FoIB 2015, despite certain deficiencies, represents an effort by the government to recognise a citizen right of access to information (governmental transparency, public participation and accountability). The Bill, however, faces some challenges due to the lack of statutory provisions on the disclosure of EIAs.

The enactment of the BPAF Act and the *Fisheries Resources (Jurisdiction and Conservation) (Amendment) Regulations 2015* represents one of the more comprehensive legislative developments in environmental protection laws within the country. These laws represent the efforts of The Bahamas to align with the major regional goals of the CCI. The establishment of the fund by the Act seeks to ensure sustainable financing for the management of protected areas in the Bahamas and the amendment of the Fisheries Regulations seeks to ensure the protection of the Nassau Grouper species in perpetuity.

The establishment of the Department of Environmental Planning and Protection and the PSA demonstrate an attempt to align the country with its regional and international responsibilities for sustainability and protection of the environment. The PSA, in particular, demonstrates this with regard to the rights of public participation in national decision making. The introduction of the PSB, however, seems to erode legislative development regarding public participation by stripping away some public participation rights. The Acts' objectives may also prove difficult to implement due to overlapping statutory provisions.

COUNTRY REPORT: THE PEOPLE'S REPUBLIC OF CHINA

The Revised Atmospheric Pollution Prevention and Control Law

Jingjing Zhao*

Introduction

The People's Republic of China has witnessed a slight improvement in air quality since its State Council issued the *Action Plan on the Prevention and Control of Atmospheric Pollution* (the Action Plan) in 2013.[1] According to the *2014 Report of the Ministry of Environmental Protection on the Air Quality Status of the Key Areas and 74 Cities* (2014 Report), there has been a small but not satisfactory decrease in both the density of major pollutants and the number of days with heavy pollution weather.[2] This trend is also confirmed by the *2015 CAAC Clean Air Management Report*, which is the first assessment on the nation-wide air pollution governance situation prepared by the Clean Air Alliance of China (CAAC).[3]

China still faces severe atmospheric pollution and a series of challenges that are brought with it. Heavy pollution weather still occurs frequently and has not seen any fundamental improvement.[4] The *2014 China Environmental Status Bulletin*[5] prepared by the Ministry of Environmental Protection found that 145 out of 161 cities failed to meet the standards as provided by the 2012 *Ambient Air Quality Standards*.[6] Similarly, the 2014 Report found that 66 out of the 74 examined cities failed to meet such standards. In particular, the Bejing-Tianjin-Hebei Area still experienced heavy air pollution. The annual

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[1] Available at: http://www.gov.cn/zwgk/2013-09/12/content_2486773.htm.

[2] Issued on 2 February 2015, Available at: http://www.zhb.gov.cn/gkml/hbb/qt/201502/t20150202_295333.htm.

[3] Issued on 31 July 2015, Available at: http://www.cleanairchina.org/product/7225.html.

[4] Above (n. 2).

[5] Issued on 8 June 2015, available at: http://jcs.mep.gov.cn/hjzl/zkgb/2014zkgb/201506/t20150608_303142.htm.

[6] Ambient Air Quality Standards (GB 3095-2012), available at: http://kjs.mep.gov.cn/hjbhbz/bzwb/dqhjbh/dqhjzlbz/201203/W020120410330232398521.pdf. It replaces Ambient Air Quality Standards (GB 3095-1996).

density of PM2.5 in this area was, on average, 1.6 times above the standard. 8 out of the 10 cities with relatively poor air quality are located in the Bejing-Tianjin-Hebei Area.[7]

Relevant Law and Policy Concerning the Revision of the Atmospheric Pollution Prevention and Control Law

At the policy level, the nation is committed to tackling air pollution, one of the most severe environmental problems in China. On 25 April 2015, the Chinese Communist Party Central Committee and the State Council jointly published their *Opinions on Accelerating the Construction of Ecological Civilisation* (Opinions).[8] One of the main aims of the Opinions is the overall improvement of ecological environmental quality, including the improvement of atmospheric environmental quality. [9] The Opinions also mandate the comprehensive promotion of pollution prevention and control, in order to solve severe environmental problems such as the pollution of air, water and soil, which are of most concern to the public; to continue implementing the Action Plan; to gradually eliminate heavy pollution weather; and to effectively improve the quality of the atmospheric environment.[10] The Opinions also require the improvement of environmental law and regulations, including revising the Atmospheric Pollution Prevention and Control Law.[11] Moreover, the prevention and control of air pollution is also one of the key targets written in *The Chinese Communist Party Central Committee's Recommendations on Formulating the 13th Five-Year Plan on the Development of National Economy and Social Development*, issued on 29 October 2015.[12]

At the level of law, the revised 2014 *Environmental Protection Law* (2014 EPL) briefly addresses the issue of air quality protection.[13] The 2014 EPL is framework legislation which arguably overarches the implementation and enforcement of other environmental law. It requires the promulgation of specific legislation to refine its rules and principles in order to tackle different environmental problems, such as the revised *Atmospheric Pollution Prevention and Control Law* (new APPCL) in the field of air pollution. The new APPCL is the first specific environmental legislation issued after the entering into force of the 2014 EPL. It

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[7] Above (n 2).

[8] Available at:
http://news.xinhuanet.com/politics/2015-05/05/c_1115187518.htm.

[9] Art. 3, the Opinions.

[10] Art. 15, the Opinions.

[11] Art. 17, the Opinions.

[12] Available at:
http://news.xinhuanet.com/politics/2015-11/03/c_1117027676.htm.

[13] Art. 32 of the Environmental Protection Law, Available at:
http://www.npc.gov.cn/npc/xinwen/2014-04/25/content_1861279.htm.

effectively connects with and refines the 2014 EPL. It also transforms the policy as stated in the 2013 Action Plan into law.

The Atmospheric Pollution Prevention and Control Law (2015 revised version)

The existing APPCL was originally issued by the 22nd Meeting of the 6th Standing Committee of the National People's Congress on 5 September 1987, and was revised twice, respectively in the years of 1995 and 2000. It was considered as not being adequate to address the contemporary circumstances of air pollution and needed to be revised. On 29 August 2015, the new APPCL was passed by the 16th Meeting of the 12th Standing Committee of the National People's Congress, to enter into force on 1 January 2016. The new APPCL contains 8 Chapters and 129 Articles, seeing an impressive extension of the existing law. The new APPCL has exercised a revision of all major provisions of the existing law. It includes specific mechanisms and significantly increased the operability of the law.

Chapter 1 lists the main purposes and general principles of the new APPCL. The new APPCL is formulated in order to protect and improve the environment, prevent and control air pollution, safeguard public health, promote the ecological infrastructure development, and facilitate sustainable economic and society growth.[14] In order to fundamentally prevent and control air pollution, the new APPCL insists on treating pollution at source, prioritizing planning processes, transforming the pattern of economic development, optimizing industrial structure and distribution, and adjusting energy structures.[15]

The most important change that is made by the new APPCL is arguably adding provisions on the management and assessment of atmospheric environmental quality. The new APPCL strengthens the responsibility and supervision of local governments. It requires the competent department of environmental protection administration under the State Council (in conjunction with other relevant departments of the State Council) to assess the extent to which the local governments reach their targets to improve ambient air quality and fulfil key tasks to control air pollution. Local governments should also establish and implement assessment methods to test performances within their respective jurisdictions. The assessment results shall be announced to the public.[16]

Chapter 2 refers to the setting up of air pollution prevention and control standards and the attainment plans to achieve such standards within allotted time. It requires the competent department of environmental protection administration under the State Council or

[14] Art. 1, the new APPCL.

[15] Art. 2, the new APPCL.

[16] Art. 4, the new APPCL.

local governments of provinces, autonomous regions and municipalities (local governments) to develop ambient air quality standards and air pollutant emission standards.[17] Such standards should be made available to the public by the competent environmental protection administration of local government at or above the province level.[18] The implementation of such standards should be regularly assessed, the results of which should be used to revise the standards in a timely manner.[19]

Chapter 3 regulates the supervision and administration of air pollution prevention and control. It requires the state to conduct total emission control of key air pollutants, and to progressively implement trading policies for key air pollutant emission rights.[20] In the meantime, Chapter 3 states that for regions within the jurisdiction of respective local governments that exceed national total emission targets of key air pollutants, or could not achieve improvement objectives of ambient air quality as required by the state, those local governments (environmental protection department together with other relevant departments) shall interview the principal of the aforesaid regional government and suspend examination and approval of any environmental impact assessment document for any new construction project that would increase total regional emissions.[21] This requirement refines the target of tackling air pollution and burdens the main leaders of local governments with the responsibility of air pollution prevention and control, with an aim of having the governments to bear the responsibility and actively prevent and tackling air pollution.

Chapter 4 is the largest chapter of the new APPCL, comprising a considerable 54 articles. It sets out air pollution prevention and control measures, specifically targeting the major sources of air pollution including: pollution from coal and other energy sources; industrial pollution; pollution from motor vehicles, vessels and other non-road mobile sources; fugitive dust pollution; and pollution from agriculture and other sources. For example, in relation to pollution from energy sources, the new APPCL requires oil refinery enterprise to produce fuel oil in accordance to fuel quality standards. It is prohibited to import, sell and burn petroleum coke that fails to comply with quality standards.[22] Such fuel quality standards should be developed in accordance with requirements of national air pollutants control, and should be interrelated and simultaneously implemented with national

[17] Art. 8-9, the new APPCL.

[18] Art. 11, the new APPCL.

[19] Art. 12, the new APPCL.

[20] Art. 21, the new APPCL.

[21] Art. 22, the new APPCL.

[22] Art. 37, the new APPCL.

emission standards for motor vehicles, vessels and non-road mobile machinery.[23] This requirement is very important for pollution from motor vehicles and vessels, which is a major source of air pollution. It directly regulates fuel production by oil refinery enterprises, and provides legislative authority for environmental protection and quality control departments to regulate the refinement of oil products. This acts as one of the examples of how the new APPCL treats pollution at their source so as to fundamentally prevent and control air pollution.

Chapter 5 defines the mechanism of joint air pollution prevention and control in key regions. It requires the state to establish a joint prevention and control mechanism against air pollution in key regions, and to coordinate regional prevention and control work. The key regions shall be designated by the competent department of environmental protection administration under the State Council, with the approval of the State Council. The relevant local governments in the key regions shall determine one local government to lead the efforts of having joint meetings regularly, meeting the requirements of having unified plans, standards, monitoring, and prevention and control measures, so as to implement the obligations under this law.[24] This mechanism helps to avoid the situation of different cities fighting their own battle against air pollution, so as to increase the effectiveness of air pollution prevention and control.

Chapter 6 specifically refers to counter measures of heavy pollution episodes as a response to a series of severe air pollution weathers that have occurred in China. According to this chapter, the state shall establish a monitoring and early warning system for heavy pollution episodes.[25] Local governments overseeing provinces, autonomous regions, municipalities, cities that have districts, and counties where heavy pollution episodes could take place shall prepare heavy pollution emergency plans.[26] According to the early warning grade of heavy pollution episodes, relevant local governments should execute emergency plans in a timely fashion, and may, according to emergency needs, take measures such as: ordering relevant enterprises to stop or limit production; restricting vehicle transportation; forbidding the use of fireworks and firecrackers; stopping groundwork and construction and demolition of buildings; stopping open-air barbecues; stopping outdoor activities in kindergartens and schools; and implementing artificial weather modification.[27]

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[23] Art. 13, the new APPCL.

[24] Art. 86, the new APPCL.

[25] Art. 93, the new APPCL.

[26] Art. 94, the new APPCL.

[27] Art. 96, the new APPCL.

Chapter 7 regulates legal liabilities, comprising 30 articles, and offers nearly ninety kinds of specific punishment measures and types. The new APPCL significantly increases its power to issue strong sanctions. For example, if any entity or individual commits any of the following acts in violation of the Law, they shall make corrections, limit or stop production processes, and be fined of more than RMB 100,000 but less than RMB 1,000,000: (1) Discharging pollutants without proper pollutant discharge permits; (2) Discharging pollutants that exceed air pollution emission standards or targets for total emission of key air pollutants; and (3) Discharging pollutants by unofficial means to evade supervision.[28] If the entity or individual has already been fined and ordered to make corrections, but refuses to do so, the administrative department making the sanctions decisions may punish the entity or individual consecutively and *on a daily basis*, starting from the day after when corrections were ordered.[29] The rather heavy liabilities will no doubt significantly frighten polluting enterprises. This chapter in a sense increased the operability and integrity of the new APPCL.

Conclusion

Air pollution in China has shown complex characteristics which include a mixed type of pollution and pollutants. The new APPCL was designed to respond to the current status of air pollution, and to deal with the most imminent problems in the prevention and control of air pollution in China. It provides a large number of specific and highly individualised requirements and corresponding punishment measures. It has shown significant improvement of the existing APPCL, and provides a solid legislative foundation for the prevention and control of air pollution.

The new APPCL is, on the other hand, not without any limitations. Although having more detailed requirements than the existing APPCL, the new law still has a number of stipulations which are questionable in their operability. Moreover, the connectivity between the new APPCL and the 2014 EPL is imperfect, especially in the areas of liability of environmental torts, public interest environmental litigation and the public's right to know, and safeguards of public participation. Furthermore, the new APPCL adopts a number of 'soft provisions' which decreases the applicability of the law, such as 'the state encourages and supports', [30] 'the state adopts', [31] and 'people's government should strengthen'. [32] Consequently, although showing significant improvement at the level of legislation, the

[28] Art. 99, the new APPCL.

[29] Art. 123, the new APPCL.

[30] Arts. 6, 60, the new APPCL.

[31] Art. 34, 50, the new APPCL.

[32] Arts. 50, 68, 70, the new APPCL.

effectiveness of the new APPCL remains to be seen, and will largely depend on its implementation in practice.

COUNTRY REPORT: THE PEOPLE'S REPUBLIC OF CHINA

China's National Plan for Marine Spatial Planning

Nengye Liu*

Introduction

China has a long coastline of 18 000 kilometers, which borders on vast sea areas. The country's marine ecosystems face significant pressure from human activities related to China's rapid economic growth, industrialization and urbanization. Although there are several laws in place to protect the ocean, such as the Marine Environmental Protection Law, [1] Islands Protection La [2] and Environmental Protection Law, [3] China's marine environment continues to deteriorate.

Ocean management in China has been sector-based for a long time, with many different authorities involved in regulating different human activities. For example, the Maritime Safety Authority is in charge of vessel-source pollution while the State Oceanic Administration ('SOA') regulates the dumping of waste. In order to achieve sustainable ocean management, the State Council (the chief administrative authority of the People's Republic of China) published China's first National Plan for Marine Spatial Planning ('MSP Plan') in August 2015.[4] The MSP Plan was drafted by both the SOA and the National Development and Reform Commission ('NDRC'). The publication of the MSP Plan represents a shift in ocean governance in China from a sectoral approach to a holistic one. Though not enshrined in law, the MSP Plan has been officially published by the State

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[1] 中华人民共和国主席令第 26 号 [Decree of the President of the P. R. China (No. 26)], 中华人民共和国海洋环境保护法 [Marine Environment Protection Law (revised) of P. R. China], 25 December 1999.

[2] 中华人民共和国主席令第 22 号 [Decree of the President of the P. R. China (No. 22)], 中华人民共和国海岛保护法 [Islands Protection Law of P. R. China], 26 December 2009.

[3] 中华人民共和国主席令第 9 号 [Decree of the President of P. R. China (No. 9)], 中华人民共和国环境保护法 [Environmental Protection Law of P. R. China], 24 April 2014.

[4] 国发〔2015〕42 号 [State Council of P.R.China, No.42 2015], 国务院关于印发全国海洋主体功能区规划的通知 [Circular on the Publication of National Plan for Marine Spatial Planning], 20 August 2015.

Council. It must, therefore, be fully implemented by all government bodies dealing with ocean affairs.

This country report provides an overview of the MSP Plan. It discusses the background, guiding principles, planning and implementation measures of this important document.

Background

China is the world's third largest ship owner by deadweight tonnage.[5] It is also the world's largest ship builder.[6] 90% of China's foreign trade is carried by maritime transport. In 2012, the 18th National Congress of the Community Party of China declared China's intentions to become a maritime power. China, however, faces serious challenges to achieve sustainable ocean development.

Overdevelopment has become a big problem in coastal areas. For example, from 2002 to 2014, 1339 square kilometers of land was reclaimed from the sea.[7] Land reclamation has caused significant loss of wetlands along China's coastal line. Moreover, China's sea areas contain abundant marine biodiversity, with 22629 recorded species and various types of marine ecosystems, such as mangroves, coral reefs, coastal wetlands, sea grass beds, islands, bays and estuaries.[8] Biodiversity loss is, however, getting worse due to red tide outbreaks, overfishing, climate change and marine pollution. In coastal waters, especially those bordering with economic centers such as Shanghai and Shenzhen, land-based marine pollution is a serious issue that needs to be addressed.

Guiding Principles

The SOA and the NDRC list six guiding principles for marine spatial planning in China:[9]

1. Make suitable development plans for different marine areas
2. Identify the major functions and purposes of a marine area before making a development plan

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[5] United Nations Conference on Trade and Development, Review of Maritime Transport 2014, 39

[6] United Nations Conference on Trade and Development, Review of Maritime Transport 2014, 46.

[7] See above (n. 4).

[8] Section 9, Current Situation of Marine Invasive Species, 2006 中国海洋环境质量公报 [2006 National Report on the Quality of Marine Environment] SOA, China.

[9] 发改委、海洋局就全国海洋主体功能区规划答记者问 [Press Release about the MSP National Plan by the NDRC and the SOA], 7 September 2015 <http://www.sdpc.gov.cn/xwzx/xwfb/ 201509/ t20150907_750236.html.

3. Prioritise development activities in the Exclusive Economic Zone ('EEZ') and high seas while controlling human activities in coastal waters
4. Enhance the sustainable fisheries management
5. Require an environmental impact assessment before any land reclamation or port construction takes place
6. Enhance protection of the marine environment

Planning

The MSP plan identifies three major functions for China's sea areas: industry and urban construction; aquaculture and fisheries; ecosystem services. Based on these functions, the Plan outlines four zones:

1. Improvement Zones: these are areas near the coast where the most human activities occur. Marine pollution is always a serious problem in these areas. To improve the marine environment in these areas, the Plan supports the replacement of high-pollutant projects, such as steel plants, with less threatening activities, for example marine tourism.
2. Key Development Zones: these are areas that can be used for urbanization, port construction, and oil and gas exploration and exploitation.
3. Restricted Zones: these zones generally refer to areas that provide seafood, especially fishery zones.
4. Prohibited Zones: these zones include marine protected areas and islands. Prohibited zones are used to protect biodiversity and unique ecosystems. Very few activities are allowed in these areas.

For the most part the MSP Plan focuses on China's internal waters and territorial sea. To date, most human activities occur in the 380 000 square kilometers that make up China's internal waters and territorial seas. It establishes 9 Improvement Zones. These include Bohai Bay, the estuaries of the Long (Yangtze) River and Pearl River, the Gulf of Tokin, west Taiwan Strait and the sea areas bordering Liaodong Peninsular, Shandong Peninsular, north Jiangsu Province and the Hainan Islands. All these areas are near China's most economically advanced regions where shipping, fisheries, offshore oil and gas operations, port construction and land-based pollution place huge pressure on marine ecosystems. The MSP Plan has divided Key Development Zones into three categories: urban development zones; ports and industrial parks near ports; and construction/marine resource development zones. Restricted Zones include fishery zones, islands and their nearby waters, and marine protected areas. Marine protected areas may also be designated as Prohibited Zones.

Protected areas include marine special protected areas and marine nature reserves. So far, China has established 23 marine special protected areas at the national level (totally 2 859 square kilometers) and 34 marine nature reserves (totally 19 400 square kilometers). The aim of these areas is to protect endangered species and unique or vulnerable ecosystems.

In the Exclusive Economic Zone ('EEZ') and continental shelf areas claimed under China's jurisdiction, the MSP Plan only designates Key Development Zones and Restricted Zones. Permissible Key Development Zone activities include scientific research, offshore oil and gas exploration and exploitation, and marine tourism. EEZ and continental shelf areas not classified as Key Development Zones are designated as Restricted Zones. In Restricted Zones, sustainable fisheries are the main concern. In the Yellow Sea and East China Sea, fisheries restoration is required. In the South China Sea, it seems that fishing is encouraged in disputed sea areas, although the MSP Plan does mention that habitat conservation is essential.

Implementation Measures

The MSP Plan includes provisions to advance its effective implementation. For example, the Plan provides for Government to increase public service funding in far-away islands. There are also tax deductions for companies conducting offshore oil and gas exploration in EEZ and continental shelf areas. Moreover, there is to be significant investment in capacity building activities, such as ocean monitoring, coral reef restoration, disaster response and marine scientific research.

The MSP Plan marks a shift in policy support for high-pollutant projects to more environmental friendly projects, such as marine tourism and renewable energy. The Plan requires that no construction or industry project be approved without an environmental impact assessment. Furthermore, fisheries will be limited in coastal waters while a number of marine protected areas will be established for the protection of marine species. In order to deal with land-based pollution, the MSP Plan refers to the Action Plan for the Prevention of Water Pollution.[10] It also provides for an integrated mechanism to protect marine environment from both terrestrial and marine pollution.

Conclusions

The adoption of the MSP Plan is a positive move for sustainable ocean management in China. In particular, it marks a shift in China's ocean governance from a sectoral to holistic approach. Moreover, the MSP Plan covers sea areas and related coastal areas. The

[10] 水污染防治行动计划 [Action Plan for the Prevention of Water Pollution], 国发〔2015〕17 号 [No. 17, 2015, State Council], 16 April 2015.

intention is to establish an integrated mechanism for the protection of China's marine environment.

However, the MSP Plan also supports the development of China's oceans. It pays most attention to the management of human activities in internal waters and territorial seas. In the EEZ, only Key Development Zones and Restricted Zones are established. The MSP Plan mentions several times that development, such as fishing and offshore mineral exploration, should be encouraged. Thus, the question remains as to whether the Plan is sufficient to achieve sustainability in China's EEZ and continental shelf areas. Moreover, the capacity of the SOA, NDRC and other government administrations to work together to effectively implement the Plan remains a concern.

COUNTRY REPORT: CZECH REPUBLIC

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Introduction

In 2015, only a few new laws or amendments in the environmental field were adopted in the Czech Republic. Parliament is still approving the drafts of new legislation after the Parliamentary elections in autumn 2013.

In this article, therefore, we introduce a few minor amendments of several laws, namely the Act on the Protection of Agricultural Land, the Waste Act, the Energy Act and the Act on Public Health Protection. The remainder of the article we devote to the absolutely crucial amendments to the regulation of public participation and access to courts, which entered into force in 2015.

Recent Statutory Developments

In the Czech Republic, approximately 15 hectares of agricultural land are put to non-agricultural use (e.g. buildings) every day 2015 was declared by the UN as the 'International Year of Soils'. The amendment to the Act on the Protection of Agricultural Land (Act No. 41/2015 Coll.) sets out the new conditions for the use of agricultural land for growing plantation trees; for the use of sediments on agricultural land; and for granting consent to the use of this land for the construction of transport and technical infrastructure. It also reduced the fees for usage of agricultural land for non-agricultural purposes, and therefore reduced the protection of the land because the fees are considered insufficient as an economic incentive to preserve agricultural land.

The technical amendments to the Waste Act (Act No. 223/2015 Coll.) harmonise the European and Czech legislation on waste. The amendment, for example, extends and amends the definition of the waste management hierarchy, alters the concept of selective collection of waste and waste prevention; and expands the definition of waste management to include commercial waste trading. The amendment abolishes the exemption from the Waste Act for sediments extracted from water reservoirs and riverbeds and waste from precious metals. The obligation to accept returned goods will no longer apply to mineral oils. Among other changes, the reporting of hazardous waste was changed so that it is easier

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and does not involve unnecessary administrative burdens. The amendment also introduces an entirely new system of collective return of goods for car tyres in order to increase the number of collection points throughout the country. The Ministry of the Environment prepared the implementing decree for these changes. In addition, previously commercial collection of metallic waste was subject to petty theft of metal objects which were collected for money as a waste. This problem was solved by a ban on cash payments such that the only permissable forms of payment have become cashless transfers from one account to another or postal orders.

The amendment to the Energy Act (Act No. 131/2015 Coll.) brings about comprehensive changes to the business environment for the operators of renewable energy systems. The amendments allow, for example, for households to install, without a license, photovoltaic roof panels with an output up to 10 kilowatts. On the other hand, such households will have to pay a tax on electricity produced for their own use.

Thanks to the efforts of a coalition of local NGOs, the noise limits set out in the Act on Public Health Protection (Act No. 267/2015 Coll.) were maintained. The process was changed however for granting noise exceptions that allow operators (e.g. operators of transport infrastructure) not to comply with noise limits, a process which has been heavily criticised.

One of the biggest losses of environmental protection this year was the abolition of territorial limits of brown coal mining in northern Bohemia. The territorial limits of brown coal mining are regulated in the binding Government Resolution No. 444 of 30 October 1991 which defines the boundaries of brown coal available for mining with the rest of such coal bein unavailable. These limits were confirmed by the government in 2008. The main reason for establishing limits was the protection of the environment and landscape in northern Bohemia. The limits served as a government guarantee to North Bohemian municipalities that ecosystems in their region will not be degraded, nor the existence or protection of natural habitats threatened. From the beginning of the 21st century, there have been many attempts to revise the government resolution of 1992. In October 2015, these attempts were successful and the limits were changed to allow the mining of more brown coal. The government unanimously decided to shift the mining limits in the state-owned organization CEZ.

The protected landscape area of Brdy was established on 1 January 2016 by the Governmental Decree No. 292/2015 Coll. on the territory of the former military area Brdy and several existing nature parks. The object of protection is the natural wealth of the various valuable forests, meadows, wetlands, heaths and dozens of streams. The protected landscape area has an area of 330 square kilometres. The establishment of a protected

area on the site of the former military reservation demonstrates the favourable impacts of strict protection of military areas and prohibition of entry and all tourist activities.

EIA Act

The amendments to the Act on Environmental Impact Assessment (Act No. 39/2015 Coll.) came into the force on the 1 April 2015. These amendments regulate not only the process of environmental impact assessment, but also many other aspects of the proceedings under the Building Act and other decisions concerning environmental protection.

The original Act on EIA has been broadly discussed in the country report for 2014.[1] Therefore we focused only on the changes in the new legislation. The first part of this discussion will focus on the EIA process; the second part on the subsequent, related procedures (such as land-use and building permits).

The amendments are based on the requirements of the European Commission, and there are very strict transitional provisions whose purpose is to apply the amendments immediately after the coming into force date. The amendment has no general transitional provisions. After 1 April, all EIA proceedings have to follow the amended EIA Act.

There are four major changes in the EIA process. The first change is the revocation of § 23 para. 14 Act on EIA, which precludes the use of the Administrative Code. Due to the lack of transitional provisions, all EIA processes and assessments become, from April onwards, 'administrative proceedings' pursuant to the Administrative Code with all the rights and obligations arising therefrom thus imposed onto the process.

The second change is an entirely new legal form of decisions from screening procedures. In cases of a positive finding arising from a screening procedure (ie. A finding that the project ought to be subject to the EIA process), the decision must take the form of a reasoned written statement (not an administrative decision). It must then be published on the internet and the official notice board. The amendment of the EIA Act requires the publication of information about the project (name of project, capacity, location, characteristics including the possibility of cumulative effects with other projects, and a brief description of the technical and technological solutions) and of the considerations made by the public authority when evaluating the project (description and location plan, impacts on people and the environment). A decision that a full EIA process is required cannot be appealed.

Negative findings from a screening procedure have now been granted the legal status of an administrative decision, against which it is possible to apply for both ordinary and extraordinary remedies (appeals, review procedures, etc.) and for legal action before

[1] Damohorsky, M., Humlickova, P.: Country report – Recent statutory developments, IUCN Academy of Environmental Law E Journal Issue 5: 2014.

the administrative courts. Finally, a negative finding from a screening procedure should now contain the basic characteristics of the project, in order to assess any changes in the project during its realisation as well as short comments as to the criteria set out in Annex no. 2 of the EIA Act (description and location of the project, impacts on the public health and the environment). The right to appeal is expressly granted to the notifier and those representing the public interest (NGOs). Such bodies are entitled to challenge both the substantive and procedural legality of the decision. The *locus standi* of NGOs is not based on the specific right of the NGOs to a favourable environment or to life and health, but on the assumption of possible effects on NGOs. The deadline for issuing a court decision against a negative finding from a screening procedure is 90 days. The amendment does not expressly cover the issue of suspensory effect of this action. Such suspensory effect is therefore regulated by art. 73 para. 2 of the Administrative Procedure Code and can be included in the action, where execution of the decision means, for the plaintiffs, greater harm than the granting of suspensory effect may cause to others, as long as it does not interfere with the public interest.

There are two more changes in the screening procedure. The first one is an extension of the deadline for completion of the screening procedure from 30 to 45 days (see § 7 para. 4 EIA Act). The second partial change is a change in the concept of the likelihood of significant effects on the environment. Instead of the original 'should' the EIA Act now states 'may have' (see § 7 para. 2 and 3 EIA Act).

The third major change is the new legal form of the EIA statement, which is now a binding opinion (pursuant to § 149 of the Administrative Code). Compared to the previous situation, the statement is binding also in its content without the possibility of discretion by public authority. The EIA statement has to fulfil the requirements for an administrative decision (such as reasoning, etc.). Review of the EIA statement will be provided in two ways. Firstly, it is provided for by the review of decisions by a superior administrative authority in review proceedings (see art. 149 para. 5 of the Administrative Code). The 'public concerned' is not entitled to start or demand a review procedure (unlike appeal procedure). Secondly, the 'public concerned' has the right to appeal against the decision in subsequent proceedings (such as the grant of a land-use permit) and within this appeal argue both procedural and substantial illegality.

The fourth change is the change in the definition (limits) of assessed projects. The amendments significantly (usually by several times) increase the limits for construction of commercial complexes, industrial parks or residential buildings connected by a park (see section 10.6 and 10.13 Attachment no. 1 of EIA Act). These projects are very common (about 23% of all assessed projects) and very controversial, mainly in urban areas. The size of assessed projects in the past was often modified so as to avoid the limits for obligatory

assessment. Raising the thresholds will very probably lead to the situation when the vast majority of these projects fall under the relevant limits.

