

ENVIRONMENTAL SECURITY AND THE ROLE OF LAW

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1 Introduction

This paper considers the concept of environmental security and the role that law can play in enhancing such security. Specifically, this paper elaborates on how law can be used as a tool to address environmental security threats. First, the paper provides a brief background on the concept of environmental security. Second, it provides a brief overview of the role of law in addressing environmental security threats, including a description of the ‘rule of law’ concept. Next, the paper gives three examples of countries that have enhanced their efforts to address different environmental security threats by integrating legal changes – to help protect a population of single-horned Asiatic rhinoceros in Nepal; to help indigenous people obtain recognition of their rights to land and natural resources in Nicaragua; and to decrease deforestation rates in the Atlantic forest in Paraguay. Lastly, the paper concludes with a call to expand the use of law as a tool to address environmental security threats.

2 The concept of environmental security

Human societies have always depended on the environment for their survival and advancement. Human beings need clean air, safe water and healthy food as a source of energy to subsist, as well as to produce and transport goods; and natural resources to serve as raw materials for goods and services.² In today’s modern era, human societies are collectively exploiting the environment at an increasing and alarming pace

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² United Nations Environmental Programme, *Global Environmental Outlook 5: Environment for the Future*

in order to obtain natural resources to further advance humans needs. The collective exploitation of the environment is being conducted in an unsustainable manner, resulting in rapid depletion and degradation.³

In the last few decades, we have come to understand better the imminent threat that environmental degradation and scarcity of natural resources poses to humans, not only as individuals but also as societies, in relation to international peace and security. This understanding establishes the foundation for the concept known as ‘environmental security’; a two-fold concept that mixes security and environmental aspects together. First, the concept places emphasis on the environmental aspects related to security, as to the maintenance of ecosystems, and the use of natural resources in a sustainable manner.⁴ Further, the concept also places emphasis on the traditional aspects of security in relation to the prevention and management of natural disasters, and conflicts triggered by the degradation of the environment and scarcity of natural resources.⁵ In brief, the underlying idea behind environmental security is to establish a balance between humans and the environment in relation to the maintenance and sustainable use of natural resources by all human societies, with the ultimate goal being the promotion of international cooperation, peace, and security.⁶

The concept of environmental security evolved from the concept of ‘national security’.⁷ National security has traditionally been seen as a matter associated with the military defence of a sovereign territory from any foreign threat – that is to say, any threat from any other sovereign territory, an exogenous threat.⁸ However, endogenous threats such as civil conflicts, overpopulation, and public health crises are also matters associated with national security.⁹ In the last few decades, it has been recognized that environmental threats – such as climate change, deforestation, extreme weather events, and lack of water and food security – add a new level of complexity to the matter of national security, since threats can either be exogenous or endogenous, or both.¹⁰ Thus, it is more than clear that both exogenous and endogenous threats have an impact on national security. As a result, countries hoping to address environmental threats must not only be ready to deal with them within their own territory, but must also collaborate with other countries to address them. In other words, there is a need to address environmental threats at both the national and the international levels.

We Want (UNEP, 2012), available at <<http://www.unep.org/geo/geo5.asp>> (visited 17 November 2015) at xviii.

³ *Ibid.*

⁴ Jutta Brunnée, ‘Environmental Security in the Twenty-First Century: New Momentum for the Development of International Environmental Law?’, 18 *Fordham International Law Journal* (1994–1995) 1742–1747 at 1742.

⁵ *Ibid.*

⁶ *Ibid.*

⁷ Elizabeth L. Chalecki, *Environmental Security: A Guide to the Issues* (ABC-CLIO, 2013) 5–14.

⁸ *Ibid.*

⁹ *Ibid.* at 3.

¹⁰ *Ibid.* at 15–23.