The Czech system of permitting projects relevant to the EIA Directive is composed of several successive phases (the so-called multi-layer permitting process), which the European Court of Justice has assessed as being harmonious with the requirements of the EIA Directive. The multi-layer permitting process led to problems in practice however, because the Czech Republic granted 'public concerned' rights only in the EIA procedure itself, and not in subsequent procedures, while the EIA Directive covers the rights of the 'public concerned' at both stages.

Because of the need to comply with the requirements of the EIA Directive, the EIA amendment introduces the definition of a follow-up, subsequent procedure. According to the definition, the follow-up decisions are those issued under special laws (eg. the Building Act, Water Act, IPPC, Mining Act and others) and those which allow development or implementation of the project assessed under the EIA Act.

The amendment of EIA Act redefines the 'public' and the 'public concerned'. The definition of the public is merely a formal step when it means one or more persons (legal and natural). The public has a right to participate in the EIA process and now also in subsequent procedures. In such subsequent procedures, the public have only a consultative role (i.e. the right to information, to make a comments, but not the right to administrative or judicial review of the decision). The 'public concerned' is entitled to participate in the subsequent procedures (typically land-use and building permit). The public concerned is defined as:

> *- those whose rights are affected by the decision (i.e. mostly the owners of land or buildings in the neighbourhood of project); and*
> *- environmental NGOs (including "established" NGOs (i.e. those which have existed for more than three years and "ad hoc" environmental NGOs, whose legitimacy to challenge the decisions is declared by a supporting signature list (200 unverified signatures). For each assessed project, the NGO need only have one signature list, which is applicable to all partial subsequent procedures for a given project (e.g. land-use and building permit).*

The rights of environmental NGOs as the 'public concerned' under the EIA Directive are guaranteed through 'full participation' in subsequent proceedings. These entities become parties to the proceedings, which means they have the same rights as a developer or as neighbouring owners. Such NGOs have the right to appeal against the decision regardless of previous participation in the proceedings. NGOs also have the right to access to courts. The 'public concerned' is able to challenge the substantive and procedural legality of decisions (until now NGOs could only challenge the procedural legality of the decision,

because they do not have a substantive right to a favourable environment). Privileged NGOs are entitled to bring an action to protect the public interest.

Actions against decisions now always have a suspensory effect on that decision. Until a final court decision, the decision in a subsequent procedure cannot be issued or executed. The new amendments therefore fulfil the requirements of EU law in relation to timely and effective judicial protection in national law.

Finally, the identity of projects assessed through the EIA process and the project as realized is verified through a binding verification opinion (the so-called 'coherence stamp'). The public authority responsible for the EIA confirms that there are no changes to the project or plan (especially in its scope, capacity, technology, etc.) which could have a significant negative impact on the environment (see art. 9a par. 4 of the amended Act EIA). The aim of the amendment is therefore to guarantee that the assessed and realized projects are identical or have only minor changes which will not cause any new negative effects on the environment. In cases when the competent EIA authority finds that changes with possible significant negative impact occurred in the project, the authority will adopt a negative binding opinion, which prevents the further realization of the project. The applicant must either modify the project or reassess the project in the EIA process. The identity of the project and the conditions in the affected area are also checked by the extending the validity of the EIA statement. The validity of statements is 5 years from the date of its issuance. The validity may be extended at the request of the developer by 5 years, and even repeatedly. The developer must demonstrate that there were no significant changes in project implementation, the conditions in the affected area or new knowledge related to the content of documentation and development of new technologies applicable in project.

COUNTRY REPORT: FRANCE

Law of 2 December 2015 Related to Risk Prevention: Towards the Renewal of GMOs Regulation in the French System?

Emilie Chevalier[1]

Introduction: Regulating GMOs in the European Context

The adoption of the French Law of 2 December 2015 related to risk prevention[2] has a specific legal background, namely European Union law.[3] Indeed, it was adopted as part of the implementation process of EU Directive 2015/412,[4] which provides for the possibility of Member States restricting or prohibiting the cultivation of genetically modified organisms (GMOs) in their territory. The Directive had been expected for years, since the enforcement of the earlier GMO Directive of 2001[5] has never been fully satisfying, not only from the point of view of Member States, but also of non-governmental organisations (NGOs) and, to a certain extent, of European Union (EU) institutions.

European GMO rules were first designed in the early nineties. From the beginning, the EU opted for a derogatory regime. That is, GMOs are not considered regular agricultural products, but specific products with a specific production process.[6] Consequently, the

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[2] Loi n° 2015-1567 du 2 décembre 2015 portant diverses dispositions d'adaptation au droit de l'Union européenne dans le domaine de la prévention des risques (JORF 3 décembre 2015, p. 22299, available at http://www.legifrance.gouv.fr/).

[3] The scope of the Law is not limited to GMOs issues, it is also related to safety of oil and gaz operations, of certain chemical products, and greenhouse gaz emission quotas.

[4] Directive (EU) 2015/412 of the European Parliament and of the Council of 11 March 2015 amending Directive 2001/18/EC as regards the possibility for the Member States to restrict or prohibit the cultivation of genetically modified organisms (GMOs) in their territory (JO 13.3.2015 L 68/1).

[5] Directive 2001/18/EC of the European Parliament and of the Council of 12 March 2001 on the deliberate release into the environment of genetically modified organisms and repealing Council Directive 90/220/EEC (OJ L 106 , 17/04/2001), p. 1-39.

[6] See Art. 2 of Directive 2001/18 '(2) 'genetically modified organism (GMO) means an organism, with the exception of human beings, in which the genetic material has been altered in a way that does not occur naturally by mating and/or natural recombination'.

dissemination of GMO seeds within the territory of Member States is conditional upon prior authorisation.[7] In compliance with the precautionary principle,[8] authorisation is based on a risk assessment. Once an authorisation is delivered in one Member State, it is valid in all the Member States, in compliance with the basic principles of the single market, particularly the mutual recognition principle, according to which any product lawfully sold in one EU country can be sold in another, even if it does not meet all its technical rules or was not authorized following the same administrative procedural requirements. Such a procedure is a way to conciliate the need to ensure access to the European market (not missing the economic potential of GMO development) with product safety requirements (whose weight has increased under the pressure of public opinion).

The intervention of EU law did not remove all concerns about GMOs, but has rather strengthened them. The option for a specific regime had, paradoxically, the effect of highlighting the specificity of GMOs, especially their potential danger.[9] From then, the Member States have started developing different attitudes towards GMOs. Some are in favour of promoting a GMO culture in their territory (e.g. the United-Kingdom and Spain), whereas others have taken positions expressly against GMOs and even prohibited them in their territory (e.g. Austria and Hungary). France is intermediate. Since the 1990s, the debate on GMOs has been heated in France, with opposition from environmental NGOs and some farmers and multinationals. The position of the French government has been rather unclear. In the absence of consensus, GMOs have become a very sensitive topic in the European context as well. After the 'mad cow' crisis during the nineties and the inadequacy of the Commission to deal with this issue, GMOs have become an object of tension between

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[7] Directive 90/220/EC, repealed by Directive 2001/18/EC of the European Parliament and of the Council of 12 March 2001 on the deliberate release into the environment of genetically modified organisms and repealing Council Directive 90/220/EEC which funds the current EU applicable regime of GMOs. The adoption of Directive 2001/18/EC was followed by the adoption of Regulation 1829/2003/EC of the European Parliament and of the Council of 22 September 2003 on genetically modified food and feed (JO L 268/1, 18.10.2003). These legal tools constitute the major components of the EU GMOs regime.

[8] Art. 4 of Directive 2001/18: the Member States have the obligation to 'ensure that all appropriate measures are taken to avoid adverse effects on human health and the environment which might arise from the deliberate release or the placing on the market of GMOs'.

[9] Damien Rousselière, Samira Rousselière, « Assiste-t-on (réellement) à une polarisation du débat sur les OGM? Une perspective internationale sur la période 2000-2010 », Revue d'économie politique 2013/4 (Vol. 123), p. 593-622, available at http://www.cairn.info/revue-d-economie-politique-2013-4-page-593.htm

the European Union Member States and the European Commission, the decision-making power of the latter being more and more challenged.

Directive 2015/412 aims to provide more opportunities to Member States to regulate GMO dissemination in their territory. Reflecting this Directive, the French Law of 2 December 2015 permits competent French authorities to prevent the dissemination of GMO seeds in the territory, even where the GMO has been validly authorised by another EU Member State. The Law states the requirements that competent authorities must comply with in order to apply to the EU for a derogation from an authorization, but stresses the fact that the application must be assessed with regard to the specific French background.

A New Opportunity to Prohibit GMO Cultivation within the French Territory

Article 20 of the Law of 2 December 2015 amends different provisions of the French Environment Code, and inserts new ones, in order to implement Directive 2015/412.[10] Noticeably, the implementation process has been very quick. Indeed, the French authorities used to be much more reluctant to implement EU Directives related to GMOs, France having been condemned already twice by the European Court of Justice.[11] Article 20 follows Directive 2015/412, implementing the new possibility for Member States to derogate from an EU authorization of a GMO. The Directive does not challenge the whole regime applicable to GMOs, but it does give new opportunities for Member States to point out their specific position towards a GMO.

Under the 2001 Directive, it was quite complicated for the Member States to derogate from an EU authorization. The only possibility was to apply for the enforcement of a safeguard clause. However, the Commission, following the opinions of the European Food Safety Authority,[12] interpreted this possibility very strictly. This enforcement procedure was not fully satisfying for the Member States, as it did not allow them to assert national specificities and national choices towards GMOs. In addition, the adoption of a safeguard clause could only be grounded on the precautionary principle, according to which the national authority shall bring new scientific evidence distinct from that submitted at the time of the application.

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[10] Amendment of the Code of Environment: Arts. L. 533-5-1, L. 533-5-2., L. 533-6; integration of new provisions: Arts. L. 533-7-1 and L. 533-8-2.

[11] Further to infringement proceedings, see Case C-419/03, CJCE, Commission v France; Case C-121/07, CJCE, Commission v France, Rec. p. I-9159.

[12] Regulation (EC) n° 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety (OJ L 031, 1.2.2002), pp. 1–24.

The adoption of Directive 2015/412 constitutes a long-time expected amendment of Directive 2001/18. It aims to leave Member States with more room to adapt the scope of an authorization. It also makes the safeguard clause just one legal basis on which Member States can implement national measures that derogate from an EU authorization. Thus, Article 20 of the Law of 2 December 2015 amended Article L. 533-5-2 of the French Environment Code to provide that during the authorization procedure, competent national authorities may demand that the geographical scope of the written consent or authorization be adjusted to exclude cultivation on all or part of their national territory.[13] In addition, Article L. 533-7-1 provides for the possibility to demand a geographical derogation once the authorization has been delivered, but only on the grounds strictly defined by Article 26 b §3 of the 2015 Directive.[14] The important point is that a Member State cannot base its demand on sanitary or environmental interests. These grounds are reviewed during the risk assessment process at the application stage and may be invoked under the safeguard clause mechanism.

Article L. 533-7-1 also provides for the procedural requirements of the Directive to be respected. From a procedural point of view, the communication of draft national measures to the European Commission opens a 75 day period during which the Commission may make comments. These comments may be taken into account by the national competent authorities. In addition, this period is a kind of suspended time, where Member State must refrain from adopting and implementing proposed derogations and operators must refrain from planting the GMO seeds which are the subject of the application. After these procedural processes, the Member State can adopt the national measure, which, according to European law, '*shall be reasoned, proportional and non-discriminatory*'[15] The time limits are strictly limited to not impair the effectiveness of the decision-making process[16]. The obligation of information is also central to preserving the functioning of the EU single market.

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[13] See Art. 26 b (1) of Directive 2015/412.

[14] Art. 26 b (3) of the Directive : '(…) provided that such measures are in conformity with Union law, reasoned, proportional and non-discriminatory and, in addition, are based on compelling grounds such as those related to : environmental policy objectives, town and country planning, land use, socioeconomic impacts, avoidance of GMO presence in other products without prejudice to Article 26a, public policy.'

[15] Art. 26 b (3) of the Directive.

[16] Art. 26 b (1) : 'That demand shall be communicated to the Commission at the latest 45 days from the date of circulation of the assessment report under Article 14(2) of this Directive, or from receiving the opinion of the European Food Safety Authority under Article 6(6) and Article 18(6) of Regulation (EC) No 1829/2003. The Commission shall present the demand of the Member State to the notifier/applicant and to the other Member States without delay.'

Finally, Article L. 533-8-2 provides for the possibility for an administrative authority to revoke the national measure of derogation and reintegrate the excluded geographical area into the authorization. The authority may make a request to that effect to the authority which issued the written consent under the 2015 Directive, and then notify the decision to the Commission[17].

Directive 2015/412 opens a new way for Member States to develop a specific approach towards GMO dissemination in their territory. It leaves a wider margin of appreciation to the Member States in order to balance the different interests at stake and allow them to adapt authorizations precisely, even locally. In this way, the Directive to some extent contributes to the re-nationalization of the regulation process of GMOs. Implemented in the French system, this can lead to interesting opportunities.

Perspectives on GMO Regulation in the French System

As mentioned, the Law of 2 December 2015 does not restrict its contents to the requirements set out in the 2015 Directive. Indeed, it goes further, providing for the conditions of public information and participation in the decision-making process to adopt derogatory measures. It creates a new part in the Environment Code, Section 4 'Public participation', including Article L. 533-9. The scope of this provision is widely defined, including every decision and application authorizing GMO dissemination or derogating to such authorization. In addition, the provision requires competent authorities to provide the public with electronic drafts of their decisions and application files, for a reasonable time, depending on the type of decision[18].

Such a requirement is not new under EU law; it is fully in compliance with it.[19] The fact that the legislation expressly mentions public participation reflects French problems with GMO management, and the broader public claim for more transparency in decision-making processes. The weight accorded to evidence from scientific and advisory bodies is regularly challenged. In addition, the position of political authorities has been rather unclear, disregarding the changing of the political majority, and many decisions have not been in

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[17] Art. 26 b (5) & (6) of the Directive.

[18] Art. L. 533-9-1 of the Code of Environment.

[19] See Directive 2003/4/EC of the European Parliament and of the Council of 28 January 2003 on public access to environmental information and repealing Council Directive 90/313/EEC (OJ L 41, 14.2.2003, p. 26–32) ; Directive 2003/35/EC of the European Parliament and of the Council of 26 May 2003 providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment and amending with regard to public participation and access to justice Council Directives 85/337/EEC and 96/61/EC (OJ L 156, 25.6.2003, p. 17–25).

compliance with EU law. For example, in 1997, the authorization to grow a GMO corn was suspended, but not the authorization to import the GMO. One year later, the government authorized two other GMO corn crops but suspended GMO colza and beetroot for two years. The suspension of authorization of GMO corn in 1997 was challenged and upheld before the Council of State. However, after a contrary preliminary ruling by the European Court of Justice,[20] the Council of State had to cancel their support for the suspension since EU law determined that the precautionary principle could not be invoked at the national level once an authorization had been delivered, in the absence of new scientific evidence. [21] Consequently, the government delivered the authorization.[22] In 2008, France prohibited the cultivation of GMO corn MON810, the only GMO seeds currently authorized by the EU. The two administrative decisions [23] suspending its cultivation on French territory were successively annulled by the Council of State, but always after the seedling period, which was a way to limit the opportunity of cultivating concretely GMOs on French territory, at least in the short term. [24] On 15 March 2014, the Government published a third decision suspending a GMO corn. This decision was immediately challenged, with the applicants requesting the administrative decision to be overturned. By ruling of 5 March 2014, the Council of State decided not to overturn the administrative decision because the condition that the situation be an emergency was not satisfied. Even though the Council of State decided in 2013 that administrative decisions dealing with similar issues were illegal, the judge in this case considered that the context was different because there were new scientific studies. In August 2014, the European Food Safety Authority delivered an unfavourable opinion on the French position, [25] stating that the scientific report did not

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[20] CJCE Case 6/99, 21 March 2000, Association Greenpeace France e.a /Ministère de l'Agriculture et de la Pêche e.a, Rec. p. I-1651.

[21] CE, 1st October 2001, n° 225008*, Greenpeace France*.

[22] Olivier Godard, « Le principe de précaution et la controverse OGM », *Économie publique/Public economics* [on line], 21 | 2007/2, available at :
http://economiepublique.revues.org/7852

[23] See Arrêté du 7 février 2008, modifié par l'arrêté du 13 février 2008 suspendant la mise en culture des variétés de semences de maïs génétiquement modifié (Zea mays L. lignée MON 810) **;** Arrêté du 16 mars 2012 suspendant la mise en culture des variétés de semences de maïs génétiquement modifié (Zea mays L. lignée MON 810).

[24] CE, 6 November 2009, n° 313605 ; CE, 1er août 2013, n° 358103, available at :
www.legifrance.gouv.fr

[25] Statement on a request from the European Commission related to an emergency measure notified by France under Article 34 of Regulation (EC) 1829/2003 to prohibit the cultivation of genetically

contain any new information of the existence of risk. The European Food Safety Authority also found that the French Law of 2 June 2014 that prohibited any dissemination and cultivation of GMO corn violated EU rules.[26] The European Commission and Council of State have yet to assess the compatibility of the administrative decision with EU requirements, but since Directive 2015/412 has been passed their assessment will be done under the new legal conditions. Since Article 26c of Directive 2015/412 expressly provides for the possibility to adopt transitory measures,[27] the suspension decisions may be qualified as such. On 15 September 2015, the French government used this provision to notify such measures to the Commission.

Conclusion

Directive 2015/412 constitutes an interesting opportunity to clarify the relations between European and national authorities for GMO regulation in the European Union. It also brings more openness in the sharing of responsibilities between the national and European level. Such an evolution may constitute an important step towards the improvement of democratic control. Indeed, the current functioning of EU law suffers from democratic deficit, especially concerning the GMO authorization process. Giving wider discretion to Member States could be a way to reinforce democracy in the decision-making process on GMOs. It could also represent an interesting way to improve the consideration of regional specificities. The French situation, as a strict unitary State, is not comparable to that of other Member States, such as the United Kingdom, where there are different solutions with regards to GMO dissemination. Nevertheless, the new Directive may herald the beginning of a new direction with regards to the recognition of national authority, as a key actor in GMO regulation.[28]

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modified maize MON 810, *EFSA Journal* 2014; available at http://www.efsa.europa.eu/fr/efsajournal/pub/3809.htm

[26] Loi n° 2014-567 du 2 juin 2014 relative à l'interdiction de la mise en culture des variétés de maïs génétiquement modifié (JORF n°0127 du 3 juin 2014) p. 9208.

[27] Art. 26 c of Directive 2015/412 : 'From 2 April 2015 until 3 October 2015, a Member State may demand that the geographical scope of a notification/application submitted, or of an authorisation granted, under this Directive or Regulation (EC) No 1829/2003 before 2 April 2015 be adjusted. The Commission shall present the demand of the Member State to the notifier/applicant and to the other Member States without delay.'

[28] Currently, the mayor can only use its administrative police powers to prohibit GMOs cultivation on the municipal territory if there are specific local conditions. In such conditions are missing, the Council of State annuls municipal administrative decisions even grounded on precautionary principle, see for example: CE, 16 April 2010, *Azelvandre*, n° 279817. A county council could, validly, express wishes to oppose to dissemination of GMOs, see CE, 30 December 2009, *Département du Gers*, n° 308514.

Such an evolution may also be a source of new issues for the French and European Union systems. Indeed, the margin of appreciation of any Member State remains limited by at least three elements. First, national measures need to be proportionate and submitted to the indirect review of the Court of Justice. Second, they need to be in compliance with World Trade Organization law. Finally, it remains important to define the conditions of risk acceptability in a collective manner, at the European level.

COUNTRY REPORT: GERMANY

The Non-Regression Principle under EU and German Water Law 'On the Ground': A Landmark Decision of the European Court of Justice

Eckard Rehbinder*

Introduction

For quite some time, non-regression of environmental law has been propagated as a principle of international, European and national environmental law.[1] While the emphasis of the 'non-regression movement' has been laid on legislation in the sense that environmental legislation should not back-track, the non-regression principle (or, if one denies its recognition as a principle: the non-regression approach) also applies to environmental quality as such. This appears plausible, since non-regression of environmental law is not an objective in itself, but serves to maintain and improve the quality of the environment. Therefore, the non-regression principle also mandates a shaping and application of environmental law to the extent that existing good environmental quality should not be deteriorated and existing bad environmental quality should at least not be further deteriorated. At this level, one often speaks of a non-deterioration principle.

An expression of the non-regression principle can be found in the European Water Framework Directive of 2000 (WFD).[2] The Directive introduced a framework of water management for river basin districts in the European Union which has to be implemented by the Member States, *inter alia*, by enacting new legislation or amending existing provisions. The WFD is based on the ambitious aim of reaching both good ecological and good chemical water quality in the whole Union within certain time-limits (by 2015, to be

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[1] See M. Prieur, Non-regression in environmental law, S.A.P.I.EN.S 5 (2012), no. 2; *id*., De l'urgente nécessité de reconnaitre le principe de non regression en droit de l'environnement, IUCN Academy of Environmental Law, e-journal 2011; M. Prieur & G. Sozzo (eds.), La non regression en droit de l'environnement, Brussels, 2012 ; Draft International Covenant on Environment and Development – Implementing Sustainability, IUCN & ICEL, 5th ed. 2015, Art. 10 and accompanying commentary, pp. 57-58.

[2] Directive 2000/60/EC, as last amended by Commission Directive 14/101/EU.

prolonged, if necessary, twice up to 2021 and 2027). It entails a prohibition of deterioration of water quality as well as an obligation to protect, enhance and restore all bodies of water (with respect to surface waters: Article 4[1] [a] [i] and [ii]), subject to an exception in case of overriding public interest and/or benefit (Article 4[7]). There is a special, less stringent regime for artificial and heavily modified waters which, however, also contains a non-deterioration obligation. Moreover, the WFD requires the Member States to establish, for each river basin district, a programme of measures to achieve the objectives set forth in Article 4. The programme of measures forms a separate part of the water management plans (Articles 11 and 13).

Germany has implemented the WFD by establishing, in the Water Resources Management Act,[3] new provisions on water quality objectives (with respect to surface waters: Sections 27, 30 and 31[1], [2]) and on water management planning (Sections 82 and 83) and adopting the Surface Waters Regulation.[4] Moreover, the Federal Waterways Act[5] has been amended so as to implement the WFD (Section 12[7], 3rd sentence).

History of the Case

From the very beginning, the interpretation of the non-deterioration obligation as regards its binding nature and content has given rise to much controversy, which highlights the difficulties one is confronting when leaving the sphere of an abstract principle for the practical application on the ground. Apart from an extensive and controversial discussion in the legal literature, there have also been some court cases regarding physical alterations of water courses and the construction and operation of coal- or lignite-fired power plants which interpreted the prohibition of deterioration in a rather strict way.

One of these cases concerned the deepening of three segments of the lower Weser for making the river navigable for very large sea-going vessels up to the ports of Bremerhaven, Brake and Bremen. The competent planning authority had granted planning consent under the Federal Waterways Act on the grounds that the expected deterioration of the ecological quality of the Weser river due to the deepening and subsequent periodical dredging would not result in a lower classification of the ecological status of the river and in any case the prerequisites of the exception under Section 14[1], second sentence of the Act (implementing Article 4[7] WFD), were fulfilled. The legality of this planning permission was challenged by an environmental association before the Federal Administrative Court (which was competent as a court of first instance because of the federal interest at stake). The

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[3] Law of 31 July 2009, *Federal Gazette* 2009 (Part 1), p. 2585.

[4] Regulation of 20 July 2011, *Federal Gazette* 2011 (Part 1), p. 1429.

[5] Consolidated Version of 23 May 2007, *Federal Gazette* 2007 (Part 1), p. 962.

Federal Administrative Court,[6] assuming that the legislature had intended to implement the WFD without rendering German law more severe than the Directive ('one by one' or 'copy and paste' implementation), referred the case for a preliminary ruling on the interpretation of the non-deterioration obligation under Article 267 of the Treaty on the Functioning of the European Union (TFEU) to the European Court of Justice. On the 1st of July 2014, a Grand Chamber of the Court (composed of 15 judges)[7] rendered its judgement on the case which can rightly be denoted as a landmark decision in EU water law.

The Legal Nature of the Prohibition of Deterioration

One of the controversial questions regarding the prohibition of deterioration of water quality under Article 4 of the WFD concerned its legal nature. The question is whether the non-deterioration obligation is only a principle for water management planning or is a rule in the form of a prohibition or permit prerequisite which is applicable to any individual alteration of, or discharge into, a body of water.

As evidenced by the reference of Article 11[1] of the WFD, (one of its planning provisions), to the 'objectives established under Article 4', the non-deterioration obligation constitutes without any doubt an objective for long-term water management planning. However, the Court held that Article 4[1] of the WFD is a bi-functional norm which – subject to the possibility of an exception under Article 4[7] – also governs any individual alteration of, or discharge into, a body of water and therefore has to be strictly applied in the permit procedure.

The most important arguments of the Court[8] in favour of this interpretation are the following:

> *(1) Article 4[1] of the WFD explicitly refers to "making operational" the programmes of measures, which means that it cannot only apply to their establishment but must apply after they have been established; (2) the WFD requires the Member States "to implement the necessary measures to prevent deterioration" of the relevant bodies of water; (3) in contrast to the improvement obligation the non-deterioration obligation is unconditional; and (4) the exception set forth under Article 4[7] of the WFD clearly concerns individual cases.*

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[6] Decision of 11 July 2013, 7 A 20.11, available at www.bverwg.de/Entscheidungen, 2013 Deutsches Verwaltungsblatt, p. 1450.

[7] Judgement of 1 July 2015, Case C-461/13, Bund für Umwelt- und Naturschutz Deutschland v. Bundesrepublik Deutschland, ECLI:EU:C:2015:433, available at: www.curia.europa.eu.

[8] Above (n. 7, ns. 29-51).

By and large, these arguments appear to be convincing. Although the decision in this case contributes to making the non-deterioration obligation more stringent, one cannot say that it has a 'teleological bias', over-emphasising the principle of effectiveness of EU law without a basis in the Directive itself. However, there are also some flaws in the argumentation the Court. It somewhat neglects the language of Article 11 of the WFD which denotes the prohibition of deterioration as a mere 'objective.' It does not reflect on the practical meaning the measures programme can retain at all if the major role of the non-deterioration obligation lies in the permit procedure. Finally, the assumption of the Court that non-deterioration, if understood as a mere planning principle, would not be legally binding is contrary to the common understanding of legal principles. The question is not bindingness but the distinction between a principle which is subject to some balancing with conflicting concerns and a rule which is strictly applicable.

In the result, the judgment of the European Court of Justice confirms the opinion of the German courts[9] which – in contrast to the authorities at federal and state levels – have unanimously considered the non-deterioration obligation as a permit prerequisite under Section 12[1] no.1 or no. 2 of the Water Resources Management Act (no adverse alterations of waters, compliance with other statutory requirements) as well as Section 14 of the Federal Waterways Act.

The Meaning of Deterioration

Deterioration 'Theories'

As regards the meaning of the notion of deterioration, in administrative practice, court decisions and legal literature two 'theories' have been followed – the 'status class theory' and the 'status quo theory'[10]. The status class theory which has been applied in the practice of German water authorities considers as a (relevant) deterioration only an alteration of, or discharge into, a body of water which leads to a fall of the classification of the body of water into a lower status class. By contrast, under the status quo theory which has been followed by the more recent German court decisions[11] any deterioration of the existing ecological

[9] Federal Administrative Court, above (n. 6, ns. 27-32); Administrative Court of Appeals Hamburg, judgement of 18 January 2013, 5 E 11/08, 2013 Natur und Recht 2013, 727 at 734-737; Administrative Court Cottbus, Judgement of 23 October 2012, 4 K 321/10, 2013 Zeitschrift für Umweltrecht, p. 734, at p. 735.

[10] See European Court of Justice, above (ns. 7, 52).

[11] Federal Administrative Court, above (n. 6, ns. 47-50); Administrative Court of Appeals Hamburg, above (n. 9) at 737-740; Administrative Court Cottbus, above (n. 9) at 375-376.

and/or chemical water quality due to an alteration or discharge would be a relevant deterioration, at best attenuated by the recognition of a *de minimis* rule.

Relationship to the Classification of Bodies of Water

In order to understand this controversy, one must have a closer look at the system of classification of bodies of water under the WFD. The Directive distinguishes between two quality categories of fresh bodies of water, that is, ecological status and chemical status. The ecological status is composed of three quality elements (biological elements, hydro-morphological elements, chemical and physico-chemical elements including pollution by specific pollutants). The chemical status refers to various water quality standards. The ecological status has five status classes, that is 'high', 'good', 'moderate', 'poor' and 'bad', the chemical status only has two status classes, that is 'good' and 'failing to achieve good'. Classification of a body of water is governed by the 'one out, all out' rule under which a body of water will already be classified into a poorer status class where only one quality element has to be classified into that status class or one chemical pollutant does not meet the applicable quality standard (Article 2 no. 17, Annex V nos. 1.4.2 and 1.42 WFD).

While the intricacies of the WFD's classification system are irrelevant for the status quo theory because it refers to the factual quality of a body of water, they are of crucial importance for the status class theory. For once a body of water has been classified into a poorer status class (e.g. 'moderate' or 'failing to achieve good') because one quality element has that poorer quality, or one pollutant does not meet the relevant quality standard, a deterioration with respect to another quality element previously having a higher quality status (e.g. 'good') would not count as long as the deterioration does not exceed the class limits of the whole body of water (e.g. 'moderate') or would not count at all where a further pollutant exceeds the relevant quality standard however serious this exceedance may be.

The Court Holding

The European Court of Justice[12] neither follows the status class theory nor the status quo theory but adopts a middle course. In the absence of a clear meaning of the notion of 'status' under the various linguistic versions of the Directive, the Court primarily relies on teleological arguments. The Court rejects the status class theory on the grounds that, as a consequence of the 'one out, all out' rule, it would allow, contrary to the very objectives of the WFD, to 'fill up' the respective status class through deterioration of further quality elements or through the discharge of further substances in exceedance of the relevant water quality standards. The theory favoured by the Court could be called a 'modified status class' theory or a 'quality

[12] Above (n. 7, ns. 55-70).

elements theory'. In the opinion of the Court, it is not necessary for assuming a relevant deterioration that the whole body of water has to be declassified as a consequence of an alteration. It shall be sufficient that a single quality element of the relevant quality category exceeds the class limits of its previous classification even if this does not lead to a declassification of the whole body of water. Deteriorations which remain within the previous class limits of the applicable quality element are considered to be irrelevant. However, as regards deteriorations of quality elements which are already within the lowest status class the Court applies the status quo theory.

As a result, the reasoning of the Court appears convincing. A 'filling up' of a status class which would be possible under the status class theory could only insufficiently be counteracted by applying the improvement obligation set forth by Article 4[1] [ii] WFD because this obligation is not unconditional but is subject to time-limits which can even be prolonged. Moreover, if under the classification system of the WFD the poorest value of a quality element leads to a declassification of the whole body of water, it appears consistent that the fall of a further quality component by one class should also constitute a relevant deterioration. Adherents of the status class theory who would denote this as formalistic and point to the different weight of the relevant quality elements for water management and their lacking normative applicability, ignore that these asserted flaws also apply to their theory because, when applying the 'one out, all out' rule, this theory has to face the same kind of problems. Apart from that, the classification under the WFD does not allow for an overall weighing between all quality elements (see annex V no. 1.1.2, 1.4.2). Such weighing is only permissible within a particular quality element and beyond that, at best, insofar as all relevant quality elements do not exceed the applicable class limits.

A certain flaw of the judgment however is that the Court cannot explain why the more demanding status quo theory should not be applicable as a rule. One cannot deny that the middle course followed by the Court reflects an implicit balancing of the requirements of protection of waters with the legitimate interest in using the waters, which rules it out to treat waters in the same way as protected areas under nature conservation law. Certain deteriorations of bodies of water with respect to particular quality elements are now considered to be irrelevant and therefore permissible without the need to secure an exception. This is all the more important since the exception clause of Article 4[7] of the WFD is limited to physical alterations of bodies of water or, under more limited conditions, to changes of the hydro-morphological properties of bodies of water and does not cover discharges. One should also consider that the classification system of the WFD already operates with highly differentiated quality elements and classes. In particular, the differences between the various ecological status classes ('high', 'good', 'moderate', 'poor' and 'bad')

are very subtle. There is in principle no cogent need to take recourse to the status quo theory.

Insofar as the European Court of Justice decided in favour of the status quo theory, that is, as regards alterations within the lowest status class, this is justified on teleological grounds. Such alterations, are to a particularly high degree, liable to jeopardize the achievement of the objectives of the WFD. Moreover, for lack of a sufficient normative framing of the classification in this status class, there are no sufficient normative criteria to justify the application of any other theory. However it should be noted that under the Court holding even in the lowest status class, a deterioration of quality elements of a body of water which are still in a higher status class remains admissible if the relevant class limits are not exceeded.

Thresholds of Irrelevance

In order to mitigate the rigour of the non-deterioration requirement, the recognition of thresholds of irrelevance has been proposed, or at least considered. However, the relevant formulations for deteriorations which should be considered as irrelevant - such as 'considerable', 'significant' or 'slight' - do not in themselves convey a precise idea about what the respective courts or authors mean.[13] Under the modified status class theory, thresholds of irrelevance would only play a role in the lowest status class. They are primarily relevant under the status quo theory.

The European Court of Justice[14] explicitly rejected a threshold of considerable deterioration, apparently based on the assumption that this threshold implies an element of weighing. However, it should be noted that the Court's own solution, that is, the modified status class theory, contains an element of a threshold of irrelevance insofar as it assumes that certain deteriorations are not to be considered as relevant. Beyond that, the Court explicitly stated that the thresholds under the non-deterioration obligation must be 'slight.' It is not clear whether this was meant as a justification of the Court's modified status class theory or as an additional requirement for the application of the status quo theory with respect to the lowest status class. In this respect, the answer of the European Court to the Federal Administrative Court's reference question is unsatisfactory.

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[13] See Federal Administrative Court, supra note 6, nos. 47-50; Administrative Court of Appeals Hamburg, above (n. 9) at 739.

[14] Above (n. 7, ns. 67-68).

Open Questions

Reference Area

The obligation to prevent a deterioration of waters refers to the body of water. This is a larger segment of a water course which may comprise up to 20 kilometres. It is an open question whether and to what extent a geographically limited alteration of a water course or a local discharge may be considered as irrelevant because it is only of a purely local nature or whether it can at least be compensated for by improvements elsewhere in the body of water. In this context it should also be noted that Article 4 of the Environmental Quality Standards Directive of 2008[15] which specifies the WFD admits 'mixing zones' in the proximity of a discharge point which are not to be considered in determining whether a relevant water quality standard is met or not. Since the classification system of the WFD is geared to the notion of body of water and the monitoring requirements reflect this basic orientation, one cannot rule it out that the reference to the body of water renders certain deteriorations admissible for purposes of the non-deterioration obligation even if one does not recognise a threshold of irrelevance. The European Court did not address this issue.

Transferability to the Chemical Status of Bodies of Water

The judgment of the European Court of Justice is limited to the ecological status of bodies of water including the physico-chemical quality elements. However, for reasons of coherence and consistency, the holding may also be transferred to the chemical status of bodies of water which has to be classified using a similar methodology, including the application of the 'one out, all out' rule (Art. 2 no. 24, Annex V no. 1.4.4 WFD). The mere fact that there only are two status classes does not militate against such a transfer. The situation is similar to the two lowest ecological status classes. Where the body of water complies with all quality standards and has to be classified as 'good', according to the logic of the Court holding a deterioration above the quality standards would be admissible. Where the body of water has been classified as 'failing to achieve good' because of exceeding one quality standard, a further deterioration regarding the relevant pollutant would not be admissible under the non-deterioration obligation. As regards all other quality standards, a deterioration within the limits of the applicable quality standards would be admissible. This result is not ruled out by the Environmental Quality Standards Directive. The possibility that according to this rationale cumulative deteriorations by several, even numerous substances up to the limits of the water quality standards would have to be tolerated might make this conclusion somewhat questionable. However, it must be noted that point sources are controlled under the

[15] Directive 2008/105/EC.

'combined approach' of article 10 WFD whereby beyond meeting the water quality standards point sources must limit their discharges according to best available technology.

Obligation of Improvement of Bodies of Water

The European Court of Justice also deals with the obligation to improve existing water quality as required by Article 4[1] [a] [ii] WFD. However, apart from the discussion of the improvement obligation and the non-deterioration obligation to support the Court's interpretation of the latter obligation, there is hardly any language in the decision that deals with the improvement obligation. The Court only states that, subject to an exception under Article 4[7] WFD, the permission of a project must also be denied where the timely achievement of the good ecological status or (in case of heavily modified waters) good ecological potential and of the good chemical status of a body of freshwater is jeopardized. Any discussion of when this may be the case is missing in the judgment. The reason for this reticence may lie in the failure of the WFD to achieve, as envisaged, good water in the majority of EU bodies of water by 2015 and the not improbable failure to achieve this aim by 2021 and even 2027. In any case, against this backdrop a demanding interpretation of the non-deterioration obligation appears all the more appropriate.

Conclusion

The holding of the European Court of Justice is not only relevant for Germany. It will also have a deep impact on other EU Member States which used to consider the non-deterioration obligation as a mere planning principle and/or followed the status class theory.[16] Whatever one thinks of the middle interpretive course taken by the Court, the decision highlights the practical difficulties one is confronting when applying the non-deterioration obligation on the ground. There certainly is no case for denying the importance of establishing a non-regression principle as a defence against legislative back-tracking. However, application of environmental law on the ground with a view to preventing a deterioration of environmental quality is the level which may count more in the practical result. More empirical research on the existence of statutory non-deterioration obligations, their interpretation and application on the ground would be very useful.

[16] For a short comparative analysis see A. Keessen et al., European River Basin Districts: Are They Swimming in the Same Implementation Pool?, Journal of Environmental Law 22 (2010), p. 197, at pp. 210-212.

COUNTRY REPORT: ITALY

New Italian Law on Environmental Criminal Offences

Carmine Petteruti*

2015 can be considered a year of change in the Italian legislative approach to environmental protection. It signifies a new approach to environmental offences through the introduction in the Criminal Code of section VI-bis about offences against the environment. This report aims to describe the penalty system and new criminal offences.

Directive 2008/99/EC on the Protection of the Environment through the Criminal Law

The European Parliament and Council adopted Directive 2008/99/EC[1] to achieve effective protection of the environment through more dissuasive penalties for environmentally harmful activities, which typically cause or are likely to cause substantial damage to the air (including the stratosphere), soil, water, animals or plants (including to the conservation of species). The Directive arose out of concerns by the EU regarding the rise in environmental offences and their effects, which are increasingly extending beyond the borders of the States in which the offences are committed.

The Directive obliges Member States to provide for criminal penalties in their national legislation in respect of serious infringements of provisions of Community law on the protection of the environment. The European Commission adopted a proposal for a directive aiming to ensure the protection of the environment through criminal law because only this type of measure seems adequate, and dissuasive enough, to achieve proper implementation of environmental law.[2] At the same time, it was observed by the Commission that there are large differences between the Member States in the criminal sanctions applicable to

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[1] Directive 2008/99/EC of 19 November 2008, OJ, 6 December 2008, L 328, pp. 28-37. The European Commission in 2001 had already proposal a Directive on the protection of the environment through criminal law, based on Article 175 of the EC Treaty.

[2] COM (2007)51 final 2007/0022 (COD), Brussels, 9. February 2007.

environmental offences.[3] Moreover, existing criminal sanctions are not sufficiently rigorous to ensure a high level of environmental protection throughout the Community.

From this perspective, Directive 2008/99/EC introduced minimum requirements to be implemented in national criminal laws. It identifies some unlawful actions, which can result in death or serious injury or serious damage to water, soil, air, animals and plants.[4] In this respect, Article 3 provides that Member States shall ensure that the following conduct constitutes a criminal offence, when unlawful and committed intentionally, or with at least serious negligence:

- the discharge, emission or introduction of a quantity of materials or ionising radiation into air, soil or water;
- the collection, transport, recovery or disposal of waste, including the supervision of such operations and the aftercare of disposal sites, and including action taken as a dealer or a broker (waste management);
- the shipment of waste, where this activity falls within the scope of Article 2(35) of Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste and is undertaken in a non-negligible quantity, whether executed in a single shipment or in several shipments which appear to be linked;
- the operation of a plant in which a dangerous activity is carried out or in which dangerous substances or preparations are stored or used and which, outside the plant;
- the production, processing, handling, use, holding, storage, transport, import, export or disposal of nuclear materials or other hazardous radioactive substances;
- the killing, destruction, possession or taking of specimens of protected wild fauna or flora species, except for cases where the conduct concerns a negligible quantity of such specimens and has a negligible impact on the conservation status of the species;
- trading in specimens of protected wild fauna or flora species or parts or derivatives thereof, except for cases where the conduct concerns a negligible quantity of such specimens and has a negligible impact on the conservation status of the species;
- any conduct which causes the significant deterioration of a habitat within a protected site;
- production, importation, exportation, placing on the market or use of ozone-depleting substances.

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[3] European Commission, *Environmental Crime*, http://ec.europa.eu/environment/legal/crime/.

[4] C. Ruga Riva, *I nuovi ecoreati,* Torino, Giappichelli, 2015, 7.

Therefore, the EU has taken the view that administrative and civil penalties alone are ineffective in deterring wrongful behaviour and considered it appropriate to introduce more dissuasive criminal penalties in the Member States law.[5] In this regard, Directive 2008/99/EC also provides, in Article 4, that Member States must provide criminal penalties for inciting, aiding and abetting an offence against the environment (listed in Article 3). The same Directive requires that Member States shall ensure that legal persons can be held liable for offences referred to in Articles 3 and 4 where such offences have been committed for their benefit by any person who has a leading position within the legal person, acting either individually or as part of an organ of the legal person (Article 6).

It is important to observe that Directive 2008/99/EC was adopted in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty establishing the European Community, whereby effective protection of the environment cannot be sufficiently achieved by the Member States and can be better achieved by the EU. This principle is very important where the EU is acting in an area such as criminal law or the rules of criminal procedure which do not fall within its exclusive competence. However, the European Court of Justice (CJEU) ruled that, although neither criminal law nor the rules of criminal procedure fall within the Community's competence, it does not prevent the Community legislature

> when the application of effective, proportionate and dissuasive criminal penalties by the competent national authorities is an essential measure for combating serious environmental offences, from taking measures which relate to the criminal law of the Member States which it considers necessary in order to ensure that the rules which it lays down on environmental protection are fully effective» (Case C-176/03).[6]

[5] L. Ramacci, Diritto penale dell'ambiente, Piacenza, La Tribuna, 2015, 23.

[6] *Impresa Portuale di Cagliari srl v. Tirrenia di Navigazione spa*, case no. C-176/03 of 23th March 2003. The Court of Justice confirmed that protection of the environment constitutes one of the essential objectives of the Community. The EU has the task of promoting a high level of protection and improvement of the quality of the environment and the Treaty on European Union provides for the establishment of a policy in the sphere of the environment (Article 3 TEU). On Directive 2008/99/EC see A. Gouritin, P. De Hert, Directive 2008/99/EC of 19 November 2008 on the protection of the environment through criminal law: A new start for criminal law in the European Community?, *Environmental Law Network International Review*, 1/09, 22.

Environmental Protection: Administrative and Criminal Penalties. The Example of Water Law

The Italian legal system provides administrative and criminal penalties for environmental offences.[7]

However, the provisions of the Italian legislation do not appear to be effective in the broader context but are constrained in that they applies specifically only to defined illegal cases. Providing for both criminal and administrative penalties is a good starting point for ensuring that the environment is protected. However, more needs to be done to ensure the effectiveness of these provisions. Undoubtedly, the difficulty of choosing the appropriate penalty also depends on the challenge of achieving the right balance between the protection of private economic interests (such as those connected with individual citizens and businesses) and the protection of public interests (such as those associated with sustainable development). [8]

Therefore, it is clear that the regulation of environmental damage liability must result from an assessment and the application of the best 'protection tools' with respect to environmental policy objectives. [9]

In this regard, Legislative Decree n.152/2006 *(Italian Code of Environment)* [10] confirmed the previous general framework of penalties. Legislative Decree n. 152/06 provides administrative and criminal penalties with prevalence of the first kind. Thus, Legislative Decree n. 152/2006 provides the same penalties as the old Law n. 319/76 on water, based on administrative penalties for domestic waste-water and criminal penalties for industrial waste-water. The Legislative Decree provides administrative penalties especially for exceeded water discharge limits, the absence of a discharge license and the revocation or suspension of domestic waste-water license. Criminal penalties, instead, are provided for the absence of a waste-water license, waste-water not in conformity with the standards prescribed, violation of the prohibition of direct discharges of pollutants into groundwater, soil

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[7] Law n. 689 of 24 November 1981 generally regulates administrative penalties and it decriminalised some offences punished by fine in relevant sectors like environment, urban planning, food, etc.

[8] P. Brambilla, Environmental penalties in Italy, in Environmental Law Network International Review, 1/09, 3: «The legislation in case – sporadic as it was – led to the creation within the Italian legal system of both administrative and criminal penalties which, with regard to criminal offences, overlap with a whole set of pre-constitutional legal provisions dating back to 1930 that only protected environmental assets directly».

[9] F. Degl'Innocenti, I criteri di imputazione della responsabilità per danno ambientale, in Contratto e impresa, 2013, at 743, n. 3.

[10] Legislative Decree No. 152/06 of 3 April 2006

and subsoil[11]. The reading of the Legislative Decree shows that the boundary between administrative and criminal penalties is represented by the type of water discharge. Thus, administrative penalties are applied to domestic water discharge; criminal penalties are applied to industrial waste-water.

This system was influenced by the opinion that the command and control approach does not achieve efficient environmental protection. Nevertheless, the Italian legislator considers the penalty system an important instrument to ensure respect for the law and to achieve virtuous environmental behavior. In this respect, it is possible to identify two kinds of penalties in water law: Penalties to redress broken public interests and penalties to punish violations of law. Inside this general system, Italian legislators showed a preference for administrative penalties for two reasons: the influence of environmental regional law and the slowness of criminal trials. However, some scholars criticize this choice because criminal penalties should be used by judges to punish major violations and because Public Administration inefficiency could limit the effectiveness of administrative sanctions. Added to this, if public bodies infringe environmental law there is a risk that the controller and the controlled are one and the same.[12]

Given these problems, Legislative Decree n. 152/06 did not re-organise the penalty system. It can be argued that Italian legislators has still not managed to strike the right balance between command and control and economic instruments (like environmental tax, incentives, etc.) to realise a system of effective environmental protection. It cannot be ignored that for a long time the Italian legislator has disregarded EU directives by favouring administrative penalties over criminal ones with regard to the protection of the environment. This is because often the penalty is applied on the basis of administrative proceedings and not judicial proceedings and this results in a more effective and immediate penal sanction.[13]

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[11] Article 130 of the Legislative Decree provides legal notices, with suspended or revoked permission, in case of water permission infringements. The aim is to enforce the penalty system by introducing measures that are able to have economic effects on companies. Indeed, sometimes administrative and criminal penalties are considered just like a cost element. Instead, suspension or revocation of the permission is a real deterrence because they do not allow the authorized exhaust to continue.

[12] The circumstance would apply to a company owned by a public body (e.g. Province or Municipality) that is found guilty of environmental crimes would have its penalty applied by the same public body. In addition an administrative penalty can be imposed by the Province to a Municipality with respect to a treatment plant of urban waste water that exceeds the prescribed parameters (Art. 133 of Legislative Decree n. 152/06).

[13] P. Brambilla, op. cit., 6.

The New Environmental Criminal Offences in 2015

Legislative Decree n. 68 of 22 May 2015 represented a change of course in the Italian penalty system. Indeed, it introduced new offences and stronger criminal penalties. Legislative Decree n. 68/2015 is the end of a long course characterised by different attempts to set down a law on environmental crimes.[14] The Legislative Decree introduced section VI-*bis* into the Criminal Code (from article 452-bis to article 452-terdecies). It is entitled *Crimes against the environment*. It introduced four new crimes:

- *Environmental pollution* (art. 452-bis)[15] for which the penalty is a jail sentence of 2 to 6 years and a fine between € 10.000 and € 100.000 imposed on anyone who causes damage to: water, air, soil, subsoil, ecosystem or biodiversity. This penalty can increase in the case of: i) perpetration of the crime in protected areas; ii) damages to protected animal and plant species; iii) pollution followed by death or bodily harm (art. 452-ter).
- *Environmental disaster* (art. 452-quater) for which the penalty is a jail sentence of 5 to 15 years. The article considers environmental disaster to mean: i) the irreversible damage of ecosystem; ii) damage to an ecosystem which requires exceptional interventions; iii) an offence against public safety caused by the extension of damage or the number of injured persons. The penalty can increase in the case of: i) perpetration of the crime in protected areas; ii) damage to protected animal and plant species.
- *Trafficking and neglect of highly radioactive material* (art. 452-sexies) for which the penalty is a jail sentence of 2 to 6 years and a fine between € 10.000 and € 80.000 for anyone, who, in violation of the law, sells, purchases, receives, transports, imports, exports, holds or transfers highly radioactive material.
- *Obstruction of checks* (art. 452-septies) carries a sentence of 6 months to 3 years in jail for anyone who prevents, hampers or disrupts environmental checks.

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[14] In this regard, in 1999 Italian Government proposed to add to the Criminal Code a new section entitled *Crimes against the environment*. Italian Government proposed again the bill on environmental crimes in 2007, after the introduction of the *Italian Code of Environment* (Legislative Decree n. 152/06). These attempts were followed by Legislative Decree n. 121/2011 (about the extension of administrative responsibility, arising from environmental crimes, to legal entities) and by *Land of Fires Decree* (passed into Italian law in February 2014). In this regard, C. Petteruti, Introduction Italy Environmental Law in 2013: The Waste Management Policy, Iucnael EJournal, 5, 2014, 247.

[15] Article 452-bis refers to intentional environmental pollution. Article 452-quinquies provides the unintentional environmental pollution with penalties reduced between one third and two-thirds.

Also*: Failure to carry out remediation* (art. 452-terdecies) carries a sentence of 1 to 4 years in jail and a fine between € 20.000 and € 80.000 for failing to implementing required remediation.

These new crimes resolved some existing problems which had resulted from applying other provisions of the criminal code to environmental offences, in light of the absence of sufficient protection for the environment in the criminal law.[16] For example, article 635 of the Criminal Code about criminal damage or article 674 about dangerous disposal of objects were relied upon in the past to sanction air or electromagnetic pollution. These legal provisions were introduced to address other types of crimes and were not well suited for use in the environmental context.

The new crime of 'environmental disaster' was also introduced to ensure effectiveness of environmental protection and remedy an existing lacuna in the criminal penalty system. It is the answer to the Constitutional Court which exhorted the Italian legislator in the past to introduce this particular type of environmental criminal offence. Indeed, before the new criminal law provisions, the protection against environmental disaster was realized through the 'unnamed disaster' (artt. 434 and 449 of Criminal Code) provision, a 'judicial formulation of criminal offence'. Although some scholars criticize this type of crime, the Constitutional Court, with sentence n. 327 of 1° August 2008, confirmed this type of criminal offence, as qualifying as an extraordinary event that causes serious damage to the life and health of an indeterminate number of people. At the same time, the Constitutional Court underlined the need for a particular type of criminal offence in relation to serious environmental damage.[17]

Legislative Decree n. 68/2015 introduced two other interesting articles; 452-decies and 452-duodecies that have remedial aims. Article 452-decies provides for a reduction of sentence in the case of a person who takes action to prevent further consequences of criminal conduct (rehabilitation of sites, restoration of the places, etc.). Article 452-duodecies introduces the obligation to recover and restore the condition of the premises in the event of a conviction or plea bargain.[18] Along with these legislative provisions, the Criminal Code now

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[16] Legislative Decree n. 152/06 provides different hypothesis of environmental criminal offenses but all of the kinds contemplated are of an infringement nature. Nowadays Legislative Decree n. 68/2015 introduced criminal offenses for which there are prison sentences.

[17] Article 452-quater refers to Article 434 allowing the application of general unnamed disaster whenever there are no conditions for environmental disaster.

[18] Article 452-undecies provides for this.

provides, in terms of article 452-undecies, for specific confiscation[19] of things which are the result, or profit of the environmental crime or which are used to commit the offence. The proceeds of confiscation should be made available to the public administration for the rehabilitation of sites.

There is no doubt that new environmental criminal offences represent a strengthening of environmental protection and a further guarantee of the effectiveness of sentences. However, only time will reveal the effectiveness of the new articles of the Criminal Code in protecting the environment. Some problems of interpretation and coordination of new dispositions will be overcome only through the work of the Courts which always contribute, for better or for worse, to the evolution of environmental law.

[19] The article provides the possibility of confiscation for equivalent too.

COUNTRY REPORT: MEXICO

Giving Effect to the Human Right to Water

Tania García López*

On 28 July 2010, the United Nations General Assembly passed a Resolution titled *Human Right to Water and Sanitation,*[1] in which the importance of 'equitable access to safe and clean drinking water and sanitation as an integral component of the realization of all human rights'[2] is acknowledged. The Resolution also reaffirms that States have a responsibility to promote and protect 'all human rights, which are universal, indivisible, interdependent and interrelated'[3].

Since 2012, when the Political Constitution of the United Mexican States was reformed in light of the above Resolution, a number of legal initiatives related to the right to water have been developed. These initiatives aim to implement the human right to water, which was introduced in Article 4 paragraph 6[4] by the Carta Magna and reads:

> *Every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. The state will guarantee this right and the Law will define the bases, support, and modalities to the access and the equitable and sustainable usage of the water resources, establishing the participation of the Federation, the states, and the municipalities, as well as the citizen participation in order to achieve the aforementioned purposes.*

Since the introduction of this right, and from different sectors (academia, industry, business, civil society), there has been a recognized need to adopt legislation capable of guaranteeing all that is established in the Constitution in relation to water. As we can see, this legal need

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[1] United Nations, *The Human Right to Water and Sanitation*, Resolution adopted by the General Assembly on 28 July 2010 (A/64/L.63/Rev.1 and Add.1) A/RES/64/292.

[2] Ibid.

[3] Ibid.

[4] *Political Constitution of the United Mexican States*, Official Journal of the Federation, February 5th, 1917. Amendment, Official Journal of the Federation, February 8th, 2012.

is about guaranteeing the right to water in the entire country, regardless of the availability of this resource in each part of its states.[5] In this way, it is a provision entirely based on the principle of solidarity.

The sixth paragraph of Article 4 in the Constitution guarantees not only the right to water, but also the right to sanitation. This is of primary importance to those states of the Country whose main problems with this resource are focused not only on the availability of water but on its mismanagement and poor quality.

Currently however, only 47.5% of water is treated inside the country, according to the National Development Plan 2013-2018 (NDP)[6] and the Environment and Natural Resources Program for that same period (ENRP).[7] The NDP points out that 'there are around 60 million people who live in towns provided with water by some of the 101 over-exploited aquifers of the country'[8]. Moreover, this Plan recognizes that 'wastewater treatment must be increased to more than the current 47.5%.[9]

The ENRP adds that 'the water pressure, along with an inadequate use policy, has led to the unsustainable usage of its sources in the country'.[10] Additionally, according to the same Program, 'even if the increase of the treated wastewater volume has been significant in the recent years, it still would not suffice. In 2012, only 47.5% of the collected municipal wastewater was nationally treated, which means that 52.5% of this collected municipal wastewater plus another volume of non-collected waste-water were discharged into dams, rivers, lakes, and seas with no previous treatment'.[11]

The wastewater treatment capacity shows remarkable differences among the states: In 2011, Nuevo León, Baja California, and Aguascalientes treated more than 90% of their wastewater, whereas Campeche and Yucatán did not go beyond 5%. Given these notable differences as regards the management, availability and treatment of water among states in the country the principle of solidarity is particularly relevant in the subject of adopting legislation that ensures the human right to water across the country.

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[5] See García López, Tania, 'Opportunities for the use of economic instruments in water in Mexico' (2014) , (Original version, Oportunidades para el uso de instrumentos económicos en materia de aguas en México), *International Congress of Codes and Challenges to face Water Crisis, la Plata, Argentina,* at 235-241.

[6] National Development Plan 2013-2018, *Official Journal of the Federation*, Mexico, May 20th 2013.

[7] Environment and Natural Resources Program 2013-2018, *Official Journal of the Federation*, December 12th, 2013.

[8] National Development Plan 2013-2018, op. cit.

[9] Ibid.

[10] Environment and Natural Resources Program 2013-2018, op. cit.

[11] Ibid.

Mexico's National Water Law (NWL hereinafter) was adopted in 1992.[12] Despite several reforms (especially one in 2004) and the inclusion of some articles based on the solidarity principle, the NWL's language is not as ambitious as paragraph 6 Article 4 and does not guarantee the rights set out therein.[13] As for the NWL's Regulation,[14] it does not follow Article 4 either since, like the NWL, it is rather outdated. Both legal instruments therefore need to be amended taking into account various fundamental aspects that cannot be found in them or are not sufficiently developed.

Additionally, both legal instruments predate the Environmental Responsibilities Law,[15] the Transparency and Access to Governmental Public Information Act,[16] and the Climate Change General Law[17] and they do not include fundamental factors provided for in those laws, such as: the right to prior consultation or audience in case of potential damage to third-parties in water management; the process to the water delivery or assignation contest does not include environmental aspects; for water usage, the '*other productive activities usage*' does not consider activities of the utmost importance such as aquaculture, livestock, tourism, and other –mines; and the possibility to use economic tools such as fiscal, financial, and market instruments at the service of water management.

At the beginning of 2015, three years after the right to water was adopted into the Mexican Constitution, a new General Water Law was officially proposed. On 5 March 2015 the Drinking Water, Sanitation and Water Resources United Commission of the Chamber of Deputies Verdict on the Draft Decree was published.[18] The verdict recognises the need to make progress in the country 'towards an efficient and modern management composed by water resources that allow the compliance of the human right to water and that is inclusive and participative altogether[19]' The verdict also states that the policy objectives of the proposed General Water Law are 'adequate and consistent' with this need.[20] Moreover, the

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[12] National Water Law. *Official Journal of the Federation*, Mexico, December 1st 1992.

[13] García López, Tania and Travieso Bello, Ana Cecilia, *Law and Water Management* (Original version: Derecho y Gestión del Agua) *(2015*), Ed. Ubijus, México, at 14.

[14] Regulation of the National Water Law. *Official Journal of the Federation*, January 12th, 1994.

[15] Official Journal of the Federation, Mexico, June 7th 2013.

[16] Official Journal of the Federation, Mexico, June 11th 2002.

[17] Official Journal of the Federation, Mexico, June 6th 2012.

[18] Chamber of Deputies Parliamentary Gazette 4228-II edition.

'Drinking Water, Sanitation and Water Resources United Commission ' (March 5th 2015)

http://gaceta.diputados.gob.mx/PDF/62/2015/mar/20150305-II.pdf.

[19] Ibid.

[20] Ibid.

verdict appreciates that the proposed Law establishes 'the national goods and water to which provisions can be applied, later on, mention which are subject to law and, among these, which are authorities'.[21] The verdict recognizes, as well, that in terms of 'concessions to national water exploitation, usage or benefit, it is fundamental to redefine the rules to its consent, extension, transmission, rights, and obligations of the licensees, cancellation, extinction, and revocation of the concession titles, as well as to order the regulation in the field and avoid dispersion in the legislation. In addition to the aforementioned, it is warned that the concession granting system is aimed to protect and preserve the water resources by establishing measures designed to avoid monopolization, such as the prohibition to transmit rights that protect the concession during the first five years of its validity'[22] In short, it is a positive verdict that fully recommends the passing of this Law.

The project and the verdict have given rise to a chorus of criticism which led to the end of its discussion and consequently the law has not been approved to date. In Parliament the proposed law was rejected by left-wing parties, who claimed that the verdict aimed to reinforce water privatization and that its only beneficiaries would be private enterprises. In the same vein it was pointed out that the 'General Water Law discussed in the Chamber of Deputies has a 'repressing and privatizing' vision and it was created by the federal government to respond to the needs of big national and foreign enterprises that will exploit hydrocarbons, resulting in indigenous peoples' land dispossession'.[23]

Another major criticism[24] of the Project was that it

> *required only 50 litres of water to be given to each citizen whereas the World Health Organization states that, as a universal right, it should be 100 litres. Besides, any community or person that opposes any hydroelectric project or dam will be dispossessed by the security forces. Finally, academic studies of water will not be allowed if there is no permission by the CONAGUA (Mexican National Water Commission).*[25]

In addition to the above, the proposal was also criticized on the basis that fracking is encouraged; research is not allowed; water is concessioned; water pollution is 'legalized'; sanitation is omitted; and enterprise interests are prioritized over those of the citizens.[26.]