Today, the concept of environmental security is linked to concerns related to human security (food security, freedom, human rights, etc.); to the security of the environment (deforestation, extension of species, ecosystems, etc.); to environmental factors (climate change, floods, droughts, and resource scarcity, etc.); and to armed conflicts (civil wars, terrorism related conflicts, etc.), to name but a few. A thorough definition of the concept of environmental security, and a detailed explanation on the different environmental security threats and linked concepts and ideas, are beyond the scope of this paper.¹¹

It is worth noting that different elements of the concept of environmental security – such as the depletion of natural resources, climate change, deforestation, extreme weather events, water and food security, transboundary pollution, and environmental protection during armed conflicts – have been core global issues for the international community for decades. Major global discussions and negotiations on the relationship between human beings and the environment have taken place, resulting in the development of influential legally binding and non-legally binding international environmental instruments.¹² By setting international agendas and raising global awareness on environmental issues, these and many other instruments have demonstrated the need to address environmental threats systematically, collaboratively and with attention to integration of different sectors. Perceptions and understandings of the concept of environmental security and related threats have evolved over the years, making environmental security an evolving concept adaptable to the changing needs and circumstances (mainly as a result of the scientific advances and evidence over the years) at all of international, regional, national and local levels. Although not many of these instruments have included the topic of security *per se*, many have suggested implementing approaches that address a range of environmental threats with potential security implications.

Global discussions and negotiations have played an important role in shaping the general environmental principles known today. These environmental principles have emerged, and can be said currently to be evolving, to address the changing needs and

¹¹ For more information on the concept of environmental security and related threats see Rita Floyd and Richard Matthew, *Environmental Security: Approaches and Issues* (Routledge, 2013); and Chaleckiat, *Environmental Security*, *supra* note 7.

¹² Such as the United Nations Conference on the Human Environment held in Stockholm, Sweden from 5 to 16 June 1972, which produced the Stockholm Declaration (Declaration of the United Nations Conference on the Human Environment, Stockholm, 16 June 1972, UN Doc. A/CONF.48/14/Rev.1 (1973), 11 *International Legal Materials* (1972) 1416); the United Nations Conference on Environment and Development held in Rio de Janeiro, Brazil from 3 to 14 June 1992, which produced the Rio Declaration (UN Declaration on Environment and Development, Rio de Janeiro, 14 June 1992, UN Doc. A/CONF.151/5/Rev.1 (1992), 31 *International Legal Materials* (1992) 876); the World Summit on Sustainable Development held in Johannesburg, South Africa from 26 August to 4 September 2002, which produced the Johannesburg Declaration (Johannesburg Declaration on Sustainable Development 'From our origins to the future', Johannesburg, South Africa, 4 September 2002, UN Doc. A/CONF.199/20 (2002)); the United Nations Conference on Sustainable Development held in Rio de Janeiro, Brazil from 13 to 22 June 2012, which produced the Rio+20 Outcome Document 'The Future We Want' (UNGA Res. 66/288 of 11 September 2012).

circumstances of each decade. Environmental principles have been developed to address intertwined environmental security threats related to food production, access to water, management of natural resources, energy, climate change, and natural disasters, to name just a few. Some of the general environmental principles that have acquired broad recognition include the principles of sustainable development; integration and interdependence; inter-generational and intra-generational equity; responsibility for transboundary harm; transparency, public participation and access to information and remedies; common but differentiated responsibilities; precaution; prevention; polluter pays; common heritage; and good governance.¹³ These environmental principles combine to create the basic rules and minimum standards for the interaction between humans and the environment at all levels — at the international, regional, national and local levels.

Notably, these developments aid in the evolution of the concept of environmental security and related threats as we understand them today – a need for human societies to conserve natural resources and to use them sustainably to prevent conflicts, to cooperate to address natural disasters, and to maintain international peace and security.

3 The role of law in environmental security

It is increasingly apparent that environmental projects need to be underpinned and supported by sound legal principles. The role of law needs to be adapted to the changing needs and circumstances of particular projects in particular societies. Jurisprudential justification for including legal components is provided by the ‘rule of law’ concept.

This paper will not provide a detailed analysis of the rule of law concept,¹⁴ but it will provide a general overview of the concept as understood and accepted by the international community today. The rule of law concept is embedded in the United Nations system, where it is defined as:

[a] principle of governance in which all persons, institutions and entities, public and private, including the State itself, are accountable to laws that are publicly promulgated, equally enforced and independently adjudicated, and which are consistent with international human rights norms and standards. It requires, as well, measures to ensure adherence to the principles of supremacy of law, equal-

¹³ See, for instance, Lal Kurukulasuriya and Nicholas A. Robinson (eds), *Training Manual on International Environmental Law* (UNEP, 2006) 23–37; Ole W. Pedersen, ‘Environmental Principles and Environmental Justice’, 12 *Environmental Law Review* (2010) 26–49; Bruce Party, ‘Towards an Environmental Rule of Law’, 17 *Asia Pacific Journal of Environmental Law* (2014) 163–175 at 165; see also Brunnée, ‘Environmental Security’, *supra* note 4, at 1745–1747.

¹⁴ For more information on the rule of law concept, see Pietro Costa and Danilo Zolo (eds), *The Rule of Law History, Theory and Criticism* (Springer Science & Business Media, 2007); and Brian Z. Tamanaha, *On the Rule of Law: History, Politics, Theory* (Cambridge University Press, 2004).

ity before the law, accountability to the law, fairness in the application of the law, separation of powers, participation in decision-making, legal certainty, avoidance of arbitrariness and procedural and legal transparency.¹⁵

A strict interpretation of the rule of law concept can simply see it as a procedure of international and national governance, requiring states and citizens, institutions and entities, public and private, to be accountable to the law. However, a practical interpretation of the concept of the rule of law can see it as an enabling tool for change, where linkages exist between the rule of law concept and the concept of development. For instance, the rule of law concept can be used in a proactive manner to enable economic growth; promote equality, inclusion and social justice; prevent and mitigate crime and conflicts; strengthen accountability and checks on powers; and support sustainable development and natural resource management.¹⁶ As a result, a practical interpretation of the rule of law calls for adequate and effective laws and judicial systems, access to justice and information, public participation, accountability, transparency, fair and just enforcement, and human rights.

In relation to environmental security, the rule of law concept can be used as a tool to address environmental security related threats. Specifically, the rule of law concept can be used to promote accountability of governments, businesses and citizens; just and inclusive environmental frameworks; and processes for the enforcement of environmental laws and policies. In fact, the past decades have observed important developments in relation to the rule of law concept and environmental security related threats at the international level. As is explained below, the international community is increasingly looking at the rule of law concept as a practical and fundamental tool to address present and future environmental security threats.

In 2012, the United Nations Environment Programme (UNEP) World Congress on Justice, Governance and Law for Environmental Sustainability,¹⁷ held in parallel to the Rio+20 Conference, brought together leading legal experts from around the world to contribute to the debate on the environment. They declared that diplomatic outcomes related to the environment will require adherence to the rule of law for their effective implementation at the national level – resulting in a new affirmation on the importance of the rule of law for addressing environmental security related threats.¹⁸ In the same year, the United Nations General Assembly adopted of a resolution on the rule of law,¹⁹ which underlined the importance of fair, stable and pre-

¹⁵ Report of the Secretary General on the rule of law and transitional justice in conflict and post-conflict societies to the Security Council, UN Doc. S/2004/616 (2004).

¹⁶ UNEP, 'Integrating Rule of Law in the Post-2015 Development Framework', *Issue Briefs*, January 2013, 1–11 at 3–4.

¹⁷ UNEP World Congress on Justice, Governance and Law for Environmental Sustainability held in Rio de Janeiro, Brazil, in June 2012.

¹⁸ UNEP, 'About the World Congress', available at <<http://www.unep.org/delc/worldcongress/TheWorldCongress/tabid/55695/Default.aspx>> (visited 13 April 2015).

¹⁹ 'Declaration of the high-level meeting of the General Assembly on the rule of law at the national and international levels', UNGA Res. 67/1 of 30 November 2012.

dictable legal frameworks for generating inclusive and equitable development and maintaining peace and security.²⁰ In addition, a report was placed in front of the UNEP Governing Council in 2013 providing information on developments related to the rule of law, particularly environmental law, and suggesting the need to further advance justice, governance, and law for environmental sustainability.²¹ As a result, the UNEP Governing Council adopted a decision²² that recognized the importance of the rule of law for environmental security, particularly in relation to reducing violations of environmental law and to achieving sustainable development overall. The decision states that: '[t]he violation of environmental law has the potential to undermine sustainable development and the implementation of agreed environmental goals and objectives at all levels and that the rule of law and effective governance play an essential role in reducing such violations.'²³

These developments have led to the recent Global Symposium on Environmental Rule of Law, held in parallel to the first session of the United Nations Environmental Assembly in 2014.²⁴ The Symposium built on UNEP's World Congress from 2012 and convened leading legal experts from around the world to discuss the ways and means by which the rule of law can further support societies in addressing environmental security threats and promoting development that ensures just and sustainable outcomes.²⁵

Overall, the key messages from the Global Symposium on Environmental Rule of Law called upon the international community and for the first United Nations Environmental Assembly to recognize the rule of law as a fundamental tool for addressing environmental security related threats by realizing its intrinsic value for environmental justice and sustainable development.²⁶ Consequently, the resolutions and decisions adopted by the first UNEA highlight the importance of the rule of law for addressing threats related to environmental security, and make a call to the international community not to undermine the rule of law and to recognize it as a vital tool for sustainable development at the national, regional and international levels.²⁷ As a result, there is a growing awareness of the importance of the rule of law for environmental security.