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[21] Ibid.

[22] Ibid.

[23] Becerril, 'Expert opinions on the General Law of Water ', *La Jornada, México,* March 8th, 2015.

[24] WHO guidance actually refers to 50-100 litres and UN documents too.

[25] Ibid.

[26] ¿Qué pasa con la Ley de Aguas en México?, *Ecoosfera*, México, March 2015.
Available at http://www.ecoosfera.com/2015/03/que-pasa-con-la-ley-de-aguas-en-mexico/).

In my opinion, most of this criticism has no basis and, even if the proposed Law can be improved and does not include or explore very important aspects,[27] it cannot be criticized under the above mentioned arguments.[28] It can, however, be criticized based on the aspects that are not considered in it.

First of all, the current NWL in Articles 9 and those following it, explains clearly how the Commission will be organized to perform its duties at the national and regional level, through basin organizations. It also details, quite rightly, the competencies of each level. However, the internal organization of the CONAGUA seems to disregard this. It is important to delete references to water administrative regions in new regulations. One of the main purposes of the new regulations must be the management of the country's water resources through the river basin perspective, in theory and practice.

Secondly, it would be appropriate to allow and encourage payment of fines through investments in projects previously approved by CONAGUA, in order to improve water infrastructure in the country. As pointed out by Becerra Pedrote:

> *The importance of commutation is that, on one hand, [it] enables the implementation of measures to protect the environment on those that, at first instance, violated environmental regulations; but also balances the intervention of the administrative authority and provides a stimulus to the development of clean technologies in many companies' production processes, reducing costs involved with inspection and surveillance procedures for the local community.*[29]

The fine commutation figure appears in Article 173 of the General Law on Ecological Balance and Environmental Protection (LGEEPA in its Spanish acronym). Since 1996, this has provided an option for individuals to make equivalent investments in the acquisition and installation of equipment to prevent pollution or investments in protection, preservation or restoration of the environment and natural resources, provided that the offender's obligations are guaranteed, that it does not involve any of the cases provided for in Article 170 of the LGEEPA and that the authority fully justifies its decision.

Finally, despite of the emphasis recently placed on the subject, the NWL lacks the legal bases necessary to promote water reuse. This could be achieved through economic instruments, namely through fiscal stimuli. According to the NDP, '[o]ne factor that has

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[27] Such as the ones related to economic instruments.

[28] See García López, Tania and Travieso Bello, Ana C., *Law and Water Management*, op. cit., at 18.

[29] Becerra Pedrote, J. (12 de agosto de 2014). La conmutación de multa: una alternativa para proteger al ambiente.
Available at http://www2.ine.gob.mx/publicaciones/libros/444/cap3.html.

significantly limited the development of the water sector is, undoubtedly, the under-investment and insufficient financing to expand, maintain and operate the country's water infrastructure and to carry out water governance functions.' Also, '[t]traditionally, taxation is a major funding source, which is clearly unsustainable and requires review of this scheme in order to increase financial flow and diversification of sources.' [30] Private and social investment in federal waterworks is critical to modernising the country's water infrastructure. Economic and financial instruments- such as bonds, warranties, deposits- are absolutely necessary in regulating these aspects.

It is indisputable that water, its management and the legal framework to govern its use and conservation are rather sensitive subjects and that public participation is a democratic and inevitable requirement. In the Mexican context, there is an urgent need to adopt regulations that replace the National Water Act and that allow water to be rationally managed in the country for the benefit of society.

[30] Diario Oficial de la Federación [Mexico Federal Official Gazette], April 8, 2014.

COUNTRY REPORT: NEPAL

Development of Environmental Law in 2015

Professor Amber Prasad Pant*

Introduction

Nepal faced some serious environmental challenges in 2015 arising out of the devastating earthquake of 25 April 2015 and the blockade by the United Democratic Madheshi Front (UDMF) in the Tarai-Madhesh area (motivated by objections to provisions of the new Constitution). It is impossible to estimate the environmental impacts of these events, with rehabilitation likely to take years.

Notwithstanding the challenges, 2015 has been a historical year for the environment in Nepal. The promulgation of a new Constitution with strong environmental safeguards fills Nepal's people with excitement and hope. Different political parties joined together to pass the Constitution by a majority of more than 85%. Other developments include law and policy refinements and noteworthy pronouncements by the Nepal Supreme Court. The following paragraphs provide an overview these developments.

Constitutional Safeguards

The Constitution of Nepal 2015[1] has extensive environmental safeguards. The safeguards are broad in scope, as 'environment' is defined by the *Environment Protection Act 1997* s 2(a) to include 'the interaction and interrelationship among the components of natural, cultural and social systems, economic and human activities and their components'. This is the only definition of 'environment' in Nepalese law, and the courts have interpreted its meaning in different contexts.

The 2015 Constitution is more comprehensive in incorporating environmental provisions than the prior two Constitutions.[2] Article 16(1) guarantees every person the right

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[1] The Constitution of Nepal, 2015 declared the country as secular, democratic, federal, and republic country based on parliamentary,multi-party and plural system.

[2] The Interim Constitution of 2007 had a provision of 'right to live in clean environment' for every person in Article 16(1) and right to live in dignity and personal liberty in sub-article 1 and 2of Article 12 respectively and State Policies on environmental in Article 35(5) .The Constitution of the Kingdom of

to live with dignity. Article 17(1) embodies the 'right to freedom', with the wording that 'no person shall be deprived of his or her personal liberty except in accordance with law'. These provisions are not new, and the Supreme Court has previously applied them to environmental rights in the absence of an explicit legal right to a clean environment.[3]

However, Article 30 of the 2015 Constitution now provides an explicit legal right to a clean environment:

> *Article 30: Right to Clean Environment*
> *Every citizen shall have the right to live in a clean and healthy environment.*
> *The victim shall have the right to obtain compensation, in accordance with law, for every injury caused from environmental pollution or degradation.*
>
> *This provision shall not be deemed to prevent the making of necessary legal provision for the proper balance between the environment and development in development works of the nation.*

This Article adds the word 'healthy' to the right to a clean environment, and also the right to get compensation for loss of this right. This is one step ahead of prior constitutional safeguards. What we must be aware of now is the potential for the spirit of this right to be sacrificed in the name of balancing the environment and development.

Article 51(g) addresses environmental policy:

> *Article 51: Policies of the State*
> *The State shall pursue the following policies…*
> *(g) Policies relating to protection, promotion and use of natural resources:*
> *To protect, promote and make environmental friendly and sustainable use of natural resources available in the country, in consonance with national interest and adopting the concept of intergenerational equity, and make equitable distribution of fruits, according priority and preferential right of the local communities.*

Nepal 1990 had a provision of personal liberty in Article 12 and State Policies on environment in Article 26(4).

[3] The 'right to life' and or 'personal liberty' were interpreted by Supreme Court in number of cases as also covering the right to live in clean environment. See Surya Prasad Sharma Dhungel on behalf of LEADERS Inc. vs. Godavari Marble Pvt. Ltd., NKP Golden Jubilee Special Birth Anniversary Special Issue, 1995(2052 B.S) at 169, 132-150; Advocate Prakash Mani Sharma and others vs. Council of Ministers and others, SC Bulletin vol. 262 at 10-12 and Bhoj Raj Aiyer vs. Ministry of Population and Environment, SC Bulletin vol. 235 at 10-12.

To make multi-purpose development of water resources, while according priority to domestic investment based on public participation.

To ensure reliable supply of energy in an affordable and easy manner, and make proper use of energy, for the fulfilment of the basic needs of citizens, by generating and developing renewable energy.

To develop sustainable and reliable irrigation by making control of water induced disasters, and river management.

To conserve, promote and make sustainable use of, forests, wildlife, birds, vegetation and bio-diversity, by mitigating possible risks of environment from industrial and physical development while raising awareness of general public about environment cleanliness.

To maintain the forest area in necessary land for ecological balance.

To adopt appropriate measures to abolish or mitigate existing or possible adverse environmental impacts on the nature, environment and biological diversity.

To pursue the principles of environmentally sustainable development such as the principles of polluter pays, of precaution in environmental protection and of prior informed consent.

To make adverse warning, preparedness, rescue, relief and rehabilitation in order to mitigate risks from natural disasters.

Another new Constitutional development is the distribution of environmental and natural resource power amongst Federal, State and Local level governments, separately and concurrently, with residual powers remaining with the Federation (Articles 57, 59). Schedules 5-9 provide a detailed list of environmental powers:

Schedule 5: List of Federal Power

7. International Treaties and agreements; international boundary rivers

11. Policies relating to conservation and multiple uses of water resources

12. Inland and inter-state electricity transmission lines

14. Central level large electricity, irrigation and other projects

18. Quarantine

23. Atomic energy, air space and astronomy

26. Mines excavation

27. National and international environment management, national parks, wildlife reserves and wetlands, national forest policies, carbon service

29. Land use policies, human settlement, environment adaptation

34. Sites of archaeological importance and ancient monuments

35. Any matter not documented in the lists of federal powers; state powers; local level powers; or in the concurrent list and any matter not specified in this constitution and in the federal laws

Schedule 6: List of State Powers

S.N Matters

7. State level electricity, irrigation and water supply services, navigation

17. Exploration and management of mines

18. Protection and use of languages, scripts, cultures, fine arts, and religions

19. Use of forests and waters and management of environment within the state

20. Agriculture and livestock development, factories, industrialization, trade, business, transportation

21. Management of trusts (Guthi)

Schedule 7: List of Concurrent Powers of Federation and State

S.N Matters

2. Supply, distribution, quality and monitoring of essential goods and services

9. Drugs and pesticides

13. State boundary, rivers, waterways, environment protection, biological diversity

15. Industries and mines and physical infrastructure

18. Water supply and sanitation

23. Utilization of forests, mountains, forest conservation areas, and water stretching in inter-state form

24. Land policies and laws relating thereto

Schedule 8: List of Local level power

S.N Matters

9. Basic health and sanitation

10. Environment protection and biodiversity

11. Irrigation

15. Agriculture and animal husbandry; agro- products management; and animal health

19. Water supply; small hydropower projects; alternative energy

20. Disaster management

21. Protection of Watershed, wildlife, mines and minerals.

22. Protection and development of languages, cultures and fine arts

Schedule 9: List of Concurrent Powers of Federation, States and Local Level

S.N Matters

4. Agriculture

5. Electricity, water supply, irrigation

7. Forests, wildlife, birds, water uses, environment, ecology and biodiversity

8. Rivers and minerals

9. Disaster management

12. Archaeology, ancient monuments and museums

The above Constitutional provisions dealing with different aspects of the environment show that the latest version not only guarantees the right to a clean and healthy environment, but also vests powers in the three levels of government. This tripartite system has yet to work effectively, but the requirement that all Nepalese governments protect the environment is now a Constitutional obligation.

Constitution Amendment Bill 2015

To accommodate the concerns of agitators in the Tarai-Madhesh region, the Legislature tabled the first amendment to the new Constitution in December 2015. The Bill is backed by three major political parties, namely the Nepali Congress (NC), Communist Party of Nepal United Marxist Leninist (CPN-UML) and the United Communist Party of Nepal (UCPN (Maoist)).

The Bill seeks to ensure proportional inclusion on elected government bodies, and makes population the major basis for delineating election constituencies. UDMF leaders have been demanding that the language of the Bill be more specific, and that the article on federal unit boundaries ensures at least two provinces in the Tarai-Madhesh. The neighbouring country, India, at first suggested the government take note of the concerns of the Tarai-Madheshbut. Now, with this new Bill, India is saying that the two outstanding issues of constituency delimitation and proportional representation have been addressed.[4] The Prime Ministers of Nepal and India had a telephone conversation on 31 December 2015. This is a positive indication that there will be a negotiated settlement with the UMDF, and that the Bill will succeed to amend the Constitution. If the Bill is agreed to, environmental protection will be improved along with the effective functioning of the 2015 Constitution.

Legal and Policy Framework

There have been some legislative, policy and institutional developments in 2015 that should lead to better environmental protections and noticeable environmental improvements.

Legal Framework

The latest law having a bearing on the environment is the *Reconstruction of Earthquake Affected Structures Act 2015*. The law was unanimously passed by Parliament on 16 December 2015, 235 days after the devastating earthquake. It was authenticated by the President on 20 December 2015.

[4]The Himalayan Times, 21 December 2015 at 3.

Prior to its passing, the law had been stuck in Parliament for more than two months, mainly due to a dispute between the NC and CPN-UML. The dispute concerned whether to retain Govinda Raj Pokharel as CEO of the all-powerful National Planning Commission.The previous NC government had appointed Raj Pokharel notwithstanding reservations from CPN-UML.[5] Now the NC is an opposition party, with CPN-UML heading the coalition government with support from the United CPN-Maoist and others. The dispute concluded on the 25 December 2015 when the new coalition party appointed Sushil Gyawali, an experienced civil engineer, as CEO of the newly formed National Reconstruction Authority. This Authority is responsible for post-earthquake infrastructure.[6] The appointment of an experienced engineer to this position should facilitate better progress in rebuilding efforts and help protect the environment.

Another law in 2015 was the *Amendment of 3 November 2015 to the United Nations Park Formation Order 1995*.The Amendment added sub-section I1 (*jha ek*) to Section 5. The sub-section provides for the development of the United Nations Park as a model environmentally-friendly park. Further, section 5 sub-section k (*Ta*) was substituted with the requirement that park officials work in cooperation with other relevant authorities to achieve this goal. This means, for example, that park officials must obtain bulldozers and other equipment for park and road construction from the Ministry of Urban Development, and the materials necessary for embankment and river control from the Ministry of Irrigation.[7]

Policy Framework

During 2015, Nepal introduced and implemented some important policy frameworks, plans, programs, guidelines and strategies.

The most recent policy framework is the 'Nature Conservation National Strategic Framework for Sustainable Development (2015-2030)',[8] released on 17 December 2015.[9] The Framework replaced the 'National Conservation Strategy of Nepal 1988'. The release of the Framework coincides with the replacement of the United Nations Sustainable Development Goals with the Millennium Development Goals (2000-2015). The Framework is not a strategy in itself, but an umbrella instrument that emphasizes the conservation of nature, sustainable use of natural resources and equitable distribution of their benefits. It will be in effect until 2030.

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[5]Ibid at 2.

[6]Ibid, 26 December 2015.

[7] Nepal Gazette number 26, vol. 25 November 2015.

[8] Government of Nepal, National Planning Commission, July 2015.

[9]Supranote 4, 18 December 2015.

The Framework asserts the following five strategic pillars: Mainstreaming nature sensitivity in development efforts; harmonization between sectoral strategies; coordination between agencies concerned; valuing and accounting ecosystem goods and services; and accountability in results of conservation. The goal is to help achieve sustainable development by integrating nature conservation into all development efforts.

Another relevant measure of 2015 was the implementation of the Government's three-year plan (the 'Thirteenth Plan 2014-2017').[10] The goal of the Plan is to lift Nepal's status from a least-developed country (LDC) to a developing country by 2022. Achievement is to be measured against at least two of three United Nations indicators, namely, Gross National Income, human assets and economic vulnerability. The Plan is an important instrument in the implementation of environmental policy because it recognizes a link between living standards and nature conservation.[11] For instance, the Plan aims to: reduce the number of people living below the poverty line to 18 percent; increase tiger populations from 155 in 2010 to over 300 in 2022; increase populations of rhinoceros (635) and wild buffalo (259) by 50 percent by 2025; and maintain forest cover at 40% of total landmass.

Implementation of the Plan has created some division in the nature conservation sector, especially concerning the following matters: integration of environment and conservation into development programmers; participatory approaches in community forestry; limited access of the poor and Indigenous peoples to conservation areas; and promotion of natural resources, such as water, land, forest and minerals etc.

Another notable development in 2015 was the Government declaration that 2015-2024 be the 'Forest Decade for Conservation'. In line with this declaration, the Government formulated and endorsed the 'Forest Policy'. While preparing the Policy, the Government also revised the 'Forest for Prosperity' concept, declared in 2012, and existing policies and programs, such as the 'Revised Forestry Master Plan 1989', 'Leasehold Forest Policy 2001', 'National Wetland Policy 2012', 'National Biodiversity Strategy and Implementation Planning 2014-2020', 'Medicinal and Non-Timber Forest Product Development Policy 2003', 'Procedure for Using the Forest Land for Other Purposes 2005', 'Climate Change Policy 2011', 'Three Years Periodic Plan 2014-2017'.

Point 10 of the Forest Policy explicitly requires sustainable forest management, and the implementation of mitigation and adaptation measures to protect Nepalese forests from the adverse effects of climate change. For sustainable forest management, the Forest Policy contains a strategy to promote public participation and the maintenance of 40% of the country's land as forest area. These goals are to be achieved through the development and

[10]Above (n 8) at 8.

[11]Ibid at 9.

expansion of community-based forest management. To mitigate the adverse effects of climate change, the Policy envisioned a strategy to strengthen the capacity of local communities to mitigate, adapt and withstand the adverse effects of climate change. These goals are to be achieved through the expansion of carbon sequestration areas.[12]

Another important development in 2015 was the introduction of the 'Health Care Waste Management Guidelines'.[13]The Guidelines aim to ensure that there are no adverse health and environmental consequences from the handling, storage, treatment and development of waste generated and discharged from hospitals, clinics, pharmacies, dispensaries, blood banks, pathologies, laboratories, veterinary clinics and health research centers. The Guidelines set minimum standards for the safe and efficient management of such waste in order to reduce exposure to employees, patients, and attendants. It is expected that these measures will lead to the greater segregation of health care waste (currently at 38.7%) and the end of dumping untreated waste at the Okharpauwa dumping site.

Since the earthquake, the Government of Nepal has made some policy shifts regarding the construction of houses. These led to the introduction of some new construction measures. For example, on 9 October 2015, the Cabinet approved the grant of up to 200,000 rupees (approximately $USD1850) to the owners of around 490,000 private houses destroyed by the quake. The CEO of the National Reconstruction Authority can provide additional economic relief to victims on the basis of data provided by the Central Bureau of Statistics.[14] The government is also distributing 10000 rupees to all earthquake victims, with the target to complete the work of distributing relief by the beginning of January 2016.

A seven member Steering Committee, led by the CEO of the National Reconstruction Authority, was assigned responsibility to oversee works related to the reconstruction of private residential houses.[15] On 18 December 2015, the Department of Urban Development and Building Construction published a design catalogue for the reconstruction of earthquake resilient houses. The catalogue provides households with clear guidance on earthquake resilient construction techniques and helps them design their houses in compliance with the National Building Code.[16] This should help ensure the building of houses that are safe, adequate and affordable. It is not mandatory to select a design from the catalogue, but designs must comply with the National Building Code.

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[12] Government of Nepal, Forest Policy, 2015.

[13]Above (n. 4), 22 November 2015.

[14]Ibid.

[15]Ibid, 26 November 2015.

[16]Ibid, 18 December 2015.

In 2015, the Department of Urban Development and Building Construction also introduced the 'Guidelines for Approval for Operation of Earthquake Affected Buildings 2015'.[17]The Guidelines are applicable to construction, repair/maintenance, recovering and retrofitting of government buildings, apartments, private and government hospitals, nursing homes, schools, departmental stores, shopping malls, cinema halls, theatres and hotels. The owners of these premises must obtain a safe operation license from the District Office of the Department of Urban Development and Building Construction to be eligible for a loan from a bank or other financial institutions. The Guidelines state that applications for licenses will be examined and verified by a 3-member team, headed by a divisional engineer. Inspections will involve on-site visits and the examination of quality assurance documents.

Another recent policy of the Government concerns energy. The 'Energy Policy 'promotes alternative sources of energy and the improvement of crippling power shortages. Any new residential house built on more than 232.2 square meters of land, and other buildings built on more than 317.9 square meters of land, must install a solar panel with a capacity of 1500 watts if the land receives at least five hours of sunlight a day. If energy consumption is more than 1500 watts, at least 25 percent of the total energy needs must be met through solar power.[18]

On 17 December 2015, the Parliamentary Environment Protection Committee issued a Directive to the Government concerning alternative energy technologies. To the Ministry of Population and Environment, the Committee directed an increase in subsidies for rooftop solar panels in urban areas. The Committee directed the Ministry of Federal Affairs and Local Development to find a common stance on the promotion of green and eco-friendly technology.[19] The Committee directed the Government to encourage, use and make operation of eco-friendly vehicles by revising the *Motor Vehicle and Transport Management Act 1993* section 39(2). The current provision bars modification of vehicles into eco-friendly. The Committee directed the Government to similarly amend the 'Environment Friendly Vehicle and Transport Policy 2014'. The Committee directed the Council of Ministers to carry out a detailed study on the operation of trolley bus, tram, monorail, cable car, ropeway and railway. Additionally, the Committee urged the National Planning Commission to prioritize construction of ropeway, cable car, trolley buses, monorail and railway.

On 31December 2015, Nepal Telecom (NT) and the Ministry of Agricultural Development signed a pact to provide agro-climatic information to farmers. Under this pact, NT will develop a mobile application called 'Our Agriculture' ('HamroKrishi'). The application

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[17]Ibid, 28 December 2015.

[18]Ibid, 23 December 2015.

[19]Ibid, 16 December 2015.

will provide information easily to users of Android phones and bring into service a toll free number to relay information. It will also provide farmers with notices and agriculture information via text messaging.[20]

Institutional Setup

On 24 December 2015, the Cabinet split two ministries into three. The Ministries of Health and Population; and the Ministry of Science, Technology and Environment were split into the Ministry of Health, Ministry of Population and Environment, and Ministry of Science and Technology.[21] Institutionally, the Ministry of Population and Environment now has overall responsibility for the environment. The other ministries handle environmental issues within their mandate.

The other key institution created after the devastating earthquake was the National Reconstruction Authority (NRA). The Authority is responsible for rehabilitation and reconstruction in environmentally-friendly ways, and for distributing relief amounts.

Judicial Pronouncements[22]

Judgments of the Nepal Supreme Court in 2015 emphasized that environmental conservation, preservation and protection is not optional; it is obligatory. Public interest litigation in environmental matters was well supported by judicial statesmanship in 2015, as before.

One important judgment was *Padam Bahadur Shrestha on his own and as President representing Environmental Development and Conservation Legal Forum* v. *Kathmandu Metropolitan and Others*.[23] In this case, the petitioner sought a Supreme Court Order to make the Kathmandu Metropolitan City remove visual pollutants. The petitioner claimed that illegal hoarding boards have marred the city's beauty and posters and pamphlets put up in public places constitute waste under the *Solid Waste Management Act2011*. The Supreme Court firstly issued an interim order to the City to maintain a clean environment in the City. The final order of 2 September 2015 directed the City to maintain the civilized appearance of the metropolis and remove visual pollutants caused by different forms of hoarding boards in core areas of the capital.

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[20] Ibid, 1 Jan, 2016.

[21] Ibid, 25 December 2015.

[22] The full texts of the judgments covered under this heading have not yet published.

[23] Judgment delivered on 2 September2015 by Right Honorable Chief Justice Kalyan Shrestha and Honorable Justice Om Prakash Mishra, see Gorkhapatra of 3 September 2015.

Another important judgment was delivered on 16 April 2015 in *Prakash Mani Sharma on his own and representing Pro-Public and others v. Ministry of Population and Environment and Others*. The petitioner sought orders to protect the environment in Godavari being destroyed and polluted by Godavari Marble Industries and to close the business down. The court in the first instance comprised two judges that gave different orders. The Honorable Justice Sharada Shrestha issued an order to close the business because of their failure to protect the environment. The Honorable Justice Tahir Ali Ansari dismissed the claim, saying that the business is prepared to protect the environment through future plans and environmental management systems. The different judgments meant the case was automatically referred to a full bench. In the meantime, the government extended the operating license of Godavari Marble for another 10 years. The full bench of the Supreme Court delivered an important judgment on 16 April 2015: the Court directed the Government to shut down Godavari Marble Industries.[24] The court annulled the operating license and ordered the Government not to lease the marble quarry in the future.[25]

Conclusion

This country report shows that during 2015, environment protection in Nepal has remained a priority. A range of measures have been developed for the protection, conservation and preservation of environment. Further, the right to a clean and healthy environment has been assured by the new Constitution, other laws and decisions of the Supreme Court. This makes the environment constitutionally, legally and judicially protected. What Nepal needs to do now is implement these protections properly and effectively.

[24]The Kathmandu Post, 17 April 2015.

[25]Republica, 17 April 2015.

COUNTRY REPORT: NEW ZEALAND

Fresh Water Allocation: Property Rights, Non-Derogation from Grant and Legitimate Expectation

Trevor Daya-Winterbottom*

Background

Fresh water allocation has been a significant issue in New Zealand, particularly in the rich agricultural regions of the South Island, for over a decade, and has given rise to significant litigation before the superior courts.[1] For example, in the Canterbury region there is competition for access to fresh water between agriculture and hydro electricity generation, and between agricultural users in terms of their needs for irrigation. In part, this results from land use change with the conversion of sheep and beef farms to dairy farms. During the period 2002-2012 dairy farming inceased by 28 percent.[2]

Absent any clear legal or policy direction in the framework *Resource Management Act* 1991 (RMA), the courts have been required to determine critical questions regarding the legal effect of resource consents and priority of access to scarce fresh water resources between competing applications. This situation has been hampered by slow progress in the preparation of national policy statements (NPS) by the Minister for the Environment, with the NPS regarding fresh water management only being made operative as recently as 2011.[3] Similarly, progress has also been slow in terms of regional plan preparation, with Ministerial intervention and special purpose legislation being required to complete the Canterbury regional plan process in a timely way.[4]

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[1] Aoraki Water Trust v Meridian Energy Ltd (2005) 2 NZLR 268 (HC); Central Plains Water Trust v Ngai Tahu Properties Ltd (2008) NZRMA 200 (CA); Central Plains Water Trust v Synlait Ltd [2010] 2 NZLR 363 (CA).

[2] Ministry for the Environment and Statistics New Zealand, *Environment Aotearoa 2015* (Ministry for the Environment, Wellington, October 2015) <www.mfe.govt.nz>.

[3] National Policy Statement for Freshwater Management 2011 [NPS-FM 2011]. A replacement National Policy Statement for Freshwater Management 2014 [NPS-FM 2014] took effect on 1 August 2014.

[4] Ministry for the Environment, *Investigation of the performance of Environment Canterbury under the Resource Management Act & Local Government Act* (Ministry for the Environment, Wellington,

This country report focuses on the legal issues regarding property rights, non-derogation from grant and legitimate expectation in the context of resource consents for the take and use of water arising from the recent Court of Appeal decision in *Hampton v Canterbury Regional Council*.[5]

Existing Law Prior to *Hampton*

The issue of freshwater allocation came sharply into focus in *Aoraki Water Trust v Meridian Energy Ltd*.[6] The background to the case was that Meridian held resource consents relating to its hydroelectricity generation scheme that allowed it to dam the natural outflow from Lake Tekapo in the Waitaki catchment in the South Island, and to divert up to 130m^3 of water per second into a canal for generation purposes. Aoraki sought resource consent to take up to 15m^3 of water per second from the lake for irrigation purposes. It was clear that allowing Aoraki to take water from the lake would have an adverse effect on Meridian by reducing the available flow. But the law under the RMA was uncertain. Did the consents held by Meridian present an insuperable obstacle to Aoraki, as a matter of law under the RMA? To decide this question, the High Court decision in *Aoraki* considered the nature of resource consents. For example, does the grant of consent confer a privilege or a right on the consent-holder?

Under the *Water and Soil Conservation Act* 1967 (repealed and restated by the RMA), the Town and Country Planning Appeal Board had found that the grant of a water right did not provide a guarantee for extraction of the volume of water allowed to be taken. The legal effect of granting the water right was simply to render lawful what would otherwise have been unlawful absent the grant of consent. Subsequently, in *Auckland Acclimatisation Society Inc v Sutton Holdings Ltd*,[7] the Court of Appeal defined water rights as 'privileges'. Based on the previous law, Aoraki contended that the legal effect of granting a water permit under the RMA simply conferred a privilege on the consent-holder, and not an exclusive right that could be used to prevent other persons from taking or using fresh water from the same resource. Meridian on the other hand contended that its consents were not 'privileges' or bare licences, but were 'rights' that 'could not be derogated from or diminished by issue of a further water permit to a third party'[8] The High Court was persuaded by the combination of

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February 2010); Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2010; Maree Baker 'A watershed moment in Canterbury for water management in New Zealand' (August 2010) RMJ 20.

[5] (2015) NZCA509 (2 November 2015).

[6] 2 NZLR 268 (2005) (HC).

[7] 2 NZLR 94 (1985) (CA).

[8] Trevor Robinson "What's in an Allocation?" [(March 2005]) RMJ 21 at 22.

property rights and public law arguments put forward by Meridian. Key matters that influenced the Court's judgment were the requirement in s 7(b) of the RMA to have regard to the efficient use and development of natural and physical resources, and the concession made by Aoraki that allowing it to take water from the lake would.'devalue' Meridian's interest in the water. The Court held:[9]

> *In our judgment, granting a water permit for a particular volume of water over a specified period of time commits the consent authority to that grant in the sense that it is not entitled to deliberately erode the grant unless it is acting pursuant to specific statutory powers. The relevant factors applying in this public law context are similar to those underlying non-derogation of grant. In situations where the consent authority's commitment represents a full allocation of the resource … the grantee … must reasonably expect to proceed with planning and investment on the basis that the consent authority will honour its commitment. Indeed, refusal to recognize that expectation would seriously undermine public confidence in the integrity of water permits*. (underline added)

Property Rights Following *Hampton*

The Court of Appeal decision in *Hampton*,[10] concerned the judicial review of the grant of resource consent for the take and use of water in the Chertsey groundwater zone in the Canterbury region of the South Island.

Previously, a series of resource consents had been granted to Simon Hampton for the purpose of irrigating farms owned by Simon Hampton and his cousin Robert Hampton. Notwithstanding the purpose of the consents, Simon Hampton was the sole consent holder under the RMA. The water volume allocated for the farm owned by Simon Hampton (427,000m^3) had been transferred to the owners of other land in the same catchment, but due to a disagreement between the cousins the water volume allocated for irrigating the farm owned by Robert Hampton (350,000m^3) remained unused. As a result, Robert Hampton applied for the grant of a separate resource to take and use the same water volume for the purpose of irrigating his farm.