²⁰ *Ibid.* para. 8.

²¹ Report of the Executive Director on Justice, governance and law for environmental sustainability to the Governing Council of the United Nations Environmental Programme, UN Doc. UNEP/GC.27/13 (2012).

²² 'Advancing justice, governance and law for environmental sustainability in the Proceedings of the Governing Council/Global Ministerial Environment Forum at its first universal session', UN GC Dec. 27/9 (2013).

²³ *Ibid.* para. 5.

²⁴ UNEP, 'A Global Symposium on Environmental Rule of Law', available at <<http://www.unep.org/unea/erl2.asp>> (visited 13 April 2015).

²⁵ *Ibid.*

²⁶ Summary and key messages from the Environmental Justice and Sustainable Development: A Global Symposium on Environmental Rule of Law, UN Doc. UNEP/EA.1/CRP1 (2014).

²⁷ Proceedings of the Governing Council/Global Ministerial Environment Forum at its first universal session, UN Doc. UNEP/GC.27/17 (2013).

In practice, including the ‘rule of law’ in environmental projects implies that when an environmental problem becomes apparent and it is obvious that the problem has no one simple cause and no one obvious solution, then projects designed to deal with the problem should include legal components. One can go further and argue that such projects should in fact do more than merely *include* legal components – projects should include relevant legal principles as integral components.

This is equally true for both international and national laws. While the majority of projects will probably be national in scope, significant numbers of projects will deal with problems that have transboundary implications and are influenced by physical or human actions – such as those presented by shared watercourses affected by floods, alien invasive species introduced by humans, migratory species affected by climate change, and trade-related influences.

In the environmental field, the intricate relationship between international and national laws is increasingly understood. There is an ebb-and-flow between them. International agreements are often reflective of national experiences. National laws, on the other hand, are often influenced by, and even enacted to implement, international environmental agreements. The extent to which national legal regimes prove effective will depend on a range of factors, such as the extent to which society accepts the rationale for laws regulating the environment; the extent to which the state is willing to enact legislation and has capacity to enforce such; and the extent to which actors, both in the international and the national spheres, consider the costs of abiding by such laws to outweigh the advantages than can be gained by disobeying them.²⁸

4 Improving environmental security in practice

Developments at the international level with regard to the rule of law and environmental security are being coupled with developments at the national level. Increasingly, countries are combining the rule of law concept with the general environmental principles when designing and implementing environmental laws, policies, plans, programs and strategies. While the conditions and needs of countries as regards environmental security differ, countries are increasingly using the rule of law to establish effective national environmental governance – with the development of laws; the disclosure of information to the public; the participation of stakeholders in decision-making; the accountability of decision-makers; the creation of clear roles and responsibilities; the establishment of dispute resolution mechanisms; and with the promotion of public integrity, to name a few.²⁹

²⁸ See, generally, UNEP-CAEC, *Enforcement of Environmental Law: Good Practices from Africa, Central Asia, ASEAN Countries and China* (UNEP, 2015), available at <<http://www.unep.org/delc/Portals/119/publications/enforcement-environmental-laws.pdf>> (visited 17 November 2015) at 2–3.

²⁹ Scott Fulton and Antonio Benjamin, ‘Foundations of Sustainability’, 28 *The Environmental Forum* (2013) 32–36 at 34.

This section of the paper will provide some country experiences of how the rule of law concept has been used to address issues related to environmental security in Nepal, Nicaragua, and Paraguay. It must be noted that these rule of law approaches are not perfect examples and are necessarily only snapshots, but they are potentially useful examples of the use of the rule of law as a tool to address environment-related threats in developing countries. The experiences of three developing countries were selected, as these are less documented than are the experiences of developed countries. The examples are intended to demonstrate how these three developing countries have come to use rule of law approaches to address environmental security related threats, but most importantly to inspire the further use of such approaches and the sharing of experiences.