In response, Simon Hampton commenced judicial review proceedings. He contended that the grant of consent for the same water volume to Robert Hampton (350,000m^3) would affect his rights to change the consent conditions either to allow this water volume to be used for the purposes of irrigating his own farm, or to transfer any unused water to other land owners in the same catchment. He asserted that this would result in a financial loss of

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[9] *Aoraki* (n 6) at 41.

[10] NZCA (2015) 509.

up to $560,000. In his view, his cousin should either pay the market price to access the water or do without. Effectively, Simon Hampton relied on the *Aoraki* decision.

The independent commissioner who made the delegated decision for the regional council was not persuaded by this argument. He found that the grant of consent would not reduce the water volume available for irrigating Simon Hampton's farm, because the grant of consent to Robert Hampton effectively represented a 're-allocation' of the water (350,000m^3) already allocated for irrigating his land. On review, the High Court was not persuaded that the grant of consent to Robert Hampton would derogate from the consent held by Simon Hampton, because:[11]

The consent granted to Robert Hampton expressly recognised the prior consents granted to Simon Hampton, and included a condition that prevented the water volume (350,000m^3) from being used by Robert Hampton in the event that Simon Hampton was able to use that water volume pursuant to his consent at any time in the future (if allowed via the change of consent conditions).

The condition included on the grant of the consent held by Simon Hampton, that specified that the disputed water volume (350,000m^3) could only be used for the purposes of irrigating Robert Hampton's farm, had been included at the request of Simon Hampton.

While the Court acknowledged that Simon Hampton could apply to the regional council for the change of consent conditions under s 127 of the RMA to enable him to use this water volume, it noted that his applicantion for change of the conditions had been placed on hold by the regional council at his request.

Any arguments about derogation from the consent held by Simon Hampton were therefore found to be premature, and the High Court dismissed the application for judicial review.[12]

Court of Appeal Decision

The judicial review then came before the Court of Appeal. The Court noted that in order for Simon Hampton to take and use the disputed water volume (350,000m^3) he would need to obtain further consents under ss 127 and 136 of the RMA. In particular, the Court observed that any applications for the change of consent conditions or for the transfer of the water to other persons in the same catchment would require a full assessment of any environmental effects (including any effects on established activities), and would also need to comply with

[11] *Hampton* (n 5) at 49 - 61.

[12] Ibid at 58.

any relevant regional plan provisions.[13] Given the discretionary nature of these consent processes it could not therefore be 'assumed' that 'consent would inevitably' be granted.[14] As a result, the Court considered that it was 'unrealistic' for Simon Hampton to rely on the doctrine of legitimate expectation.[15]

The Court then turned to consider the principle of non-derogation from grant. It noted that the High Court in *Aoraki* found that the grant of unlimited permits would not be consistent with the comprehensive licensing system established by the RMA, that the 'first in time' rule under existing case law conferred substantive priority for the successful applicant to use the resource, that the legal nature of the right conferred by the resource consent was 'analagous to a licence coupled with … a profit à prendre', and that the principle of non-derogation against grant applied to 'all legal relationships which confer a right in property' [16] However, the Court found the previous reasoning in *Aoraki* regarding the legal nature of the consent to take and use water, and the application of the non-derogation from grant principle, 'problematic' in a resource management context. In particular, the Court observed that at common law there was no property right regarding water, that statutory rights to control water have been limited (inter alia) to the right to take and use water which 'falls short of providing … a property right', and that s 122 of the RMA expressly provides that a resource consent 'is neither real nor personal property'. As a result, the Court found that the RMA regime conferred only limited 'property-like rights' on consent holders – for example, the ability to register a resource consent under the *Protection of Personal and Property Rights Act* 1988, to grant a charge over a consent, and to transfer the consent to other persons 'in certain circumstances'[17]

Overall, the Court found that the RMA 'did not seek to create a world in which consents could be freely traded', that the 'market value of a water permit must reflect … the restrictions upon alienation'[18] and that the regional council was not obliged under the RMA to 'protect the economic interests' of consent holders.[19] While departing from *Aoraki* in these respects, the Court was careful to emphasise that the 'first in time' principle provided ample

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[13] Ibid at 84 - 85.

[14] Ibid at 86.

[15] Ibid at 87.

[16] Ibid at 92– 97; *Fleetwing Farms Ltd v Marlborough District Council* [1997] 3 NZLR 257 (CA) which applied the "'first in time" ' rule to processing competing resource consents applications for the same resource.

[17] Ibid at 105; RMA, s 122(2) (c), s 122(3), s 136.

[18] Ibid at106.

[19] Ibid at 107.

justification (in substantive terms) to refuse the grant of subsequent resource consent applications where the resource in question has been 'fully allocated', and that it did 'not suggest the wrong result was reached' in that case.[20] As a result, the Court held that resource consent granted to Robert Hampton was appropriately granted, and would not result in any 'further depletion' in the Chertsey groundwater allocation zone.

Supreme Court Decision

Subsequently, Simon Hampton sought leave to appeal the Court of Appeal decision to the Supreme Court.[21] In particular, he wished to dispute the findings of the Court of Appeal that the grant of resource consent to Robert Hampton did not cause 'any detriment', and that the grant of the original resource consent did not confer a 'property' right. Specifically, Simon Hampton took issue with the reasons given by the Court of Appeal regarding its criticism of the *Aoraki* decision.[22] However, the Supreme Court did not consider that this issue was a matter of public importance as the Court of Appeal had clearly stated that it agreed with the outcome in *Aoraki*:[23]

We do not see this issue as justifying the grant of leave. There is room for debate about the justification for the criticisms of the *Aoraki* decision in the Court of Appeal's judgment in this case, but, as those criticisms do not undermine the *Aoraki* decision itself, we do not consider that a matter of general importance is raised by this ground.

In relation to the question of priority between the subsequent applications made by Robert and Simon Hampton, the Supreme Court noted that for Simon Hampton to succeed on this point he:[24]

> …*would have to argue that his application should receive priority despite the fact that he lodged the application after Robert, had no ability to use the water allocation at the time the application was made and voluntarily placed the application on hold for several years.*
> *While the Supreme Court accepted that the Fleetwing approach to priority had not been fully considered by the Court, it found that the "first in time" principle was not "directly" engaged in Hampton and thus declined to grant leave for appeal based on this ground*[25]

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[20] Ibid at 108.

[21] Hampton v Canterbury Regional Council (2016) NZSC50.

[22] Ibid at 6.

[23] Ibid at 7.

[24] Ibid at 8.

[25]Ibid at 9; Ngai Tahu Property Ltd v Central Plains Water Trust (2008) [2008] NZSC 49; Ngai Tahu Property Ltd v Central Plains Water Trust (2009) [2009] NZSC 24.

This Court granted leave in an earlier case that placed in issue the *Fleetwing* principle, but that case settled before the substantive appeal had been determined. We accept that this is an issue of general or public importance. But we do not see the facts of the present case as directly engaging the *Fleetwing* principle and for that reason we do not consider that granting leave for the purpose of allowing that issue to be argued would be in the interests of justice in this case.

Finally, the Supreme Court was not persuaded that legitimate expectation was 'arguable' in the context of *Hampton* either in relation to the grant of the subsequent consent to Robert Hampton, or in relation to Simon Hampton's ability to change the conditions of the original consent.[26] As a result, leave to appeal was dismissed.

Commentary and Conclusions

Successive New Zealand governments have struggled to establish a coherent legal regime under the RMA for managing fresh water. Despite an ongoing debate facilitated by the non-statutory Land and Water Forum since 2009, recurring issues regarding priority to fresh water allocation continue to persist. The situation has not been improved by NPS-FM 2014 due to the long time-period set for compliance (31 December 2025), and the need for the NPS to be transposed by changes to all regional plans.

While the Supreme Court did not need to engage with property rights, non-derogation from grant, or priority for the allocation of scarce resources raised by the appeal in *Hamilton*, arguably leaving these issues for determination on a subsequent occasion is unlikely to add clarity to the current state of the law. For example, it is clear from both the approved grounds for appeal and the interim judgment in *Ngai Tahu*,[27] that the Supreme Court is dissatisfied with the substantive effect of the *Fleetwing* priority principle and that it favours a principled exercise of discretion as opposed to what was described by Joseph Sax as a procedural 'traffic' rule.[28] Similarly, Hammond J observed in *Ngai Tahu* at the Court of Appeal stage that there was no 'fundamental' reason why substantive priority should be decided by applying a procedural rule.[29]

Finally, Sax also noted the 'paradox' that while fresh water cannot, due to its physical characteristics be owned, irrigators and other water users 'need property-like entitlements' in

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[26] Ibid at 10.

[27] *Ngai Tahu* (2008) (n 25); *Ngai Tahu* (2009) (n 25) at 1.

[28] Joseph L Sax, 'Our precious water resources: learning from the past, securing the future' (2009) RM Theory & Practice 30, 41.

[29] *Ngai Tahu,* (n 1) at 97.

fresh water in order to provide for their economic and social well-being.[30] It appears that the Supreme Court was not entirely convinced by the criticisms levelled at *Aoraki* by the Court of Appeal in *Hamilton*. The failure to grapple with these issues is a missed opportunity to nudge informed debate about them 'in the court of public opinion, or in Parliament'.[31] Ultimately, substantive statutory reform will be required.

[30] Sax, above n 28 at 30.

[31] *Taylor v Attorney-General* [2015] NZHC 1706 at 71 per Heath J.

COUNTRY REPORT: SPAIN

Lucía Casado Casado*

Introducción

La actividad normativa desarrollada en España por el Estado durante el período objeto de análisis (noviembre de 2014 a noviembre de 2015) ha sido amplia y han visto la luz un buen número de normas en materia ambiental, tanto de rango legal como reglamentario. En este periodo ha proseguido la oleada de reformas legislativas en materia ambiental que viene acompañándonos los últimos años. Entre las normas de rango legal, cabe destacar especialmente la aprobación de la Ley 30/2014, de 3 de diciembre, de parques nacionales; y de las leyes de modificación de la Ley 42/2007, de 13 de diciembre, del patrimonio natural y la biodiversidad, y de la Ley 43/2003, de 21 de noviembre, de montes (Leyes 33/2015, de 21 de septiembre y 21/2015, de 20 de julio, respectivamente), sin olvidar que también se producen algunas modificaciones puntuales en las Leyes de responsabilidad ambiental y de calidad del aire y protección de la atmósfera (a través de la citada Ley 33/2015, de 21 de septiembre). También la reforma del Código Penal, acometida por la Ley Orgánica 1/2015, de 30 de marzo, es de gran importancia en materia ambiental, habida cuenta que supone la introducción de importantes novedades en la regulación de los delitos contra los recursos naturales y el medio ambiente y de los delitos relativos a la protección de la flora, fauna y animales domésticos.

Como viene siendo habitual, también se han aprobado en estos meses varias normas reglamentarias en ámbitos sectoriales diversos (aguas, residuos, producción ecológica…), en algunos casos para cumplir exigencias derivadas del derecho de la Unión Europea. Muchas de estas normas tienen el carácter de legislación básica en materia de medio ambiente. Quizá lo más destacable sea, en materia de aguas, la aprobación del Real Decreto 198/2015, de 23 de marzo, por el que se desarrolla el artículo 112 bis del texto refundido de la Ley de Aguas y se regula el canon por utilización de las aguas continentales para la producción de energía eléctrica en las demarcaciones intercomunitarias, y del Real Decreto 817/2015, de 11 de septiembre, por el que se establecen los criterios de seguimiento y evaluación del estado de las aguas superficiales y las normas de calidad ambiental; en materia de residuos, del Real Decreto 180/2015, de 13 de marzo, por el que se regula el traslado de residuos en el interior del territorio del Estado, y del Real Decreto

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710/2015, de 24 de julio, por el que se modifica el Real Decreto 106/2008, de 1 de febrero, sobre pilas y acumuladores y la gestión ambiental de sus residuos; y, en materia de producción ecológica, del Real Decreto 833/2014, de 3 de octubre, por el que se establece y regula el Registro General de Operadores Ecológicos y se crea la Mesa de coordinación de la producción ecológica.

En el ámbito de la planificación, lo más destacable es el inicio del segundo ciclo de planificación hidrológica (2015-2021), basado en la revisión de los planes hidrológicos aprobados en el primer ciclo de planificación (2009-2015), para dar cumplimiento a la Directiva marco de aguas. En los últimos meses se han sometido a consulta pública las propuestas de proyecto de revisión de los Planes Hidrológicos de las diferentes demarcaciones hidrográficas para el ciclo 2015–2021. También están en proceso de elaboración, en cumplimiento de la Directiva 2007/60 de evaluación y gestión de los riesgos de inundación, los planes de gestión del riesgo de inundación. En los últimos meses también se han sometido a consulta pública los proyectos de planes de gestión del riesgo de inundación correspondientes a diferentes demarcaciones hidrográficas. Y, en aplicación de la Ley de evaluación ambiental, se han sometido a evaluación ambiental, habiéndose formulado ya diferentes declaraciones ambientales estratégicas conjuntas de los planes hidrológicos y de gestión del riesgo de inundación de diferentes demarcaciones hidrográficas para el período 2016-2021.

La Actividad Normativa Desarrollada Por El Estado En Materia Ambiental

Novedades en la regulación de los delitos contra los recursos naturales y el medio ambiente y en los delitos relativos a la protección de la flora, fauna y animales domésticos

La aprobación de la Ley Orgánica 1/2015, de 30 de marzo, por la que se modifica la Ley Orgánica 10/1995, de 23 de noviembre, del Código Penal, supone la introducción de importantes novedades en la regulación de los delitos contra los recursos naturales y el medio ambiente y de los delitos relativos a la protección de la flora, fauna y animales domésticos.

En cuanto a los delitos contra los recursos naturales y el medio ambiente, se han modificado, dentro del Capítulo III del Título XVI, los artículos 325, 326, 327 y 328 del CP y se ha introducido un nuevo precepto, el artículo 326 bis. El artículo 325, que incluía el tipo básico del delito ecológico, recoge, en su apartado primero, un nuevo delito en el que se tipifican agresiones contra el medio ambiente supuestamente menos graves que las contempladas ahora en su apartado segundo (actual art. 325, aunque con algunas modificaciones importantes) y que no se hallaban tipificadas como delito. Con arreglo al artículo 325.1, ‘Será castigado con las penas de prisión de seis meses a dos años, multa de diez a catorce meses e inhabilitación especial para profesión u oficio por tiempo de uno a

dos años el que, contraviniendo las leyes u otras disposiciones de carácter general protectoras del medio ambiente, provoque o realice directa o indirectamente emisiones, vertidos, radiaciones, extracciones o excavaciones, aterramientos, ruidos, vibraciones, inyecciones o depósitos, en la atmósfera, el suelo, el subsuelo o las aguas terrestres, subterráneas o marítimas, incluido el alta mar, con incidencia incluso en los espacios transfronterizos, así como las captaciones de aguas que, por sí mismos o conjuntamente con otros, cause o pueda causar daños sustanciales a la calidad del aire, del suelo o de las aguas, o a animales o plantas'. En el artículo 325.2 se recoge, por una parte, como tipo básico la realización de las mismas conductas enumeradas en el artículo 325.1 si estas conductas, 'por sí mismas o conjuntamente con otras, pudieran perjudicar gravemente el equilibrio de los sistemas naturales', supuestos en que se impondrá una pena de prisión de dos a cinco años, multa de ocho a veinticuatro meses e inhabilitación especial para profesión u oficio por tiempo de uno a tres años. Como puede apreciarse, las conductas son las mismas tanto en el apartado primero del art. 325 como en su apartado segundo, de manera que las diferencias entre uno y otro estriba en el resultado exigido en cada caso (bien causar o poder causar daños sustanciales a la calidad del aire, del suelo o de las aguas, o a animales o plantas; bien poder perjudicar gravemente el equilibrio de los sistemas naturales) y también en las penas previstas, mayores en el segundo caso. Por otra parte, el artículo 325.2, en su párrafo segundo, recoge un tipo agravado, en los supuestos en que 'se hubiera creado un riesgo de grave perjuicio para la salud de las personas', para los cuales se prevé la pena de prisión en su mitad superior, pudiéndose llegar hasta la superior en grado.

El artículo 326 del CP también resulta sustancialmente modificado. Este precepto recoge ahora los delitos relacionados con la gestión ilegal de residuos, anteriormente recogidos en el artículo 328. El nuevo artículo 326 recoge casi literalmente el contenido de las letras b) y c) del artículo 3 de la Directiva 2008/99/CE del Parlamento Europeo y del Consejo de 19 de noviembre de 2008, relativa a la protección del medio ambiente mediante el Derecho penal.

El nuevo artículo 326 bis regula las conductas que con anterioridad a la reforma de 2015 se tipificaban en el artículo 328.2. Este precepto castiga con las penas previstas en el artículo 325, en sus respectivos supuestos, a 'quienes, contraviniendo las leyes u otras disposiciones de carácter general, lleven a cabo la explotación de instalaciones en las que se realice una actividad peligrosa o en las que se almacenen o utilicen sustancias o preparados peligrosos de modo que causen o puedan causar daños sustanciales a la calidad del aire, del suelo o de las aguas, a animales o plantas, muerte o lesiones graves a las personas, o puedan perjudicar gravemente el equilibrio de los sistemas naturales'.

Las circunstancias agravantes se contemplan en el artículo 327 del CP y pueden

aplicarse a todas las conductas incluidas en los artículos 325, 326 y 326 bis, en cuyo caso serán castigadas con la pena superior en grado.

El artículo 328 del CP incluye ahora el régimen de la responsabilidad penal de las personas jurídicas por la comisión de delitos contra el medio ambiente y los recursos naturales, que también resulta modificado.

Por lo que respecta a los delitos relativos a la protección de la flora, fauna y animales domésticos, incluidos en el Capítulo IV del Título XVI del Código Penal, la Ley Orgánica 1/2015 modifica los artículos 332, 334, 335, 337 y 337 bis. La modificación de los artículos 332 y 334 se justifica, al igual que la reforma de los delitos recogidos en los artículos 325 a 328 del CP, en una adecuada transposición de la Directiva 2008/99/CE. El artículo 332 recoge ahora como conducta punible cortar, talar, arrancar, recolectar, adquirir, poseer o destruir especies protegidas de flora silvestre, o traficar con ellas, sus partes, derivados de las mismas o con sus propágulos, contraviniendo las leyes u otras disposiciones de carácter general, salvo que la conducta afecte a una cantidad insignificante y no tenga consecuencias relevantes para el estado de conservación de la especie. También contempla como conducta punible destruir o alterar gravemente su hábitat, contraviniendo las leyes u otras disposiciones de carácter general. Dos son las principales novedades: la ampliación del objeto material del delito, dada la sustitución del término de especie amenazada por el de ‘especies protegidas de flora silvestre’, de mayor alcance; y la introducción del castigo de la comisión por imprudencia grave.

En cuanto al artículo 334, castiga a quien, contraviniendo las leyes u otras disposiciones de carácter general: a) cace, pesque, adquiera, posea o destruya especies protegidas de fauna silvestre; b) trafique con ellas, sus partes o derivados de las mismas; o, c) realice actividades que impidan o dificulten su reproducción o migración. También a quien, contraviniendo las leyes u otras disposiciones de carácter general, destruya o altere gravemente su hábitat. Las modificaciones son similares a las recogidas en el artículo 332, por lo que se sustituye la referencia a especies amenazadas por la de especies protegidas de fauna silvestre y también se prevé el castigo por la comisión por imprudencia grave.

El artículo 335 del Código Penal también ha sido modificado para introducir, en su apartado segundo, el marisqueo furtivo como una modalidad típica equiparada a la caza y pesca furtivas.

Por último, la Ley Orgánica 1/2015 también introduce cambios significativos en relación con la protección de los animales domésticos. Las novedades más relevantes son la incorporación de la falta de maltrato del artículo 632 del CP como subtipo atenuado del artículo 337 del CP; la configuración de la antigua falta de abandono de animales del artículo 631.2 del CP como delito leve del artículo 337 bis; y la desaparición de la conducta prevista como falta en el antiguo artículo 631.1. CP, en relación con la custodia de animales

feroces y dañinos.

La nueva Ley de parques nacionales

La Ley 30/2014, de 3 de diciembre, de parques nacionales, tiene por objeto 'establecer el régimen jurídico básico para asegurar la conservación de los parques nacionales y de la Red que forman, así como los diferentes instrumentos de coordinación y colaboración' (art. 1). Se trata de una Ley dictada al amparo de los dispuesto en el artículo 149.1.23 CE, que atribuye al Estado la competencia en materia de legislación básica de protección del medio ambiente –con la salvedad de los artículos 32 y 13, adoptados al amparo de los arts. 149.1.13 y 149.1.29 CE, respectivamente–, y con un contenido predominantemente competencial que, aunque contiene algunos cambios, no introduce modificaciones relevantes en el modelo preexistente.

Entre los cambios más destacables, cabe mencionar el aumento de la superficie mínima necesaria para que un espacio pueda ser declarado parque nacional en el territorio peninsular; las modificaciones en el procedimiento de declaración de los parques nacionales; la inclusión de una cláusula indemnizatoria por cualquier privación en los bienes y derechos patrimoniales, en particular sobre usos y aprovechamientos reconocidos en el interior de un parque nacional en el momento de su declaración; la ampliación hasta 2020 de la moratoria para la supresión de la caza y otras actividades incompatibles en los parques nacionales; el establecimiento de algunos organismos e instrumentos jurídicos para favorecer la coordinación efectiva de la Red de Parques Nacionales en su conjunto y facilitar la labor de coordinación que corresponde al Estado (Comité de Colaboración y Coordinación de Parques Nacionales, Comisiones de Coordinación, intervención de la Administración del Estado en caso de conservación desfavorable de un parque nacional, declaración del estado de emergencia por catástrofe medioambiental…); y la especial atención dedicada a las medidas para el desarrollo territorial sostenible de las áreas de influencia socioeconómica.

La modificación de la Ley 42/2007, de 13 de diciembre, del patrimonio natural y de la biodiversidad

La Ley 33/2015, de 21 de septiembre, que entró en vigor el pasado 7 de octubre, ha modificado la Ley 42/2007, de 13 de diciembre, del patrimonio natural y de la biodiversidad. Esta Ley, tal y como se pone de manifiesto en su Preámbulo, tiene como objeto mejorar ciertos aspectos de la aplicación de esta Ley, especialmente en lo que se refiere a la gestión de los espacios protegidos. Asimismo, pretende garantizar la correcta aplicación del derecho internacional y la incorporación de la normativa de la Unión Europea en el ordenamiento jurídico español. En este sentido, las modificaciones que introduce van en la

línea de adecuarse, por un lado, a lo dispuesto en la Convención de Naciones Unidas sobre el derecho del mar, de Montego Bay, de 10 de diciembre de 1982, ratificada por España el 20 de diciembre de 1996, y en el Protocolo de Nagoya sobre el acceso a los recursos genéticos y participación justa y equitativa en los beneficios que se deriven de su utilización, ratificado por España el 3 de junio de 2014 y en el Reglamento (UE) n.º 511/2014 del Parlamento Europeo y del Consejo, de 16 de abril de 2014, relativo a las medidas de cumplimiento de los usuarios de dicho Protocolo en la Unión, así como perfeccionar la incorporación de la Directiva de Hábitats y de la Directiva 2009/147/CE del Parlamento Europeo y del Consejo, de 30 de noviembre de 2009, relativa a la conservación de las aves silvestres en nuestro ordenamiento jurídico. También se persigue incorporar en nuestro ordenamiento los principales objetivos de la Estrategia de la Unión Europea sobre la biodiversidad hasta 2020.

Entre las novedades más significativas que se introducen, destacamos que se especifican las competencias que corresponden a la Administración General del Estado en lo que se refiere a la gestión del medio marino, teniendo en cuenta la reciente jurisprudencia constitucional; se acomete la simplificación y agilización de los instrumentos para el conocimiento y planificación del patrimonio natural y de la biodiversidad, regulados en el título I de la Ley 42/2007; se introduce un nuevo capítulo III en el Título I, relativo a la Estrategia estatal de infraestructura verde y de la conectividad y restauración ecológica; se introducen una serie de modificaciones con el fin de mejorar la gestión de los espacios protegidos y, en particular, de los incluidos en la Red Natura 2000, para garantizar su mejor protección y adecuación a los fines para los que han sido declarados; se introduce un nuevo capítulo VI del título II, relativo a la incorporación de la información ambiental en el Registro de la Propiedad; se introducen algunas modificaciones que afectan a la prevención y control de las especies exóticas invasoras, a la Red española de reservas de la biosfera, y al Fondo para el Patrimonio Natural y la Biodiversidad; y se incluyen una serie de modificaciones destinadas a la adaptación de la normativa nacional al Protocolo de Nagoya sobre el acceso a los recursos genéticos y participación justa y equitativa en los beneficios que se deriven de su utilización, y otras encaminadas a reforzar la responsabilidad de las Administraciones públicas en lo que se refiere a la conservación de la biodiversidad.

Novedades en la regulación de los montes

La Ley 21/2015, de 20 de julio, que entró en vigor el pasado 21 de octubre, modifica la Ley 43/2003, de 21 de noviembre, de montes, con el fin, como se pone de manifiesto en su Preámbulo, de ‘tener el mejor instrumento posible para la gestión sostenible de las masas forestales españolas’, teniendo en cuenta que han transcurrido más de diez años desde su aprobación y que conviene mejorar y adaptar determinados aspectos de su regulación y

que, además, es preciso ajustarse a lo dispuesto en las Sentencias de Tribunal Constitucional 49/2013, de 28 de febrero, 84/2013, de 13 de abril y 97/2013, de 23 de abril.

Son muchas y variadas las modificaciones introducidas por esta Ley en la ordenación jurídica de los montes. Entre las más significativas, destacamos la consideración, como un nuevo principio inspirador de esta Ley, de los montes como infraestructuras verdes, ya que constituyen unos sistemas naturales prestadores de servicios ambientales de primer orden. Además, la norma perfecciona el equilibrio entre los tres pilares de la gestión forestal sostenible: el económico, el ecológico y el social. También reconoce el concepto de funcionalidad de los montes, en tanto que los montes, independientemente de su titularidad, desempeñan una función social relevante, tanto como fuente de recursos naturales y sustento de actividades económicas como por ser proveedores de múltiples servicios ambientales, entre ellos, de protección del suelo y del ciclo hidrológico, de fijación del carbono atmosférico, de depósito de la diversidad biológica, y como elementos fundamentales de la conectividad ecológica y del paisaje. Asimismo, se sistematizan las facultades y competencias que corresponden a la Administración General del Estado derivadas del vigente marco constitucional y se acomete una simplificación de la planificación de la gestión forestal sostenible respecto de los montes de superficie reducida.

La novedad más polémica es en relación con el cambio de uso forestal, ya que, si bien con carácter general se mantiene la prohibición expresa del cambio de uso durante 30 años en un terreno incendiado, se añaden algunas excepciones. Con carácter singular, las comunidades autónomas podrán acordar excepciones a estas prohibiciones siempre que, con anterioridad al incendio forestal, el cambio de uso estuviera previsto en un instrumento de planeamiento previamente aprobado; un instrumento de planeamiento pendiente de aprobación, si ya hubiera sido objeto de evaluación ambiental favorable o, de no ser esta exigible, si ya hubiera sido sometido al trámite de información pública; o una directriz de política agroforestal que contemple el uso agrario o ganadero extensivo de montes no arbolados en estado de abandono. Asimismo, con carácter excepcional las comunidades autónomas podrán acordar el cambio de uso forestal cuando concurran razones imperiosas de interés público de primer orden que deberán ser apreciadas mediante ley, siempre que se adopten las medidas compensatorias necesarias que permitan recuperar una superficie forestal equivalente a la quemada.

La Jurisprudencia Ambiental

A nivel jurisprudencial, el último año ha sido especialmente prolífico en cuanto a sentencias del Tribunal Constitucional en materia de protección del medio ambiente. Se han dictado numerosas Sentencias que han contribuido a delimitar el alcance de las competencias

estatales y autonómicas en materia de protección del medio ambiente en ámbitos sectoriales diversos. Destacamos entre todas ellas las sentencias relativas al *fracking* y a la reforma de la Ley de costas.

El fracking de nuevo ante el Tribunal Constitucional

Tras las Sentencias 106/2014, de 24 de junio y 134/2014, de 22 de julio, en la la Sentencia 208/2014, de 15 de diciembre, el Tribunal Constitucional ha vuelto a pronunciarse sobre las competencias autonómicas en materia de *fracking*, a raíz del análisis de la constitucionalidad de la Ley Foral 30/2003, de 15 de octubre, del Parlamento de Navarra, que prohibía en el territorio de estas Comunidad Autónoma el uso de la fractura hidráulica como técnica de investigación y extracción de gas no convencional. Como era previsible, el Tribunal Constitucional ha reiterado la jurisprudencia sentada en sus dos pronunciamientos anteriores para concluir, nuevamente, que la Comunidad Foral de Navarra se había extralimitado en sus competencias.

Queda ahora pendiente el pronunciamiento del Tribunal Constitucional sobre la prohibición del *fracking* en Cataluña. A diferencia de Cantabria, La Rioja y Navarra, que habían prohibido en su territorio de forma directa el *fracking*, la opción de Cataluña ha sido diferente. El artículo 167.1 de la Ley catalana 2/2014, de 27 de enero, de medidas fiscales, administrativas, financieras y del sector público, modifica el artículo 47, apartado 10, del Decreto Legislativo 1/2010, de 3 de agosto, mediante el que se aprueba el texto refundido de la Ley de urbanismo, e incorpora una prohibición indirecta del *fracking* en Cataluña. Con arreglo a este precepto, en la explotación de recursos naturales en suelo no urbanizable, en el caso de aprovechamientos de hidrocarburos, no está permitido utilizar la tecnología de la fractura hidráulica cuando pueda tener efectos negativos sobre las características geológicas, ambientales, paisajísticas o socioeconómicas de la zona, o con relación a otros ámbitos competenciales de la Generalitat. De esta forma, en Cataluña se incorpora una prohibición indirecta del uso de esta técnica, a diferencia de la opción seguida por otras comunidades autónomas. Sin embargo, contra la Ley 2/2014, de 27 de enero, interpuso recurso de inconstitucionalidad el Presidente del Gobierno, recurso que el Tribunal Constitucional acordó admitir a trámite mediante Providencia de 18 de noviembre de 2014, produciéndose la suspensión de la vigencia y aplicación de los preceptos impugnados desde la fecha de interposición del recurso (30 de octubre de 2014) para las partes del proceso, y desde la publicación del correspondiente edicto en el BOE para los terceros. Recientemente, el Tribunal Constitucional, mediante Auto de 17 de marzo de 2015, ha levantado la suspensión del artículo 167.1 de la Ley 2/2014, de 27 de enero. De este modo, el Tribunal Constitucional actúa de forma diferente a como lo había hecho en los recursos

de inconstitucionalidad presentados contra las Leyes prohibitorias del *fracking* de Cantabria, La Rioja y Navarra. En estos casos, cuando correspondía al Alto Tribunal adoptar la decisión en torno al mantenimiento o levantamiento de la suspensión de estas normas, la opción fue la de dictar ya la Sentencia correspondiente resolutoria del recurso, declarando la inconstitucionalidad de tales leyes autonómicas. En cambio, en el caso de Cataluña, la opción ha sido levantar la suspensión del artículo 167.1 de la Ley 2/2014, posponiéndose para el futuro la resolución del recurso. Habrá que esperar, en consecuencia, algunos años, para tener un pronunciamiento sobre la constitucionalidad de la prohibición indirecta del *fracking* recogida en el texto refundido de la Ley de urbanismo. Mientras tanto, el artículo 47 del texto refundido de la Ley de urbanismo sería susceptible de ser aplicado.

La reforma de la Ley de costas ante el Tribunal Constitucional

Recientemente, el Tribunal Constitucional se ha pronunciado, en la Sentencia 233/2015, de 5 de noviembre, sobre la polémica reforma de la Ley 22/1988, de 28 de julio, de costas, a través de la Ley 2/2013, de 29 de mayo. En esta Sentencia, avala la constitucionalidad de la nueva regulación de las costas introducida en 2013 en relación con las siguientes cuestiones: la remisión al reglamento de la concreción de los criterios que fijan los límites de la zona marítimo-terrestre; la exclusión de dicha zona de los terrenos que sean inundados artificial y controladamente, siempre que los mismos no fueran de dominio público antes de la inundación; la fijación de una anchura de 20 metros para las zonas de servidumbre de protección en determinados tramos; la diferenciación, en las zonas de playa, entre tramos naturales y urbanos, confiriendo a los primeros un mayor nivel de protección; la prórroga de las concesiones demaniales; y la exclusión del dominio público de aquellas zonas de las urbanizaciones marítimo-terrestres destinadas a ‘estacionamientos náuticos’.

Por el contrario, declara la inconstitucionalidad y nulidad de las disposiciones relativas a la exclusión de aquellos enclaves privados que, encontrándose en zona de dominio público marítimo-terrestre, se hubieran inundado artificial y controladamente ‘aun cuando sean naturalmente inundables’; al deslinde de la isla de Formentera, por cuanto establece criterios específicos, diferentes a los aplicados con carácter general, para delimitar la zona marítimo-terrestre y sus playas de la isla de Formentera; y a la regulación de la garantía de funcionamiento temporal de depuradoras que deben cambiar de emplazamiento por resolución judicial.

Por último, la sentencia efectúa una interpretación conforme a la Constitución de la exclusión de determinados núcleos de población del dominio público marítimo-terrestre, que son los que figuran en los anexos de la ley impugnada, señalando que su recto

entendimiento no comporta la inaplicación del completo régimen jurídico previsto por la ley para la desafectación de aquellos bienes de dominio público que hubieran perdido las características naturales que determinaron su inclusión en el dominio público marítimo-terrestre en virtud de deslindes anteriores. La ley, señala la sentencia, se limita a identificar dichos núcleos de población pero no excluye la verificación, en cada caso, de que dicha pérdida determina también que ya no son necesarios para la protección o utilización del dominio público, operaciones que requieren la adopción de las correspondientes resoluciones administrativas, siempre susceptibles, además, de control jurisdiccional.

COUNTRY REPORT: TAWAIN

The New Climate Change Law in Taiwan

Ying Shih Hsieh*

Introduction

Taiwan officially released its Greenhouse Gas Reduction and Management Act on 1 July 2015. The country also announced Taiwan's Intended Nationally Determined Contributions (INDCs), which specify its greenhouse gas reduction goals, in September 2015.[1] What type of changes will this Act bring about in Taiwan? Is it going to help reduce greenhouse gas (GHG) emissions and promote sustainable development in Taiwan? Can it provide a reference for other countries? The focus of this report is to investigate these questions and answer them accordingly.

Climate Change in Taiwan

Although Taiwan is not a party to the United Nations Framework Convention on Climate Change (UNFCCC), its contributions to global carbon emissions are rather significant. Taiwan's total GHG emissions in 2014 reached 2.5661 million tons, which placed it 24th in the world, producing 0.8% of total global emissions, while its per capita GHG emission was 10.95 tons (20th in the world).[2]

Not only is Taiwan a major carbon emitter, the country is also highly vulnerable to the impacts of climate change. Taiwan is frequently affected by earthquakes and tropical storms as it is situated at the boundaries of the Philippine sea-plate and the Eurasian continental plate. It also lies on typhoon paths of the west Pacific. The World Bank pointed out in 2005 that only 5% of the areas in the world, covering about 35 areas and regions, face 3 types of

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[1]Taiwan EPA announced Taiwan INDC on 17 September 2015:
http://enews.epa.gov.tw/enews/fact_Newsdetail.asp?InputTime=1041117174044.

[2]Statistics from the Environmental Protection Administration:
http://www.epa.gov.tw/ct.asp?xItem=10052&ctNode=31352&mp=epa.

compound disasters[3]. Over 90% of Taiwan is subject to 2 types of disaster, while up to 73% is subject to 3 types of compound disaster.[4] The first natural disaster and sovereignty related credit rating report released by Standard & Poor's in 2015 also listed Taiwan as one of the 10 most vulnerable states in the world due to its frequent incidence of natural disasters.[5] Given the link between climate change and natural disasters, Taiwan recognizes the importance of addressing climate change not only to meet its international obligations but also to protect the next generation of Taiwanese people.

The Legislative Passage of the Greenhouse Gas Reduction and Management Act[6]

Taiwan is one of the few countries (others including the UK and Mexico) that have established a law dedicated to this issue. President Ma Ying-Jeou will be completing his term in May 2016. During his 2nd Term, President Ma proposed 4 laws governing GHG emissions in 2009, namely the Renewable Energy Development Act, Energy Administration Act, Greenhouse Gas Reduction and Management Act, and Energy Tax Bill[7]. Of these, the Renewable Energy Development Act and Energy Administration Act were promulgated in July 2009, while the Greenhouse Gas Reduction and Management Act was promulgated in July 2015. Only the Energy Tax Bill remains under legislative review due to the wide extent and scope of the interests affected.[8]

The EPA of Taiwan (EPA) began drafting the *Greenhouse Gas Reduction Act* in 2005. The draft was reviewed and passed by the Executive Yuan and submitted to the Legislative Yuan in September 2006. It took 10 years to approve the Act after it was drafted.[9] This delay was a result of several reasons, namely: (1)failure to identify the agency responsible for controlling total emissions (4 competent authorities were named in the initial draft, namely the EPA, the Ministry of Economic Affairs (MOEA), the Executive Yuan National Sustainable Development Network (NSDN), and Greenhouse Office of the MOEA (GO-MOEA)); (2) the government's objection to setting up a carbon reduction goal and time

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[3] The term ‘compound disasters’ refers to typhoons, earthquakes and mudslides.

[4]World Bank: http://www.gvm.com.tw/Boardcontent_11196.html.

[5]Report by Standard & Poor's: http://ppt.cc/iFIb2.

[6]Reference for the legislative process:
http://ir.lib.ntnu.edu.tw/retrieve/49802/metadata_10_01_s_05_0065.pdf.

[7]President Ma Ying-Jeou's words: http://www.epochtimes.com/b5/15/9/16/n4528999.htm.

[8]Relevant discussions on the Energy Tax Bill: http://e-info.org.tw/node/110513.

[9]Process for passing the GHG Act: http://e-info.org.tw/node/108525.

table; and (3) differences in opinion among the incumbent parties, and the opposition on matters of GHG emission inventory review, verification, carbon offset and carbon trading systems.

In 2009, Taiwan encountered the worst floods since 1959 caused by Typhoon Morakot.[10] Multiple areas in Taiwan were inundated and were struck by landslides and debris-flow. The disaster was highlighted by the catastrophic destruction of Siaolin Settlement in Siaolin Village, JiaxianTownhip, Kaohsiung County (now Kaohsiung city). It was here that 474 people perished from being buried alive by the flow of debris. Official statistics showed that 681 people died and 18 went missing due to the flood.[11] It was during this period that the government quickly discussed adjusting the Draft from climate mitigation to climate safety. A draft for the Climate Safety Act was initiated by legislator Cheng Li-wen to highlight the importance of the impacts of climate change.[12]

On 15 June 2015, the draft finally passed the third reading by the Legislative Yuan and was renamed as Greenhouse Gas Reduction and Management Act (hereafter the GHG Reduction Act). The EPA was authorized as the competent authority for the Act, the contents of which include emission reduction objectives and timetables, adopting a carbon trading system as the main reduction measure, and adaptation concepts.

Basic Summary of the GHG Reduction Act

The legislative purpose of the Act is to stipulate a strategy for coping with the impacts of climate change, to reduce and manage GHG emissions, to attain environmental justice, to meet Taiwan's responsibilities for protecting the planet's environment, and to ensure sustainable development of the country.

The most important clause of the GHG Act is to establish a law governing emission reduction objectives. Article 4 of this Act stipulates that the long-term national GHG emission reduction goal shall be to reduce GHG emissions to no more than 50% of 2005 GHG emissions by 2050. This goal, however, may be adjusted in a timely manner by taking into consideration the UNFCCC and its agreements.

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[10] Typhoon Morakotlanded Taiwan in the midnight of August 8, 2009, was the deadliest typhoon to impact Taiwan in recorded history.

[11] Typoon Morakot report: http://ppt.cc/mp0J9.

[12]Climate Safety Act: http://e-info.org.tw/node/50803.

The central competent authority for this Act is the EPA, while municipal, county, and city governments serve as the local authorities.[13]Despite the fact that the EPA is the central competent authority of this Act, GHG reduction and climate change adaptation shall involve multiple ministries and departments governing energy, industries, land, and transportation. Hence, Article 8 of the Act stipulates that the Executive Yuan shall invite central government agencies, NGOs, experts and scholars to determine and review task integration and division amongst various agencies.

The EPA shall formulate national action guidelines in responding to climate change and action plans for driving GHG reduction. Before doing so, it must be referred to Taiwan's economy, energy supplies, environment situations, current international trends and allocation of responsibilities by the Executive Yuan and consult with the central industry competent authorities. The action guidelines and action plans shall be implemented after approval from the Executive Yuan.[14]The action guideline shall be reviewed once every five years. Action plans shall also include items such as setting periodic regulatory goals, implementation timetables, implementation strategies, expected benefits, and an evaluation mechanism.[15]

Analysis

GHG Reduction Method

The leading method in the Act for GHG reduction is the carbon trading system. The implementation procedure requires the government to first establish an inventory mechanism. Annual accounting of emission volumes shall be carried out every year and registered to the emission source account established in the specified information platform.[16] The central competent authority will set up the emission goal in different stages for the regulated emission sources and allocate the emission allowance to all emission sources with free auction or through placing a price.[17]

In terms of the Act, an entity provided with an allocation may not generate more emissions than the emission allowance provided in its account within a period of time

[13]Art. 2.

[14]Art. 9 Para. 1.

[15]Art. 9 Para. 2.

[16]Art. 16.

[17]Art. 20 Para.1.

specified by the EPA.[18] If the said entity generates more emissions than the emission allowance, additional emissions must be procured via trading or other methods to offset the amount of GHG emissions exceeding its allowance.[19]

Additionally, the act specifies that:

> *The central competent authority shall work in conjunction with the central industry competent authorities to determine regulations regarding the allowance of the entity, the eligibility, approach and processes of allocation, the approaches of auction or sale, revocation and termination of emissions allowances*.[20]

Due to the vagueness of the act, the said entity might expect the allowance will be based upon to the average amount of the emissions before the specifications are taken into account. It might lead to excessive emissions (over-production) by the said entities to obtain additional allowances.

An entity that intends to procure carbon credits through trading must prioritize domestic sources first. Carbon credits procured from overseas sources may not exceed one-tenth of the entity's total allowances.[21]

An entity that fails to surrender the designated amount of allowances within the deadline shall pay a monetary penalty amounting to three times the carbon market price for any exceeding amount to a maximum of NT$ 1500 per ton. The EPA shall, in conjunction with the central industry competent authorities, set, regularly review, and publicly announce the carbon market price by taking into consideration the domestic and international carbon market trading prices.[22]

Analysis of the Reduction Goal

The reduction goals stipulated by the GHG Act are to reduce emissions to 50% of 2005 levels by 2050(equivalent to 122.5 million tons).[23] Carbon reduction goals and time tables were once opposed by government. Now this goal is well-defined in the law. Past

[18]Art. 21 Para. 1.

[19]Art. 21 Para. 2.

[20]Art. 20 Para. 7.

[21]Art. 21 Paras. 3 & 4.

[22]Art. 28.

[23]Art. 4.

observations have shown that carbon reduction goals publicly announced by the Taiwanese government have undergone constant fluctuations. Establishing carbon reduction goals by law can greatly enhance the consistency of emission reduction efforts. Is the goal considered excessively demanding or under-demanding in terms of Taiwan's global responsibilities and national capabilities? There are conflicting views with respect to this question.[24] However, the problem remains -what degree of temperature is this goal trying to reach? There is still a lack of sufficient scientific data on this determination.

Further, since Taiwan is not a party to the UNFCCC what is the reason for stipulating carbon reduction standards within national legislation? The reduction goals of the *GHG Reduction Act* may be regarded as a sufficiently clear provision of national responsibility. In 1989, the Grand Justices Council in Taiwan provided the constitutional interpretation No. 469 by saying that:

> *The stipulation of law is not confined to the powers granted to the national authorities in the execution of public affairs, but the purpose of which is to protect the life, body health, property and other interests of the citizen as well. ……the failure to discharge public servant's duties by reason of deliberateness or negligence has resulted in harm to the liberty or rights of the identifiable persons, the victim thereunder may claim compensatory damage.*[25]

Thus, under the Taiwanese legal system, it may even be regarded as a subjective right of the public. Given these legal implications the scientific methods and accuracy for stipulating the reduction goals become extremely important.

In terms of its INDCs, it was announced in September 2015, 'e*missions shall be reduced to 50% of BAU by 2030, which is equivalent to 20% of 2005 (195 million tons)*.' This is close to President Ma's 2008 commitment of '*returning to 2000 emission levels (214 million tons) by 2025*.' These commitments show that Taiwan's INDCs are extremely conservative and lack any novelty. No further commitments have been made despite technological advancements or increasing severity of climate changes. More details will be shown below.

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[24]Please refer to: http://e-info.org.tw/node/108400.

[25]Full context of constitutional interpretation No. 469:
http://www.judicial.gov.tw/constitutionalcourt/EN/p03_01.asp?expno=469.

The Problems of ETS in Taiwan

Fluidity and efficiency could be two key elements of a successful emissions trading market. If the market scale is not big enough, very few big participants can affect prices dramatically. However, such low trading volumes would reduce the willingness of other industries or financial entities to participate in the market.[26]

The economic structure in Taiwan has shown that up to 97% (or 1.3 million) Taiwanese companies are small and medium-sized enterprises (SMEs)[27] with a paid-in capital of less than NT$ 100 million or employ less than 50 individuals.[28] The total emission of all companies in Taiwan is 180 million tons, and about one quarter of this comes from SMEs[29] (45 million tons). This means that the average emissions of SMEs per year is only 34 tons of GHG. Such trivial volumes for transaction make it questionable if the benefits will outweigh the administrative costs.

Furthermore, many of Taiwan's industries have high energy densities. We can foresee that the allocation of carbon emission allowance in the future would be concentrated on a handful of major emission sources, i.e. Taiwan Power Company, Chinese Petroleum Corporation, China Steel Corporation etc. The top 10 sources of carbon emission accounted for 85% of the whole industry, while the top 3 accounted for 75%. Under this circumstance, there is doubt about the necessity of establishing a high administrative cost carbon market in Taiwan.[30]

Assuming the price of a Voluntary Emissions Reduction (VERs) is US$ 5 per ton, the scale of the carbon trading market in Taiwan may reach US$ 780 million (about NT$ 23.4 billion) by the 4th year[31], according to the analytic report of Chung Hua Economic Research in 2009. However, this year amount is far below the TAIEX centralized market value in one

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[26]Design and assessment of market policies and package measures for carbon reduction goals in Taiwan: http://www.aec.gov.tw/webpage/policy/plans/files/plans_04_e-102_18.pdf.

[27] Taiwan's SMEs reach record heights:
http://www.appledaily.com.tw/appledaily/article/finance/20130927/35322988/

[28]Or less than NT$ 80 million in paid-in capital or employ less than 200 individuals for manufacturing, construction, mining, or quarrying companies.

29Carbon reduction problems with SMEs :
http://www.taiwan-panorama.com/tw/show_issue.php?id=201049904020c.txt&table1=0%cur_page=2&distype=text.

[30]Design and assessment of market policies and package measures for carbon reduction goals in Taiwan: http://www.aec.gov.tw/webpage/policy/plans/files/plans_04_e-102_18.pdf

[31]ETS research from Chung-Hua Institution for Economic Research (2009).

trading day. It may reduce the willingness of financial institutions to participate the carbon emission trading market.[32]

Although the GHG Act has yet to directly authorize the government to stipulate a regulated carbon trading price, the Penalty Provisions of the GHG Act specify that when calculating the emission source account balance at the end of the year, any account with an allowance below zero must pay a monetary penalty amounting to three times the carbon market price per metric ton and the cap of the penalty will not exceed to the maximum of NT$ 1500 per metric ton. In other words, the upper limit of the carbon trading price in Taiwan would be NT$ 1500. If carbon prices are beyond this limitation, the entities would prefer to the penalty instead of purchasing allowance to reduce costs. To set a cap on the carbon trading price, however, is contradictory to the call for establishing a globally uniform carbon price and is severely restrictive to the potential of growth for carbon trading prices[33].

Fossil Fuels and Power Generation

Given that the GHG Reduction Act has set up the total amount of the emission reduction goal, it is critical to monitor the ways to achieve it. The Act divides emission sources into five sectors, which are energy, manufacturing, transportation, residential and commercial, and agriculture.[34] The EPA sets up the 5 years goal for each sector in consultation with the central industry competent authorities.

Where does this division come from? On 5 January 2016, the EPA released the Preliminary Reductions Action Guideline Report. The contents of this report are worrisome. It narrowed the scope on the fuel combustion (87% of total GHG emissions) only, and excluded emissions from manufacturing process (8%) and other greenhouse gases resources (5%) except CO2. It seems to ease the burden of the energy sector.

The reason was in the method of emission calculation of each sector. EPA has adopted the ‘sharing power consumption by various sectors’ method, which counts emissions from power users rather than the power generation sectors. As a result, the emissions of the energy sector decreased from 66% to 10%, while residential and commercial sector increased to 26% from 2.6%.

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[32]Design and assessment of market policies and package measures for carbon reduction goals in Taiwan: http://www.aec.gov.tw/webpage/policy/plans/files/plans_04_e-102_18.pdf.

[33]Please refer to:http://ppt.cc/MDNrN.

[34]Art. 9 Para. 3.

The power generation structure in Taiwan shows that 34% of Taiwan's electricity is generated by coal, 31.1% by natural gas, 18.8% by nuclear energy, and 4.5% by renewable energy sources.[35]Currently, most of Taiwan's power is generated from burning coal.

Under the method of 'sharing power consumption by various sectors', the efficiency of coal-fired power plants will be ignored and diluted so that the focus of emission reduction responsibility will be inappropriately transferred to the households, consumers and other electricity end-users. It could severely slow energy transformation in Taiwan, and the carbon reduction policy will remain focused on the level of 'switching off lights' and 'use less air conditioning'. Moreover, carbon reduction from the residential and commercial sector does not mean that the energy sector would reduce power generation. Any spare capacity would eventually be taken up by industrial sectors to enhance the economic growth.

To promote energy transformation, article 5 of the Act specifies that:

> *To ensure the nation's energy security, the government shall initiate mid and long-term strategies for gradually reducing the dependence on fossil fuels and in the meanwhile to regulate a mid and long-term aim of renewable energy policies to realize of the vision of a nuclear-free homeland.*[36]

According to this provision, fossil fuel and nuclear energy will be replaced by renewable energy in the long-term.

Given the above, if Taiwan does not set a clear proportion and timetable for the development of renewable energy, it is very hard to see the achievement of the goal of a low carbon future.

Conclusion

After decades of legislative drafting, the GHG Reduction Act was eventually adopted on 1 July 2015. Taiwan is one of the few countries that have established a law dedicated to fighting climate change. However, a number of issues remain unresolved, such as: the reduction objectives lack sufficient scientific based methods, and Taiwan's industrial structure may not be suitable for the introduction of carbon trading schemes. All of the above are the issues the Act will encounter in the near future.

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[35]MOEA power structure (2013): http://anuclear-safety.twenergy.org.tw/Faq/index_more?id=82.

[36]Art. 5.

Is a new climate law more antipyretic? People always think that a new law is a symbol of progress, but will this hold true for the GHG Reduction Act? On 9 May 2012, the EPA formally listed six major GHGs as air pollutants regulated under the air pollution law. However, in the past 3 years, the EPA has not established any emissions standards for those GHGs. Instead, government has attempted to reduce the burden of the energy sector, especially the responsibility of coal power plants. A Chinese proverb states that 'Acts method is not sufficient by their own.' Although it is not easy to pass a new climate change act, we still need to examine the new act very carefully. If the pattern of development is not likely to adjust, the policy of energy transformation is not aggressive, political will to achieve the goals of the act is lacking, and innovation fails to take place, we cannot expect a bright future even though the new climate law has been legislated.

COUNTRY REPORT: THAILAND

Thailand's Struggle with Enforcing Environmental Law

Andre de Vries

As of December 2015 Thailand continues to be governed by a military government with elections planned no sooner than 2017. In spite of this, official government websites of the Courts of Justice and the Administrative Court indicate that these Courts are functioning,[1] and that local government offices are fully staffed. On several occasions armed forces of national government offices have stepped in on illegal environmental activities in National Parks and the fishing industry. These so called 'crackdowns' were covered by national television and newspapers like the Bangkok Post.[2]

At the international level Thailand has been the recipient of outspoken criticism of its ability to comply with its international environmental obligations. The European Commission gave Thailand a 'yellow card' for clear deficiencies in the fight against Illegal, Unreported and Unregulated (IUU) fishing. In a press release the European Commission specifically mentioned Thailand's deficient legal framework, enforcement measures and administrative arrangements, as an important reason for the Commission's decision.[3] The U.S. State Department TIP Report into human trafficking and slavery has downgraded Thailand and the IUCN advised the World Heritage Committee to put one of Thailand's natural World Heritage Sites on the 'Endangered List'.

This country report focuses events in one of Thailand's National Parks which constitutes a World Heritage Site which highlight deficiencies in the Thai Legal Framework

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[1] Courts of Justice Thailand http://www.coj.go.th/en/index.html and Administrative Court Thailand http://www.admincourt.go.th/amc_eng/login_eng.aspx.

[2] http://www.bangkokpost.com/print/421689.

[3] EU Press Release 21 April 2015 http://europa.eu/rapid/press-release_MEMO-15-4807_en.htm.

and administrative arrangements that impact on Thailand's ability to enforce environmental law. [4]

Situation in Thap Lan National Park

Over 400 cases against resorts and farmers in and around the Thap Lan National Park area, which is part of the Natural World Heritage Site 'Dong Phayayen-Khao Yai Forrest Complex' (DPYKY-FC) for *inter alia* illegal logging and wrongful land use have been prosecuted. Yet only a small number of court orders to remove the illegal building structures and a rubber plantation have been executed (even partly) through government crackdowns: some illegal resorts were damaged, but not completely removed, by officers of the Department of National Parks so that they were not fit for operation and some trees of an illegal rubber plantation have been cut with the assistance of armed forces. Other resorts are still operational. Meanwhile the IUCN reports more encroachments, wrongful land use (involving unsustainable farming practices) illegal logging, poaching and resort building and the state of the site is described as critical. The 2014 IUCN Reactive Monitoring Mission to the DPYKY-FC advised the World Heritage Commission to add the property to the List of World Heritage in Danger. [5] The effectiveness of Thailand's strategy for protecting the Site is therefore called into question.

Why Crackdowns?

While this report does not promote the kind of forceful actions the Central Thai Government uses to reach its goals, the use of crackdowns reveals an underlying problem in the Thai Legal Framework that has a negative impact on the Country's ability to enforce law and to comply with its international obligations.

The example of the problems in the DPYKY-FC mentioned in the IUCN reports from the last ten years, shows that the crackdowns are a direct consequence of the fact that for a long period of time relevant laws, like the National Park Act (1961), [6] were not enforced. Although the government's local district officer's duties are to watch over and direct the laws and policies of the central government, to report to provincial and national government (Civil

[4] UNESCO World Heritage Documents, availabalbe at http://whc.unesco.org/en/list/590/documents/ and http://whc.unesco.org/en/soc/3243.

[5] UNESCO World Heritage Documents, http://whc.unesco.org/en/list/590/documents/.

[6] National Park Act, B.E. 2504 (1961), http://faolex.fao.org/docs/html/tha21343.htm.

Service Act 2008),[7] and the district police has authority in the National Park (National Park Act 1961), the court's order to remove building structures and rubber trees in Thap Lan National Park, was in fact forcefully executed (through a 'crackdown') by national government agencies assisted by armed forces. This implies that the local governments are not effectively enforcing the law so as to prevent or stop encroachment and illegal resort building. From the perspective of the central government, a crackdown is a legitimate tool to restore at least some order and authority. The crackdown itself has no long term effect however and in relation to forest conflicts, and may violate local and poor people's basic Human Rights.[8]

Why Do Local Governments Not Enforce the Law?

Concentration of power among prominent families is common in Thailand. According to Freedom House some 42 per cent of the Thai lawmakers elected in 2011 replaced family members.[9] An inspection of registers of the sub-district offices in the Thap Lan National Park area show that family members of the former MP from this district hold key positions in local governments and land offices and that they have large agricultural and other commercial interests inside the boundaries of the protected area.

The IUCN's World Heritage Outlook states that the protected areas (where this prominent family has commercial interests) are covered by strong legislation.[10] The National Park Act (1961, Section 16) does not allow unsustainable agricultural practices (like mono-crop 'till' systems (corn, tapioca), the use of herbicides/pesticides), unlicensed businesses/resorts, poaching, logging, garbage and land/forest burning in these areas. However, the inspection of plots of government-owned land designated for sustainable use inside the National Park also with members of the prominent family and other government

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[7] Civil Service Act, Thailand, 2008, available at:
https://www.ocsc.go.th/ocsc/th/uploads/law/Act_law2551En.pdf.

[8] Several local residents and their families inside the Thap Lan National Park (a part of the World heritage Site DPYKY-FC , received eviction orders ('Matra 22'), while they have official house registrations from the local government. The community reported this to IUCN, WHC and OHCHR by sending them a letter with detailed information referring to the relevant (violated) articles of The Universal Declaration of Human Rights on 26 May 2016.

[9] Freedom House, Thailand Report, https://freedomhouse.org/report/freedom-world/2014/thailand.

[10] World Heritage Outlook, DPYKY-FC:
http://www.worldheritageoutlook.iucn.org/search-sites/-/wdpaid/en/902480.

officials as the registered user shows a variety of illegal activities. [11] Concerning enforcement, there is a conflict of interest for government officials who have commercial interests in this area to enforce relevant laws and to run their businesses in the most profitable way by ignoring the relevant laws. One could call the decision to not enforce and to act against these laws by government officials, an act of corruption.[12]

One would expect that periodically reports from the local government to the national government agencies would alert them to the problems within the park. However, the Institute for Global Environmental Strategies reported in 2004 that local governments only send reports on request and that a request from the central governments only seems to be made after media coverage of certain issues gets the attention of the Director General.[13] Regarding the example of protected areas and National Parks, these offices also have only small budgets compared to their responsibilities, limiting their capacity to act even where there is a will to do so.

The Role of the Administrative Courts of Thailand

The Act on establishment of administrative courts and administrative court procedure, (1999),[14] gives Administrative Courts the power to 'try and adjudicate' administrative cases. Publications of acting and former Judges of the Supreme Administrative Court of Thailand show that there are problems with having the Administrative Court's enforcement order executed in cases where the government office or official ignores the Court's order. The following has been observed by those former Judges:

The Administrative Court has no authority to amend, modify, or substitute the administrative decision.[15]

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[11] Unsustainable agricultural practices, use of herbicides/pesticides), unlicensed businesses/resorts, garbage and land/forest burning.

[12] Definition corruption by http://www.merriam-webster.com/dictionary/corruption.

[13] People and Forest — Policy and Local Reality in Southeast Asia, the Russian Far East, and Japan. June, 2004; M. Inoue & H. Isozaki, (eds). Institute for Global Environmental Strategies, Vol. 3.

[14] Act on Establishment of Administrative Court and Administrative Court Procedure, B.E. 2542 (1999) http://www.admincourt.go.th/AMC_ENG/02-LAW/laws/e2act.pdf.

[15] Dr. Charnchai Sawangsagdi, Judge of the Supreme Administrative Court of Thailand, Thailand Report to the 10th Congress of IASAJ, Sydney, Australia, March 2010, NATIONAL REPORT OF THAILAND 'Review of Administrative Decisions of Government by the Administrative Court of Thailand' p.76.

and:

> *The law should be modified for greater clarity as well as prescribe measures for cases where the administrative party does not comply with an enforcement order of the Administrative Court, such as imposing fines from agencies in the case State agencies fail to comply.*[16]

These quotes represent an interpretation of the law that the Thai Administrative Court cannot require that the decision has to be executed within a certain time by using financial or other penalties in the event that the Government office or official ignores the Court's enforcement order. Ignoring the Court's order has no consequences for the Administrative agency or official.

It should be considered as a shortcoming if the court cannot attach a penalty to its statement, but one could expect that ignoring a court order can be treated as contempt of court, which is, according article 64 of the Act on establishment of administrative courts and administrative court procedure (1999), punishable with a financial penalty and imprisonment. However, according to a source connected to the administrative court, this article 64 is and could never be used in relation to a government office or official who ignored the administrative court's order. It is not clear whether this is a legal limitation or the court's choice not to use this Article 64. Either way, it is not used as a remedy for the court's problems to see its orders executed.

In the course of doing the research for this report, Thai legal professionals participated in discussions on this topic and shared their experiences of the mechanisms to enforce the decisions of the Administrative Court. They were also asked about their knowledge of the differences between Thailand and other countries in relation to these mechanisms and the possibility for the court to attach a penalty to its statement. Songkrant Pongboonjun, a senior environmental lawyer from the North of Thailand, noted as follows after he was asked what he thought the reason was for the problems for the Thai Administrative Court:

> *The question is very interesting to me, as [an] environmental lawyer I also have the same question and never get a satisfying answer. Even three years ago when I studied administrative court procedure at Thammasat University this topic is omitted, I don't know why. So when you ask about knowledge comparative view of these issues, it is very clear that few people know about this. I think this issue will be very useful both for Administrative court*

[16] Dr. Bhokin Bhalakula, Former Vice President of the Supreme Administrative Courts 'Execution in Administrative Cases', p.60.

and civil society because we recognize that if we cannot enforce the judgment, the judgement means nothing.

Similarly, environmental lawyers of the Enlaw-Thai Foundation responding to the same question stated:

We know that to reach the final judgment in favor of environmental protection is a long rough way. It could take five years or more in one environmental administrative case. If, at the end, people and the court cannot force the responsible authority to appropriately comply with the ruling, it is then not only the waste of time but also turns it into just a piece of paper.

In the long run, this will undermine the respect of judicial power in reviewing the abusive orders and actions of administrative authorities. That is why studying on the mechanism to execute the judgment is essential for the development of Administrative Court's role in bringing justice to the society.

Conclusion

Thailand's Legal Framework actively hinders effective enforcement of environmental law and fighting corruption which impacts on the country's stability. Although the IUCN's World Heritage Outlook states that the protected areas discussed are covered by strong legislation this assessment is not realistic and distracts Thai policy makers and the international community. The relevance and quality of the scientific insights and data that the IUCN produces are not often questioned. This gives the IUCN great responsibility for ensuring the accuracy and validity of its data. However, the IUCN assessment of the Thai Legal Framework as being 'effective' seems, based on the problems described above, to be misleading and incorrect.[17] An assessment of 'ineffective' for the Legal Framework could mean that Thailand violates Article 5 of the Convention Concerning the Protection of the World Cultural and Natural Heritage.

For the execution of the court's decision to correct arbitrary government decisions not to enforce Law, the Thai Administrative Court depends on the administrative agency or the official the decision is made against or the intervention of armed forces controlled by central government agencies.

[17] World Heritage Outlook DPYKY-FC http://www.worldheritageoutlook.iucn.org/search-sites/-/wdpaid/en/902480

Notwithstanding the fact that Thailand's draft Constitution[18] commits the country to Democratic values and the Rule of Law, Administrative Law, its arrangements and interpretation, actively hinders practical implementation of the law. When essential instruments like the possibility of attaching a penalty to a Court order, are left out of the Administrative Framework and the Administrative Court cannot, or fails, or refuses, to act independently and find a remedy within existing law, the authority of the Court is relegated to that of an advisory body which merely advises the administrative agency or a State official on the direction or the procedure for the execution of the judgment. The problems for the Court in having its orders executed discourage the public from challenging the Administrative decision and take away pressure for Administrative agencies and civil servants to improve their performance because they cannot be held accountable. The possibilities for finding remedies within the existing Law, either initiated by the government or the Administrative Courts seem numerous. Failing to try gives a strong argument to those who suspect the Administrative Courts are not impartial and do not act independently, and are therefore acting against Thailand's own Constitution.[19]

Thailand's struggle with enforcing environmental law is related to the problems for the Administrative Court to have its order executed. The Administrative Court's problems in have its judgements executed are characteristic of Thailand's struggle between contending the legitimacy of the traditional powers (military, members of the judiciary and civil servants, including Privy Council) with democratic powers to the public.

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[18]Draft Constitution Thailand, April 17 2015.

[19] European Parliament resolution of 8 October 2015, section Q, 11 http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P8-TA-2015-0343+0+DOC+PDF+V0//EN

COUNTRY REPORT: UKRAINE

Biodiversity Policy and Legislation in Forestry of Ukraine: Implementation and Main Features

Svitlana Romanko*

Introduction

Solving the urgent global issue of biodiversity conservation takes on special significance for Ukraine. It occupies 6% of Europe's territory, and is home to at least 35% of the continent's biodiversity. The woodland territory of Ukraine hosts 43.2% of European spieces of flora and fauna. The forests occupy the 16% of Ukrainian territory in general, per inhabitant, this amounts to approximately 0.18 hectares of forested land, and 16.4 m^2 of timber resources. The negative impact of anthropogenic activity in forestry, has led to a significant reduction in populations and species numbers of flora and fauna in Ukrainian forests. The current situation with regards to biodiversity is distressing and drastic measures are required.

The provisions concerning the operation of the state forest cadastre and the initial accounting of such foreststates that biodiversity in Ukraine is only protected in Natural Reserves. Such reserves make up only 17% of all forest land within Ukrainian territory. This indicates that the approach to forest management in 83% of area of the total forested land within Ukraine takes virtually no account of the conservation of biodiversity.

Laws Applicable to the Protection of Biodiversity and Implementation Challenges

At the World Summit on Sustainable Development, Ukraine declared its intention to preserve biodiversity as one of its national policy priorities. Biodiversity in the forests of Ukraine is regulated by a large number of provisions, which can be divided by specific groups:

Legal acts which concern the basic requirements of environmental protection and biodiversity conservation, for example Law of Ukraine 'On Environmental Protection', Resolution of KMU 'The concept of biodiversity conservation in Ukraine';

Legal acts governing ecological networks, for example Laws of Ukraine 'On the Ecological Network of Ukraine' and 'On the National Program for National Ecological Network Development in Ukraine for 2000-2015;'

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Legal acts that protect flora and fauna, for example Laws of Ukraine ‘On Flora’ and ‘On Fauna’, and Law of Ukraine ‘On the Red Data Book of Ukraine’ and ‘On the Green Data Book of Ukraine’;

Legal acts regulating the creation and organization of environmental protection facilities, for example Law of Ukraine ‘On the Nature Reserve Fund of Ukraine’, Resolution of KMU ‘On the program of perspective development of protected areas (nature reserves) in Ukraine to 2020’;

Draft Laws aimed at implementing EU law on biodiversity into national law, for examples Law of Ukraine ‘On the Conservation of Natural Habitat Types as the Basis for the Protection of Native Flora and Fauna’.

There is also a separate group of regulations based on international instruments ratified by Ukraine, e.g.: New EU forestry strategy for forests and the forest-based sector (2013); ‘EU Biodiversity Strategy to 2020’ (2011); Directive 2009/147/EC on the conservation of wild birds (2009); Framework Convention on the Protection and Sustainable Development of the Carpathians (2003); Protocol to the Carpathian Convention (2008); Declaration on Environment and Sustainable Development in the Carpathian and Danube Region (2001); European Landscape Convention (2000), Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention, 1979); The Convention on Migratory Species **(**Bonn Convention, 1979); CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora, Washington Convention, 1973); The Convention On Wetlands of Interational Importance (Ramsar Convention, 1971); and others.

Six Ministerial Conferences on the protection of forests in Europe have adopted 21 resolutions, 20 of which have been signed by Ukraine. Several of these resolutions directly related to the conservation of biodiversity, such as H1 ‘Sustainable forest management in Europe’, H2 ‘Preservation of forest biodiversity’, and L2 ‘Pan-European criteria, indicators and practical recomendations on sustainable forest management’.

The principal activities for the conservation of biodiversity in Ukraine are outlined in Decree of the Cabinet of Ministers ‘On the Concept of Biodiversity Conservation in Ukraine’ of 12 May 1997 g. № 439.[1] Despite the existence of a large number of regulations in the field of biodiversity conservation, the degree to which these measures are effective and properly implemented is unclear. As a result of the desire for strong economic growth, the status of the biota in the country has undergone catastrophic change: unique steppes has been plowed; large areas of forest have been uprooted and replaced by farmland; and many marshes have been drained.

In terms of the scale and intensity of use of resources, Ukraine is ahead of all developed countries and undoubtedly ranks first in Europe. Such a powerful interference with nature has put the survival of many species of animals, plants and birds at risk. The problem of biodiversity

[1] Preservation of coastal and marine ships and flood plains, lake and marsh, meadow and steppe, forest and mountain ecosystems; Recovery of agricultural landscapes and other territories intensive economic activities; Conservation of species and populations; The establishment of a national ecological network.

conservation in Ukraine has become, as never before, urgent and it is vital for certain species that are endangered that steps are taken to prevent further biodiversity loss.

International regulations that form the basis of global environmental policy on biodiversity are in fact adequately implemented in Ukraine, but the process in general is too slow. In addition, we can not eradicate the destructive practice of extensive deforestation. The most widespread, and at the same time, latent, environmental crime in Ukraine is illegal logging. Ukrainian legislation does not currently extend to a comprehensive approach to the preservation of biotic and landscape diversity. Thus, the approaches to establishing an ecological network described in Natura 2000 and in Ukrainian legislation are different.

Ukraine is a contractual party of the Convention on Biological Diversity (CBD), the Convention on Migratory Species and other relevant conventions, which oblige the country to monitor plant and animal wildlife. It is well known that the CBD identifies two principal methods for preserving forest biodiversity: by establishing a network of protected forest areas; and through the sustainable use of forest biodiversity**.** In line with the CBD, biodiversity conservation in forests in Ukraine is regulated by Article 85 of Forest Code of Ukraine through: the establishment, announcement and development of ecological networks in relation to prescribed areas of nature conservation; the selection, establishment and preservation of the valuable genetic fund of forest species; the use of environmentally targeted methods of reproduction of forests and use of forest resources - forestry on the principles of sustainable development, forest monitoring, forest certification, and keeping of a forest inventory; and the protection of rare and endangered species of fauna and flora, plant groupings, virgin forests and other valuable natural systems under environmental legislation.

Biodiversity conservation is also based on the Program of Perspective Development of Protected Areas in Ukraine (1994) and fifteen other legislative acts. All of these were taken into account in this Country Report. It is worth mentioning that the legal regime for any particular forest depends upon its categorisation. Article 39 of the Forest Code of Ukraine establishes the division of forests for environmental, social and economic importance.[2]

For Ukraine, in this context, the most important task is to develop sustainable forest management plans (projects in relation to the organization and development of forestry), which include the conservation of biodiversity as part of the management strategy. The presence of such a requirement in the EU of Biodiversity Strategy to 2020, and the new forest strategy, indicates that this will be the future direction of travel in the Ukraine and the EU as a whole. It is however worth

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[2]*Protective forests* (mostly perform water protection, soil-protecting and other protective functions); r*ecreational and wellness forests* (performing mainly recreational, sanitary, hygienic and wellness functions); *forests for conservation, scientific, historical and cultural purposes* (perform special environmental, aesthetic, scientific functions, etc); *operational forests* // Cabinet of Ministers Resolution 'On approval of the forest division into categories and the allocation of specially protected forest areas' of 16 May 2007 r. № 733.

noting that the organization ‘Forest Europe’ is working on a Forest Convention, which will involve those countries which are currently not members of the European Union.

Legislative Changes and Developments in 2015

General Biodiversity protection

On 9 May 2015 the Law of Ukraine ‘On Amendments to Some Legislative Acts of Ukraine on Protection of Biodiversity’ came into force. This law implements the requirements of international conventions and agreements into Ukrainian legislation. The main provisions of this Act are prohibitions of: Complete felling and all kinds of gradual and continuous logging; sand mining and gravel extraction from river beds and other water bodies in protected areas within Biosphere Reserves or National Reserves; selective shooting of animals in nature reserves, or selective shooting of animals by hunters in the presence of a person who is authorized to carry out selective shooting where the hunters themselves do not have such authorisation; the use of bears and wolves for hunting on test stations, as well as for examinations, and competitions with hunting dogs; the use animals in bullfighting; the establishment and operation of traveling zoos and wildlife traveling exhibitions; and the operation of Dolphinariums with no natural seawater; and the protection of all species listed in Red Data Book of Ukraine by public authorities (Cabinet of Ministers of Ukraine, Environmental Inspection of Ukraine, Ministry of the environment and natural resources), local governments, and the owners and users of lands. These authorities and all individuals should protect rare and endangered species of flora and fauna listed in the Red Data Book of Ukraine and must send to the Ministry of the environment and natural resources all existing information on the distribution, abundance, and status of plant and animal species listed in the Red Book of Ukraine, and immediately inform such authorities of destruction, damage, death or illness.

Protection of Forests

Forest planning and forest management is based on sustainable development principles (which are declared by Art. 34 and 48 of the Forest Code of Ukraine). At the same time, the provisions on biodiversity protection (Article 85), which are declared in the Forest Code of Ukraine, are not used in practice in forest zones outside of protected areas. As a result, valuable biodiversity features (species of plants, animals and fungi listed in the Red Data Book of Ukraine; plant communities from the Green Book of Ukraine; and the species that have to be protected under international Conventions) are not protected in all forest areas. In addition, the Forest Code means only ‘valuable biodiversity’ and the diversity of tree species will be ensured, thus narrowing the concept ‘biodiversity protection’. As a result, both outside and inside of protected areas the diversity ‘of all living organisms and their environment of existence’ is not protected.

Currently, according to the website of the Verkhovna Rada of Ukraine, the government is in the process of developing specific legislation in the field of biodiversity in forests, such as an instruction on the protection of biodiversity in forests, which should include measures relating to

biodiversity in forests both inside and outside protected areas. Additional research is now being carried out in order to determine the purpose and role of forests in Ukraine, taking into account the environmental services they provide to the country and the population.[3] The results of this research will be incorporated to relevant amendments to the Forest Code of Ukraine. It is also necessary to improve the protection of water and water-dwelling animals, and, to some extent, all aquatic living organisms by transfering duties for protection regarding all water bodies located within forest areas onto the State Forest Service.

An intermediate result of this is the development of a draft policy for reforming forestry and hunting in Ukraine[4] from 30 of April 2015. Among the main provisions of this document are the following: the development of new provisions on timber trade, based on a set mechanism for concluding long-term agreements, and for conducting auctions in voice and electronic form, thus cancelling the order of the State Committee of Ukraine of 19.02.2007 N 42 'On improving procedures for the sale of unprocessed wood';[5] and the development of the State Target Program of Forestry of Ukraine till 2020.

Conservation Principles and Ukraine

The main principle of Directive 92/43 / EEC is the selection of habitats characterized by the relevant biotic and abiotic components. In Ukraine, the approach to eco-network organization does not rely on the concept of habitats or on a habitats-based approach (when eco-network is established taking into acount the settlements of species) as the basis for selection of the constituent elements of the ecological network. The ecological network is, instead, established on the basis of protected areas (nature reserves) with further inclusion of all nature conservation territories of other types, e.g. water conservation, forest, recreation, etc.[6] Therefore, adoption of appropraite regulation is an important step in reforming the national approach to biodiversity and to the formation of an ecological network.

International instruments are also enshrined in the new approach to functional and territorial environmental protection, in particular:

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[3] Development of key legislative acts on the protection of biodiversity in forests: adaptation of Ukrainian legislation to EU requirements (draft), O.Kahalo, L.Protsenko, H.Bondaruk, D.Skrylnikov. - Access mode *http://www.fleg.org.ua/wp-content/uploads/2015/07/Zvit_prom_Rozrobka_klyuchovyh_zakonodavchyh_aktiv_UKR.pdf*

[4] Concept of reforming the forestry and hunting in Ukraine. – *Main Legal Portal of Ukraine.* – Access mode *http://search.ligazakon.ua/l_doc2.nsf/link1/NT1425.html*

[5] Registered by the Ministry of Justice of Ukraine on 26.02.2007 № 164/13431.

[6] Ecological network according to the Law of Ukraine «On ecological network» (2004) is a unified territorial system, which includes natural landscape areas under special protection, territories and nature reserves , resorts, healing recreational, recreational, water protective, field shelter, which are the part of the territorial structural elements of ecological network - natural regions, natural corridors, buffer zones.

- the concept of environmental conservation of biotic and landscape diversity;
- the population approach to the analysis of the conservation status of native species of animals and plants in order to evaluate threats to their existence;
- the implementation of scientifically-based and balanced management and monitoring of biodiversity in protected areas and in areas involved in economic activity;
- taking into account in environmental practices a useful combination of environmental and social aspects; and
- an understanding that the future conservation of species diversity and coenotic biota are closely related to the preservation of certain types of natural or semi-natural habitats.
- As a result, the new approach to establishment of ecological networks that has been implemented, includes:
- the concept of ecological network as a combination of natural, semi-natural and even anthropogenic and man-transformed territories;
- the implementation of measures for the establishment of a system of natural and semi-natural areas, including natural systems which play a significant role for the survival of the most important components of European biodiversity at both the species and ecosystem levels within the Natura-2000 and Emerald Networks;
- the fixing of a comprehensive approach to the preservation of biotic and landscape diversity, which meets the European and international criteria to the biodiversity protection (habitat concept / settlement concept) ;
- the development and implementation of a system for monitoring biodiversity and the principles and methods of management of protected areas of different types at the legislative level;
- the development of a system to help meet the needs of natural areas, natural flora and fauna in at the stage of policy creation and the development of territories, as well as land use management planning; and
- the active implementation of an ‘ecosystem services’ approach.

Another fairly new concept for Ukrainian legislation and theory is the idea of ecosystem services and the idea of requiring those relying directly on such services to pay for them. The concept is not entirely foreign to Ukraine in that the current tax code includes a number of taxes and duties (art. 9, 10), some of which, in fact, constitute payments for ecoservices. For example, there is an environment tax, rent for oil, gas, gas condensate extracted in Ukraine, a fee for subsoil use, a land fee, fees for special use of water and forest resources, and a local tourist tax. But all the money paid under these systems falls within the general budget and is not specifically directied at conservation and maintenance of ecosystems. Therefore, payments for ecoservices do in fact exist but the mechanism for payment for environmental services is not fully developed yet. Such a mechanism for the identification and assessment of environmental services; the definition of ‘seller’

and 'buyer'; the definition of the economic relationship between them; compensation mechanisms; and the financial mechanisms for maintaining of ecosystems as well as of the relevant providers of environmental services, still need to be established. Besides using mandatory payments (taxes and fees), the mechanisms for payment for environmental services can be based on contractual payments for environmental services at the regional and local levels.

In late 2015 we [7] carried out a scientific assessment of the draft law about the implementation of the obligation to maintain and repair of forest roads by forest users themselves. We critically analyzed these provisions and had concluded that**:** It contradicts Ukrainian legislation, which obliges financing of the maintenance and repair of roads by the State Road Service at the expense of state; mandatory taxes, such as this road tax, are charged from all citizens regardless of whether they are forest users or not. Forest users also pay a fee for special forest use; and forest usage varies from felling trees to collection of mushrooms and berries. The Bill raises the questions as to how to calculate who, how, how much, and in what way to finance a repair of roads when there is a mixture of users, ranging from riding on them by truck or a person on foot with a basket of berries?

It is therefore expedient to propose the following approach to help establish a mechanism for payment for environmental services in the forest sector: Identification and evaluation of the relevant eco-services; the inclusion of all identified eco-services with regards to the special use of forest resources; and the formation of special funds made up of payments received for the use of such natural resources, and development of a system relying on such funds to conserve and maintain the forest ecosystems.

In addition to improving the mechanisms for development and functioning of ecological networks, an effective mechanism for biodiversity protection in forests outside of protected areas is the introduction in practice of the concept of High Conservation Value Forest (HCVF) by making certain changes to the 'Procedure for division of forests into categories and determination of specially protected forest areas'.

Conclusion

In order to protect Ukraine's biodiversity it is necessary to ensure the implementation of integrated management in the formation, preservation and management of the ecological network, and management of Protected Areas. It will also be necessary to ensure the coordination of central and local executive authorities and local self-government in the formation, preservation and management of the ecological network.

The Ukrainian parliament is progressively moving towards the conservation of biodiversity. This is evident from a recent prohibition of logging activities within natural reserves (biosphere reserves, national parks, regional landscape parks and other protected areas), even sanitary

[7]Departament of labour, environmental and agrarian law of Law Institute of Vasyl Stefanyk Precarpathian National University.

logging.[8] The next step should be to update and reform the main legislative biodiversity acts – the Laws of Ukraine 'On the Red Data Book of Ukraine', 'On the Nature Reserve Fund of Ukraine' and 'On Ecological Network of Ukraine'.

Ukraine should also incorporate key environmental tools and concepts, such as eco-services, 'green' marketing, ecosystem approach to natural resources use, environmental state programs and scientific development of new nature saving technologies and methods of environmental use and protection. It would be also very important to pay attention to environmental education, behavior and psychology.

There are some economic measures that should be included in Ukrainian legislation and practice – strategic environmental assessment of quality and quantity of natural resources, monitoring of the condition of biological and landscape diversity and State Cadastre of the national ecological network and components and inventories of flora and fauna; economic incentives for land users in the territory of the nature reserves and ecological network and who lead environmentally sustainable economic activities (e.g. preferential taxation and loans on favorable terms). One of the most important issues is immediate increasing of penalties for environmental damage and loss and continuation of adaptation of Ukrainian legislation to EU and global standard

[8] Resolution of the Cabinet of Ministers of Ukraine on 23 of March, 2016.

COUNTRY REPORT: UNITED STATES

Congressional Opposition Fails to Halt Key Environmental Initiatives by the Obama Administration; Court Battles Loom as the 2016 Presidential Election Approaches

Robert V. Percival*

Introduction

In 2015, his penultimate full year in office, President Obama moved aggressively to cement his environmental legacy and shift U.S. energy infrastructure away from fossil fuels. The U.S. Environmental Protection Administration (EPA) adopted significant regulations to limit greenhouse gas (GHG) emissions from power plants and to clarify the reach of federal authority to protect wetlands. Fierce opposition from Republicans in Congress failed to curtail EPA actions due to Obama's veto of resolutions disapproving the regulations. Even a Supreme Court decision requiring the EPA to consider costs before limiting emissions of mercury and air toxics (MATS) was founded on such narrow grounds that the EPA was able to leave the regulations in place.

The Republican Party, which fiercely opposes environmental regulation, now holds a majority in both houses of Congress. However, its majority is not large enough to override a presidential veto, which requires a two-thirds majority in each house of Congress. Congress does hold the 'power of the purse', but, fearing political backlash from another government shutdown, Republicans were unable to defund the EPA's environmental initiatives. The future of President Obama's environmental initiatives will thus depend on decisions by courts hearing legal challenges to them, and ultimately the results of the 2016 elections.

Air Pollution and Climate Change

EPA Regulation of GHG Emissions from Power Plants

The EPA announced its final rules for controlling GHG emissions from existing power plants on 3 August. Known as the 'Clean Power Plan', the regulations are designed to reduce GHG emissions from this sector by 32% above 2005 levels by 2030. Since the EPA proposed the regulations in June 2014, it received more comments on them that it has ever received on any proposed regulations in the agency's 45-year history. The regulations are being issued pursuant to §111(d) of the Clean Air Act. This provision allows the EPA to require states to regulate a pollutant for

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which it has established a new performance standard if it is not already regulated as a pollutant in a national ambient air quality standard (NAAQS) or in a national emissions standard for hazardous air pollutants (NESHAP). Initial state plans will be due in September 2016, but states that provide a reasonable explanation for needing more time can obtain extensions to September 2018.

On 23 October 2015, at least 17 separate lawsuits challenging the EPA's Clean Power Plan were filed in the D.C. Circuit. The state of West Virginia, joined by 23 other states, was the lead plaintiff in the first lawsuit. Industry trade associations, unions, and the states of Oklahoma and North Dakota also filed suits. Several of these states and groups prematurely filed lawsuits last year before the rule even was adopted in final form. These cases were dismissed as premature, but the new round of litigation is timely filed. On 21 January 2016, the U.S. Court of Appeals for the D.C. Circuit refused to grant a stay of the regulations, while expediting consideration of the cases, which will be argued in court on 2 June 2016.

EPA Strengthens Controls on Ground-Level Ozone

On 1 October 2015, the EPA announced that it was taking final action to lower permissible levels of ozone in the ambient air. The EPA lowered the national ambient air quality standard (NAAQS) for ozone from 75 to 70 parts per billion (ppb). Environmentalists were disappointed that the EPA did not lower the standard to 60 ppb, which was what they believe the science justifies. The EPA estimates that compliance with the 70 ppb standard will cost US$1.4 billion per year by 2025, while producing annual benefits worth US$2.9 to US$5.9 billion. Both industry groups, which had been running deceptive ads praising the existing NAAQS they once opposed, and environmental groups, who believe the new standard is too weak, filed lawsuits challenging the EPA's action.

Stronger Fuel Economy Regulations Proposed for Heavy Trucks

The EPA proposed to require that heavy trucks improve their fuel economy on average by 40% by 2027. The proposal is part of the Obama administration's plans to reduce U.S. GHG emissions. While it is estimated that compliance with the rules could increase the cost of trucks by US$12000 to US14000 per vehicle, the added expense is expected to be recouped quickly in fuel savings. Truck manufacturer Cummins actually expressed support for the new regulations, though trucking companies were more skeptical.

Supreme Court Rules Against EPA on Power Plant Emissions of Mercury and Air Toxics

On 29 June 2015, the U.S. Supreme Court announced its decision in *Michigan v. EPA* 576 U.S. (2015). By a 5-4 majority, the Court held that the words 'appropriate and necessary' in § 112(n)(1)(A) of the Clean Air Act required the EPA to consider costs when it made the initial decision to regulate emissions of mercury and toxic air pollutants from power plants. The Court held that the EPA's subsequent consideration of costs when it promulgated the mercury and air pollutant regulations was insufficient to comply with the statute. However, the Court's decision was

very narrow, and the EPA's regulations were not vacated on remand. Because the EPA had already prepared extensive analyses of costs and benefits when it issued its final regulations, it should be easy for the agency to comply with the decision without vacating the regulations. Moreover, virtually all the power plants that did not intend to shut down in response to the regulations are now in compliance with them (the regulations were not stayed pending judicial review). On 17 December 2015, a three-judge panel of the U.S. Court of Appeals for the D.C. Circuit agreed that the EPA can keep its regulations controlling mercury emissions from power plants intact while it complies with the Supreme Court's decision.

Protection of Water Quality

EPA Clarifies the Reach of Federal Jurisdiction under the Clean Water Act

At the end of May 2015, the EPA issued a final rule clarifying its interpretation of the meaning of 'waters of the United States,' the jurisdictional trigger for federal regulation under the Clean Water Act. The rule is a response to the Supreme Court's sharply divided (4-1-4) ruling in *Rapanos v. U.S.* 47 U.S. 715 (2006). In that decision, Chief Justice Roberts expressly invited the EPA to issue new rules clarifying the reach of its jurisdiction. He indicated that such rules would be entitled to deference under the Court's *Chevron* doctrine that requires reviewing courts to defer to reasonable agency interpretations of ambiguous statutory provisions. On 9 October 2015, the U.S. Court of Appeals for the Sixth Circuit issued a nationwide stay of the EPA's 'waters of the U.S.' rule by a 2-1 ruling. Curiously, the Court did so without even finding that it had jurisdiction over challenges to the rule. The two judges that issued the stay conceded as follows:

The clarification that the new Rule strives to achieve is long overdue. We also accept that respondent agencies have conscientiously endeavored, within their technical expertise and experience, and based on reliable peer-reviewed science, to promulgate new standards to protect water quality that conform to the Supreme Court's guidance. Yet, the sheer breadth of the ripple effects caused by the Rule's definitional changes counsels strongly in favor of maintaining the status quo for the time being.[1]

Energy Law

On 25 January 2016, the U.S. Supreme Court decided an important case involving efforts to encourage more efficient use of energy. The case, *Federal Energy Regulatory Commission (FERC) v. Electric Power Supply Association* No. 14–840, involved review of a FERC order encouraging utilities to implement demand-response programs to reduce consumption of electricity at peak hours. Industry groups argued that the rule exceeded the FERC's jurisdiction because it

[1] *State of Ohio, Et al. v US Army Corps of Engr'rs, et al* Nost 15-3799/3822/3853/3887 (2015) US Court of Appeals, 6th Circuit.

effectively regulates retail, rather than wholesale, markets for electricity. By a 6-2 vote the Court rejected these arguments and held that the Federal Power Act did give FERC the authority to regulate demand-response programs and that FERC's rule was not arbitrary and capricious. Justice Kagan wrote the majority opinion joined by Chief Justice Roberts, Justice Kennedy, Justice Ginsburg, Justice Breyer, and Justice Sotomayor. Justice Scalia wrote a dissent joined by Justice Thomas (Justice Alito did not participate in the decision). Surprisingly, the Court held that judicial deference to the agency was not necessary to uphold FERC's rule because the Federal Power Act unambiguously gave FERC power to regulate activities that directly affect the wholesale market for electricity. The decision is an encouraging sign that six of the Justices understand the importance of encouraging more efficient use of energy in evolving electricity markets.

Environmental Enforcement

Federal Government and Coastal States Settle Civil Claims over 2010 BP Oil Spill

On 5 October 2015, the U.S. government and five states reached a settlement with British Petroleum (BP) to resolve civil claims arising from the massive oil spill in the Gulf of Mexico in April 2010. BP agreed to pay a total of US$20.8 billion for violations of the Clean Water Act and Oil Pollution Act and for economic and natural resources damages. The settlement includes a US$5.5 billion federal Clean Water Act penalty, the largest civil penalty in the history of environmental law, 80% of which will be devoted to restoration efforts. It also includes US$8.1 billion in natural resource damages that will be paid to federal and state trustees for Gulf restoration projects and an additional US$700 million to address any later-discovered natural resource conditions. BP also agreed to pay US$4.9 billion to the five Gulf states and up to a total of US$1 billion to several hundred local governmental bodies to settle claims for economic damages suffered as a result of the spill.

Volkswagen Diesel Emissions Scandal Stuns Authorities

In September 2015, the EPA announced that Volkswagen had installed software on its diesel vehicles that disabled their pollution control devices, except when they were being tested. After initially acknowledging that this software was installed on 482000 vehicles Volkswagen sold in the U.S., the company later admitted that it was installed on 11 million vehicles worldwide. Volkswagen's intentional deception resulted in much higher levels of pollution from vehicles Volkswagen was touting as 'green diesels'. This revelation led to the resignation of the company's Chief Executive Officer and universal condemnation of the company. Because the Clean Air Act provides for civil penalties of US$37500 per vehicle, the fine in the U.S. alone could be as high as US$18 billion. On 4 January 2016, the U.S. Department of Justice filed a civil suit against Volkswagen seeking both an injunction to stop the cheating and civil penalties that will range into the billions of dollars. More than 450 private lawsuits have been filed against

Volkswagen. These have been consolidated in the U.S. District Court for the Northern District of California.*Securities Law Enforcement for Climate Change Disclosures*

On 9 November 2015, New York Attorney General Eric T. Schneiderman announced that he had settled charges against Peabody Energy for failing to disclose to investors and securities regulators what the company knew about the risks of climate change. Peabody will not pay any financial penalty, but it agreed to make more detailed disclosures about the impact of climate change risks on the coal company's future financial prospects. The action was brought pursuant to New York's Martin Act that forbids companies from making false representations to investors or securities regulators.

Federal Legislation

Reform of Toxic Substance Control Act Passes Both Houses of Congress

For years, sharp divisions in Congress have blocked the enactment of new environmental legislation. However, bills to comprehensively update the Toxic Substances Control Act passed both houses of Congress in 2015. On 24 June 2015, the U.S. House of Representatives passed the TSCA Modernization Act (H.R. 2576) by a vote of 398-1. The bill would require more testing of chemicals and replace the existing requirement that regulation employ the 'least burdensome' regulatory option, instead requiring the EPA to 'determine whether technically and economically feasible alternatives that [are more beneficial to] health or the environment . . . will be available as a substitute.' On 17 December 2015, the U.S. Senate approved similar legislation (S. 697) by a voice vote. The substantial differences in the House and Senate bills must be reconciled, but given the huge margins of passage, it is widely expected that compromise legislation will be enacted and signed into law. Congressional action was spurred in part by the realization that U.S. chemical control law had fallen far behind that of the EU and even China.

Microbeads in Cosmetics Prohibited

The U.S. Congress adopted, and President Obama signed into law, the Microbead Free Waters Act of 2015. The Act amended the Federal Food, Drug and Cosmetic Act to ban the use of cosmetics that contain synthetic plastic microbeads because of their adverse environmental impact.

EPA Budget

The omnibus budget bill adopted by Congress funded the EPA at a level of US$8.1 billion, US$451 million less than President Obama had requested. As a result of budget reductions, the EPA now has only 15000 employees, down from 17000 at the start of the Obama administration and the lowest level since 1989. However, the EPA's Republican opponents were unable to block EPA action, save for one barring the EPA from regulating livestock emissions of GHGs.

Efforts by Congress to Overturn Regulations Vetoed by President Obama

EPA opponents in Congress tried to use the Congressional Review Act (CRA) to veto EPA regulations to limit GHG emissions from power plants. The CRA creates a special fast-track procedure permitting an up-or-down vote in each house of Congress. On 17 November 2015, the U.S. Senate passed a joint resolution of disapproval of the EPA's new performance standard by a vote of 52-46, with only three Democrats supporting the resolution and three Republicans voting against it. The disapproval resolution was adopted by the House by a vote of 235-188 on 1 December 2015, even as the Paris climate negotiations were taking place. A resolution disapproving the EPA's Clean Power Plan regulations for existing power plants passed the Senate on 17 November 2015 by a vote of 52-46. The resolution passed the House by a vote of 242-180 on 1 December 2015. This all turned out to be political theater because, as promised, President Obama vetoed both joint resolutions of disapproval on 18 December 2015. As a result, the regulations remain in effect.

On 4 November 2015, the U.S. Senate voted 53-44 to use the CRA in an attempt to veto the EPA's rule clarifying the reach of federal jurisdiction under the Clean Water Act. On 13 January 2016, the U.S. House, voting largely on party lines, joined the Senate in passing the disapproval resolution. However, President Obama vetoed the disapproval resolution on 20 January 2016, preserving the regulations.

International Environmental Law

U.S/China Climate Agreement Helps Spawn Landmark Global Agreement in Paris

In September 2015, Chinese President Xi Jinping made a state visit to the U.S. The Chinese and U.S. Presidents released a Joint Statement on Climate following up on their historic November 2014 agreement to work together to reduce GHG emissions. The Chinese President announced that China would establish a nationwide cap-and-trade program for carbon emissions, based on the seven pilot emissions trading programs that the country has already established in major Chinese cities. On 12 December 2015, the nations of the world unanimously endorsed a new global climate agreement in Paris at the conclusion of the 21st Conference of the Parties to the UN Framework Convention on Climate Change (COP21). It is an historic achievement because for the first time it commits virtually every country in the world to take action to control their GHG emissions. While it is well recognized that the 'intended nationally determined contributions' (INDCs) each country made will not, taken together, be sufficient to meet the global target of keeping the rise in global temperatures well below 2 degrees celsius, countries committed to strengthening their commitments every five years and a robust system of transparency and monitoring is to be established to measure progress.

President Obama Denies Approval for Canada's Keystone XL Pipeline Project

On 6 November 2015, President Obama announced that he had accepted Secretary of State John Kerry's recommendation to reject TransCanada's application to build the Keystone XL pipeline. The decision ends a seven-year process during which the pipeline became a top political controversy with strong support from Republicans and opposition from every Democratic presidential candidate. Announcing his decision, President Obama stated that 'America is now a global leader when it comes to taking serious action to fight climate change, and frankly, approving this project would have undercut that leadership.' TransCanada subsequently announced that it will challenge President Obama's decision as a violation of the North American Free Trade Agreement.

U.S./Cuba Environmental Agreement

On 18 November 2015, the U.S and Cuba signed an agreement pledging cooperation on marine research and protection issues. Under the agreement, scientists with the U.S. National Oceanic and Atmospheric Administration (NOAA) who are responsible for marine sanctuaries in the Florida Keys and the Texas Flower Garden Banks national sanctuary will work with scientists from Cuba's Guanahacabibes National Park and Banco de San Antonio in the westernmost part of Cuba. This agreement has been hailed as opening the door to more extensive environmental cooperation between the two countries in the future.

U.S. Permits Oil Drilling in Arctic Waters, but Shell Abandons Drilling

On 23 July 2015, Royal Dutch Shell received two permits from the federal government to begin exploratory oil drilling in the waters of the Chukchi Sea off the northwestern coast of Alaska. While other major oil companies have stopped plans for drilling in the Arctic because they deem it too risky, Shell spent more than US$7 billion over a decade to drill in the Arctic. After drilling one well, Shell announced in late September 2015 that it would end its oil exploration off the north coast of Alaska because of 'disappointing results.' Many observers believe that Shell abandoned drilling because it made little economic sense in light of the plunge in global oil prices. On 16 October 2015, the U.S. Department of Interior announced that it was cancelling auctions that had been scheduled for the next two years for oil drilling rights in the Chukchi and Beaufort Seas off the northern coast of Alaska. Interior Secretary Sally Jewell cited market conditions and Shell's abandonment of its Arctic drilling program. The government also denied requests for lease suspensions from Shell and Statoil, which means that their existing 10-year leases will expire in 2017 and 2020.

Chevron/Ecuador RICO Judgment Appealed

The decades-long saga of efforts by villagers in Ecuador to seek redress for oil pollution allegedly caused in the 1970s by an American oil company continued in 2015. In 2011, the villagers

obtained a US$9 billion judgment against Chevron from a court in Ecuador. Chevron responded by suing the plaintiffs and their lawyers in the U.S., alleging that the lawsuit was a fraud. In 2014, U.S. federal district Judge Lewis A. Kaplan ruled that the judgment had been obtained by fraud perpetrated by U.S. lawyers for the plaintiffs. The judge barred any enforcement of the judgment in the U.S. and barred the U.S. lawyers from receiving any of the proceeds from collection of the judgment in other countries. On 20 April 2015, the U.S. Court of Appeals for the Second Circuit heard an appeal of Judge Kaplan's order. While no decision has been issued by the court, one of the judges at oral argument responded with anger when Chevron's counsel argued that the corporation should not be bound by a prior commitment to accept the judgment of the Ecuadoran courts in return for the case being dismissed from U.S. courts where the plaintiffs initially filed it in 1993.

Lawsuit against ExxonMobil Allowed to Proceed under Alien Tort Statute

In *Doe v. Exxon Mobil Corp*. No. 01-1357 (July, 2015), federal judge Royce Lamberth refused to dismiss a lawsuit against ExxonMobil charging human rights abuses in connection with the development of natural gas facilities in Aceh Province Indonesia in 2000 and 2001. The plaintiffs allege that Exxon was complicit in the murder of villagers opposed to the project by Indonesian security forces. Judge Lamberth distinguished the Supreme Court's decision in *Kiobel v. Royal Dutch Petroleum* 133 S.Ct. 1659 (2013), which dismissed a lawsuit alleging similar abuses by Shell Oil in Nigeria, because Shell is a foreign company while ExxonMobil is headquartered in the United States. The lawsuit was initially filed in 2001, alleging claims arising under the Alien Tort Statute (ATS). The plaintiffs allege that Exxon violated five norms of international law: norms against torture; extrajudicial killing; cruel inhuman and degrading treatment; arbitrary detention; and disappearance. The court concluded that jurisdiction is available under the ATS for 'claims that sufficiently touch and concern the United States to displace the presumption against extraterritoriality.' The court noted that the plaintiffs allege that Exxon executives in the U.S. received regular reports about human rights abuses by their security forces and planned and authorized their actions.

Conclusion: Court Battles Loom as 2016 Presidential Election Approaches

In 2016 legal challenges to key EPA regulations, including the Clean Power Plan and the 'Waters of the U.S.' rule will be heard in court. Even if the rules are upheld, a new Republican administration may seek to repeal them. Because virtually every Republican presidential candidate has pledged to repeal EPA regulations, their future will depend largely on the results of the 2016 presidential election, which will be held on November 8, 2016.

BOOK REVIEW: ENVIRONMENTAL LAW DIMENSIONS OF HUMAN RIGHTS

Ben Boer (ed)
Oxford University Press (2015)
272 pp, ISBN: 9780198736141

Elizabeth Burleson*

Human rights and environmental issues have long been intertwined. Recognition of this relationship is on the rise. As individuals with expertise in each field increasingly bridge the epistemic divide, they see the commonalities and challenges involved in integrating human and environmental legal analyses. This book takes on this vast topic by gathering experts that critically analyze strategic elements of the human rights and environment tapestry. In this endeavor, Boer, both as editor and chapter author, and his co-authors succeed. Each delves into a different aspect of the links between environmental law and human rights in substantive and/or procedural terms. The book deftly explores four broad themes (1) private sector, (2) regional human rights tribunals, (3) Asian institutional and judicial, and displacement developments, and (4) the way forward for human rights and the environment.

The chapters are nuanced and clear, providing insights of interest to novice and veteran scholars alike. The book is thus valuable as critical reading to understand environmental and human rights interrelationships as well as a review of the complicated ways in which law and politics interact.

Calling for greater legal corporate accountability, Natasha Affolder highlights the impact that corporations continue to have on the human rights of citizens. After introducing the legal actors, she analyzes the legal tools, particularly contractual arrangements with communities, governments, and other entities that provide environmental governance to protect human and environmental integrity. As Affolder concludes, through enhanced corporate engagement with environmental rights, the tension between rights and market approaches can become better recognized and addressed in a manner that protects environmental and social integrity.

This discussion dovetails into an astute critique by Elisa Morgera addressing multinational corporation accountability pursuant to the *Convention on Biological Diversity's* benefit-sharing provision. Given the reality of contemporary lobbying leading to weakened regulation, she

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considers the role of law in refocusing corporations' priorities from pure profit maximization to seriously owning their respective responsibilities for common concerns of stakeholders. Beyond corporate'responsibility,' full corporate accountability can facilitate environmentally sound conduct. She highlights environmental impact assessment as a key means of bringing to light both social and environmental dimensions of corporate activity. Environmental impact assessments have done substantial heavy lifting in affecting decision-making processes. Environmental/human rights stakeholder engagement and participation significantly contribute to integrating human rights concerns into environmental assessments.

Riccardo Pavoni provides a comparative analysis of the European and Inter-American human rights courts' respective environmental jurisprudence. Procedural participation rights in these tribunals have marked a crucial milestone in expanding access to tribunals for those seeking judicial redress in environmental matters. In particular, as Pavoni describes, the European Court of Human Rights provides a best practice in linking rights to information and freedom of expression generally and for human rights defenders in particular.

Ludwig Kramer then considers the procedural rights debate between human rights and the environment in the context of environmental justice. His analysis of the right of access to environmental justice focuses on European Court of Justice jurisprudence. He argues that *Article 263* of the *Treaty on the Functioning of the European Union* (TFEU) concerning access to environmental justice has been given a very restrictive interpretation by the Court, an interpretation based more on political than legal grounds. This interpretation has substantial room for expansion pursuant to the Aarhus Convention Compliance Committee findings that the Court's current interpretation violates the European Union's obligations under the *Aarhus Convention*. Kramer calls for the Court to grant environmental non-governmental organizations standing on the basis of specified criteria as is done in a range of jurisdictions in Europe, and indeed, in a number of jurisdictions around the world.

Ben Boer addresses Asia-Pacific governmental and non-governmental human rights institutional development. Regional human rights instruments and substantive environmental rights are still only newly recognized throughout this region. Boer focuses on the *ASEAN Human Rights Declaration* (2012) and the inclusion of a right to a 'safe, clean and sustainable environment,' together with related rights. The Terms of Reference of the ASEAN Intergovernmental Commission on Human Rights provides that as a basic principle, decision-making is to be based on consultation and consensus. Boer goes on to analyze national constitutionalization of environmental rights throughout the Asia-Pacific region. He includes some crucial Asian court decisions addressing constitutional 'right to life' provisions as a basis for the establishment of environmental rights.

Stefan Gruber focuses on climate change displacement, including the right to life, and the human rights to food, water, health, and adequate housing. Pacific Island communities, South and Southeast Asia delta communities, and arid Northern China regions are all projected to see

substantial migration of peoples. Gruber rejects the *1951 Refugee Convention* as an adequate instrument to assist displaced people. He concludes that displacement needs to be addressed in conjunction with environmental law considerations. This provides a jumping off point for other scholars to contribute ways in which such interaction can occur. The international community needs to move beyond recognizing the gap in legal status for climate migrants to actually offering a legal framework.

Alan Boyle asks why recognize environmental protection as a human right. His answer is that a human rights perspective directly addresses environmental impacts on the life, health, private life, and property of individual humans. Boyle suggests expanding economic and social rights to include recognizing public interests in environmental protection—concluding that a right to a decent environment in some form should be broadly recognized.

He reviews a series of European Court of Human Rights cases that have recognized the right to private life and the right to life itself. He then analyzes the *Aarhus Convention's* expansion of environmental and human rights law. Boyle also considers the UN Independent Expert recommendation on the enjoyment of a 'safe, clean, healthy and sustainable environment' as an aspect of human rights. Boyle asks a challenging question: is it better to expand recognition of a right to a decent environment or would simply interpreting existing human rights law suffice. Boyle favors expansion within the context of the existing economic, social and cultural rights paradigm, which already recognizes rights to water, food, and environmental hygiene rather than engaging in the more challenging endeavor of expanding civil and political rights to encompass environmental rights.

Given the focus on the legal links among human rights and environmental dimensions, this reviewer would have liked a fuller discussion of how to enhance recognition of procedural environmental human rights. Access to Information, Public Participation, and Access to Justice can do substantial heavy lifting to give environmental rights greater stature without sinking any existing human rights regime. That said, these vast fields are not easily distilled into a single volume without losing form and substance. Thus, this book is a very valuable resource for the international lawyer or student thinking comparatively about human and environmental law and policy. Beyond its *ad hoc* assessments of given linkages, this book spans several specializations and offers comparative insights that come from studying dynamics that challenge integration of international law regimes. This book's analyses touch on some of the most important human rights and environmental interrelationships. Despite a desire for this book to have been capable of canvassing a broader range of linkages (better suited to a book series then a single volume) this book's collection of analyses is a valuable contribution to this new, and still developing field of international law. It is recommended reading for those seeking a greater understanding of the ways in which human and environmental rights challenge one another and are synergistic.

BOOK REVIEW:
GLOBAL ENVIRONMENTAL CONSTITUTIONALISM

James R. May and Erin Daly
Cambridge University Press (2015)
428 pp, ISBN: 9781107022256

Louis J. Kotzé*

Constitutional environmental protection is not a new phenomenon. One view is that the first reference to environmental protection can be traced to the Romanian Constitution of 1866.[1] Today, the clearest expression of constitutional environmental protection is generally accepted to manifest itself through human, and more particularly, through environmental rights. Josh Gellers indicates that the first environmental right that found its way into a constitution was in 1974 when Yugoslavia adopted such a right.[2] Significantly, this date corresponds with the 1972 *Stockholm Declaration of the United Nations Conference on the Human Environment*[3], which is considered the first global regulatory impetus that sparked the exponential growth of international, regional and national environmental law regimes, including their rights-related aspects. The Preamble of the Declaration stated in its first paragraph, rather progressively for that time (but notably in masculinist anthropocentric terms): 'Both aspects of man's environment, the natural and the man-made, are essential to his well-being and to the enjoyment of basic human rights—even the right to life itself'. David Boyd, a pioneer studying the phenomenon of constitutional environmental protection, recently estimated that three quarters of the world's constitutions (150 out of 193) include explicit references to environmental rights and/or environmental responsibilities.[4] This is a surprisingly large number if one considers that the right to a clean or healthy environment is one of the few

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1 Zachary Elkins, Tom Ginsburg and James Melton 'Comparative Constitutions Project Characteristics of National Constitutions' 2014 version 2.0, available at http://comparativeconstitutionsproject.org/ccp2015/download-data/.

2 Joshua Gellers 'Explaining the Emergence of Constitutional Environmental Rights: A Global Quantitative Analysis' 2015 6(1) *Journal of Human Rights and the Environment* 75-97.

3 11 ILM 1416 (1972).

4 David Boyd 'Constitutions, Human Rights, and the Environment: National Approaches' in Anna Grear and Louis Kotzé (eds) *Research Handbook on Human Rights and the Environment* (Edward Elgar, 2015) 171-175.

rights widely recognized in modern constitutions that have no roots in the so-called International Bill of Rights (a collection of foundational UN documents and treaties on human rights). As a juridically and moral-ethically elevated expression of constitutionalism through rights, environmental protection today has the possibility of assuming greater status, and hopefully a higher level of regulatory priority and care within the protective realm of legal systems worldwide. As well, the prominence of rights-based environmental protection has now gained universal prominence at the strategically important global political level with the establishment of the United Nations Special Rapporteur on Human Rights and the Environment, Professor John Knox.

In tandem with the normative development and spread of environmental rights the world over, scholars have been searching for a common, rigorous, analytically grounded framework within which to situate, and to critically interrogate, constitutional environmental protection. The term that has emerged (and that continues to mature) for this framework, is *environmental constitutionalism*. The term itself is much wider than environmental rights, which as a category of constitutional environmental protection, forms part of the more encompassing environmental constitutionalism paradigm. Thus, in addition to environmental rights, constitutional aspects such as the rule of law, separation of powers, judicial independence, democracy, and constitutional supremacy, are now part and parcel of the wide focus of environmental constitutionalism's analytical scope.[5]

James May and Erin Daly, both distinguished professors at Delaware Law School at Widener University in the USA, have over the past decade established themselves as luminaries and leading scholars in the field of environmental constitutionalism. Enriched with a strong comparative constitutionalism perspective, their work focuses predominantly on environmental rights in various national jurisdictions around the world, but also more broadly on some of the other aspects of environmental constitutionalism outlined above. As an environmental law scholar with significant practical experience, May is, among others, Director of the Global Environmental and Natural Resources Law Institute and Co-director of the Environmental Law Centre at Delaware Law School, Widener University. He has litigated more than 200 public interest environmental claims. Daly is regarded globally as a foremost constitutional law expert, and her work more specifically focuses on comparative constitutional law and transitional justice. Combining their specialist respective skills, these scholars have over the years managed to initiative, direct, sustain, and to significantly deepen the environmental constitutionalism debate and analytical agenda. Their widely cited publications that focus on environmental constitutionalism are to numerous to list here, but the essence of the scholarship that has been offered by this burgeoning body of work has recently culminated in what could be considered the most important publication on environmental constitutionalism since David Boyd's *The Environmental Rights Revolution* (UBC

[5] See generally, Louis Kotzé Global Environmental Constitutionalism in the Anthropocene (Hart, Oxford, 2016).

Press, 2012). Published in 2015 by Cambridge University Press, their book, entitled *Global Environmental Constitutionalism*, uses a comparative law approach to survey the trends in constitutional protection for environmental rights around the world and examines the challenges to and opportunities for judicial enforcement of those rights in a multitude of jurisdictions.

The book is divided into three parts: Part I, Evolution and Existence of Environmental Constitutionalism; Part II, Vindication and Practices in Environmental Constitutionalism; and Part III, Emergence and Future of Environmental Constitutionalism. Part I comprises two chapters that provide the theoretical and contextual foundation of the book. Chapter One, *The Nature of Environmental Constitutionalism*, broadly explores what constitutionalism means, what its value is in the environmental context, what its limitations and possibilities are, and what the place of rights is in the constitutionalism paradigm. Chapter Two, *Textualizing Environmental Constitutionalism,* focuses more specifically on the issue of rights, the likelihood of constitutions providing environmental rights, and the different manifestations of environmental rights which, they argue, reach well beyond the axiomatic 'right to a healthy environment' formulation. The value of this introductory inquiry especially is its significant addition to the nascent conceptual interrogation of environmental constitutionalism. It succeeds in mapping and critically evaluating environmental constitutionalism, including its rights-related aspects.

Departing from Part I's theoretical and conceptual analysis, Part II, chapters Three, Four and Five, turns to the practical aspects of environmental constitutionalism. The analysis focuses on the adjudication of environmental rights, the enforcement of environmental rights, and appropriate remedies. Specific issues that are discussed include, among others: obstacles in environmental rights adjudication, justiciability, standing, procedural rules challenges, defences and limitations, state obligations and enforcement challenges. This part especially succeeds by drawing on good practice examples from various jurisdictions that explicate and guide the actual enforcement and adjudication of environmental rights.

The final part of the book turns the analytical focus to emerging manifestations and applications of environmental constitutionalism. Chapter six focuses on the right to water as an environmental right. Chapters Seven, Eight and Nine then grapple with subnational (local, provincial, federal) environmental constitutionalism; procedural environmental rights; and more controversially, the emergence of contentious forms of environmental constitutionalism such as the rights of nature, the public trust doctrine, climate change and environmental sustainability. I found this final re-imaginary part thought provoking, especially to the extent that it pries open axiomatic epistemic closures that continue to shut out alternative, but not altogether unrealistic, modes of thinking about environmental constitutionalism.

In sum, May and Daly, two remarkable thought-leaders in the field, have provided us with a landmark publication that is so much more than a comprehensive textbook focusing on environmental rights. Together with Boyd's influential body of work, *Global Environmental Constitutionalism* completes the Northern American-based scholarly treatise on environmental

constitutionalism. It is a remarkable piece of work that offers a wide audience essential information on and analysis of the global emergence of environmental rights within the environmental constitutionalism paradigm. This book is an indispensible and highly relevant resource for everyone interested in environmental constitutionalism. I can recommend it unconditionally.

BOOK REVIEW
OXFORD HANDBOOK OF THE LAW OF THE SEA

D. Rothwell, A. Oude Elferink, K. Scott, and T Stephens (eds)
Oxford University Press (2015)
1072pp, ISBN 978-0-19-871548-1

Naporn Popattanachai*

Before the publication of this impressive and indispensable handbook, it was extremely difficult, if not impossible, to find an up-to-date law of the sea book that addresses almost every aspect of the sea and its current development. This handbook is published at a time when the law of the sea has become one of the most significant challenges to contemporary international law and international community. This book provides international lawyers' state-of-the-art knowledge; it provides more experienced lawyers with fresh updates and insights and thoroughly presents students with a current and comprehensive education and resource on the law of the sea. The book contains 39 chapters that range from classic to contemporary issues. It is a reader-friendly book which covers the basics and complexities of traditional law of the sea, maritime zones, rights and obligations of interested States, and addresses contemporary issues of the law of the sea such as marine environmental protection, maritime delimitation and marine natural resources. Experienced academics and practitioners, and students who have chosen the law of the sea and international marine environmental law as their field of research will find this timely book to be an important and valuable tool in their work.

The development of the law of the sea is addressed in the first three chapters. In Chapter 1, Treves narrates the historical development of the law of the sea before the adoption of the United Nations Convention on the Law of the Sea (UNCLOS) in 1982. Then, Churchill explains the legal nature of the UNCLOS, highlighting its framework treaty characteristic, the 'mixture of codification and progressive development of the law', and legal topics such as the deployment of 'rules of reference' and the relationship between the UNCLOS and other treaties, and customary international law. Buga observes that the application of the UNCLOS has been shaped by State Parties over time, as evidenced by the subsequent practice of States in terms of influencing and modifying its application, exemplified by the adoption of the 1994 Agreement related to the Implementation of Part XI of the UNCLOS. This is very helpful for the newcomers to the law of the sea as these chapters equip them to understand how the law of the sea has evolved during the

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past thirty years, its special characteristics, and some (arguably) legal peculiarities of the UNCLOS, particularly the relationship between the UNCLOS and its implementing agreements.

Classical topics of the law of the sea such as maritime zones and the rights and obligations of States – coastal, flag, and port States are indispensably provided in this handbook. The added value to this handbook is its clear description of the relevant law of the sea institutions by insightful practitioners. For example, in Chapter 16, Corell, a former Under-Secretary-General for Legal Affairs and Legal Counsel of the United Nations, explains, based on his experience, how both the issues of Oceans and issues of the Law of the Sea have been managed by UN institutions, departments, and specialised agencies since the adoption of the UNCLOS. In Chapter 18, Oxman presents a very good account of, and introduction to, the dispute settlement procedure of the UNCLOS, and includes thoughtful comments on possible legal complications regarding certain provisions, e.g., articles 297 and 298 of UNCLOS, which may disrupt the dispute settlement procedure. The operation of the International Maritime Organisation (IMO) is also addressed in this book.

New developments of the law of the sea relating to marine resources and the protection of the marine environment are addressed in several chapters of this handbook. Chapter 21 is significant in this respect, in Scott's examination of the concept of 'integrated ocean management'. She highlights the emergence of a shift in ocean governance from zonal and sectoral, inherent in the UNCLOS, to an integrated approach, designed to accommodate the consideration of a wide range of maritime activities and potential conflicts arising from them. The common elements of integrated ocean management are singled out in this chapter, which demonstrates that integrated ocean management is implementation varies at both national and regional levels, whereas its implementation at a global level arguably remains elusive. In terms of the protection of the marine environment, in Chapter 23, Kirk explains the interplay between science and international regulations of marine pollution, illustrating how science influences the regulation of different sources of pollution and the approaches taken by States to address it via decision-making processes based on the development of scientific knowledge.

This handbook also contains up-to-date information related to more challenging marine environmental topics, such as marine living resources, fisheries management, marine biodiversity, and ocean acidification. Warner, in Chapter 33, addresses conservation of marine biodiversity in areas beyond national jurisdiction and describes the complex web of relevant regimes in regulating the issue. She outlines key normative legal and institutional frameworks as well as different approaches adopted by various regimes, identifying gaps and disconnects in the governance of marine biodiversity in areas beyond national jurisdiction. The chapter discusses selected governance disconnect problems, including fisheries, regional seas arrangements. In analyzing global and regional initiatives to address these challenging governance issues this chapter innovatively calls for integration and reconciliation of the 'modern conservation norms and objectives of international marine environmental law and the law of the sea.'

In Chapter 36, Mossop provides a very good introduction to marine bioprospecting. The chapter provides basic information regarding the meaning and the process considered to be marine bioprospecting. Legal frameworks for this issue are also addressed with particular attention on the UNCLOS and Convention on Biological Diversity (CBD). Concerns regarding the definition of marine bioprospecting are highlighted such as the potential tension regarding distribution of rights and obligations among States under the law of the sea regime that arises from the conflicting classifications of marine bioprospecting and marine scientific research. This chapter concludes that marine bioprospecting does not fall within the regime of marine scientific research under the UNCLOS. The chapter later delves into bioprospecting within and beyond areas of national jurisdiction, discussing rights and obligations of States in regulating and conducting marine bioprospecting. Here, the UNCLOS and CBD differ as to the rights and obligations in different maritime zones and to the distribution of benefits from biodiversity resources. The potential profitability of marine genetic resources implies that marine bioprospecting will be one of the hot law of the sea and international marine environmental law issues requiring a comprehensive and integrated international regulation from international community.

The Oxford Handbook of the Law of the Sea should also be praised for its coverage of important region- and regime-specific developments in the law of the sea. Of significance, Papanicolopulu provides useful survey of knowledge related to current developments in the Mediterranean Sea, ranging from the management of maritime zones, maritime delimitation, and other regional cooperation under the auspices of the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention). Similar to the Mediterranean, Zou provides a very good introduction to the on-going tension in the South China Sea in Chapter 28. Information on the historical, legal, and political development of the situation in South China Sea is concisely summarised, as well as attempts to resolve the conflict by bilateral and regional means. The chapter's coverage predates the award of the arbitral tribunal on the jurisdiction and admissibility of the *Republic of Philippines v. The People's Republic of China*[1]. Other regions addressed in this book include the North-East Atlantic Sea (Chapter 29), the Caribbean Sea and Gulf of Mexico (Chapter 30), and the Indian Ocean (Chapter 31).

The comprehensiveness of this handbook will undoubtedly be beneficial to all international lawyers, from academics and students to practitioners. Although it could be more helpful by providing further recommended reading as other Oxford handbooks do, it will be a useful starting platform for international lawyers with a specific interest in the law of the sea to acquire a good understanding of any particular aspect that concerns them before exploring the subject in a wider context. In conclusion, *The Oxford Handbook of the Law of the Sea* can be said to be an extremely impressive and indispensable handbook.

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[1] For more information on *the Republic of Philippines v. the People's Republic of China*, see. http://www.pcacases.com/web/view/7 <accessed 30 October 2015>.