4.1 Nepal – protection of the last population of single-horned Asiatic rhinoceros

Most biological diversity is found within developing countries, and in many cases depletion of biodiversity represents one of the greatest environmental security threats. It is important to preserve as much biodiversity as possible, and the local or even global extinction of high profile species is to be avoided at all costs. The importance of high-profile species is multifold. Often, the reason they are high-profile is because they have important, and often poorly understood, ecological roles to play; sometimes because losing them might mean that the area will never host them again, and its ecology will be forced to change; and often because there are many security-related aspects that arise. These latter aspects might include lost economic opportunities, such as are presented by eco-tourism; as well as direct security threats posed by armed poachers, traffickers and concomitant illegal activities.

The country experience of Nepal relates to environmental security in relation to the protection of a species in danger of extinction, but also in relation to human security that is threatened by illegal activities and armed conflicts that derive from the killing of single-horned Asiatic rhinoceros. The Chitwan National Park located at the foot of the Himalayas covering an area of 93,200 hectares has a rich flora and fauna, and is home to one of the last populations of single-horned Asiatic rhinoceros.³⁰ In 1973, the Nepalese government designated the Chitwan region as Nepal's first national park and provided for its legal protection under the National Parks and Wildlife Conservation Act of 1973.³¹ In addition, the Chitwan National Park Regulation of 1974³² and the Buffer Zone Management Regulation of 1996³³ were enacted to ensure adequate protection of natural resources and people's participation in conservation, as well as socio-economic benefits to people living in the buffer zone – mak-

³⁰ United Nations Educational, Scientific and Cultural Organization (UNESCO), 'Chitwan National Park', available at <<http://whc.unesco.org/en/list/284>> (visited 13 April 2015).

³¹ National Parks and Wildlife Conservation Act, No. 2029, 1973.

³² Chitwan National Park Rules, No. 2030, 1974.

³³ Buffer Zone Management Regulation, No. 2052, 1996.

ing the Chitwan National Park an example of government–community partnership for the conservation of the environment.³⁴

In addition, since 1975, the Nepalese Army has been deployed to protect the Chitwan National Park after an amendment to the National Parks and Wildlife Conservation Act.³⁵ The amendment calls for five to fifteen years of imprisonment to be imposed on offenders for killing any animal listed in schedule one of the Act, including the single-horned Asiatic rhinoceros.³⁶ The National Parks and Wildlife Conservation Act was enacted by the Nepalese authorities to curb the killing of protected animals in Nepal, and its implementation has apparently resulted in a heavy decrease in poaching.³⁷ In 2014, no incident of animal poaching, including the single-horned Asiatic rhinoceros, was recorded by park authorities.³⁸

The National Park and Wildlife Conservation Act of 1973 and its subsequent amendments and supporting regulations have played an important role in strengthening Nepal's conservation efforts. In fact, the population of the single-horned Asiatic rhinoceros has increased from less than one hundred in the late 1950s to more than five hundred by 2011.³⁹ Importantly, it is also worth noting that the fight against wildlife crimes is more than a simple interest in environmental protection, as wildlife crimes also represent a serious threat to human security. Today, organized transnational criminal and terrorist groups are found deeply involved in wildlife crimes, as these groups use the profits from wildlife crimes to buy weapons, and to subsidize civil wars and terrorist activities. For these groups, the trade of wildlife goods constitutes a quick profit in addition to the profits deriving from drug, human, and gun trafficking. Importantly, the illegal actions of these groups undermine good governance and undercut development efforts in the countries they operate. Thus, the country experience from Nepal demonstrates the rule of law, seen in the establishment of a regulatory framework supported by the efforts of the government to implement it, is assisting a country both to address a danger to a specific species; and also to address difficult multidimensional environmental security threats.

One of the inherent weaknesses faced by developing countries dealing with threats to their environments is that enforcement and implementation are rarely effective,

³⁴ UNESCO, 'Chitwan National Park', *supra* note 30.

³⁵ Krishna Prasad Subedi, 'Environmental Rule of law as a Key to Sustainable Development and Environmental Sustainability: Nepalese Perspective', article prepared for the Global Symposium on Environmental Rule (2014), available at <<http://www.unep.org/unea/docs/erl/ERoL-Key-SD-Environmental-Sustainability.pdf>> (visited 10 June 2015) at 6.

³⁶ *Ibid.*

³⁷ *Ibid.*

³⁸ International Union for Conservation of Nature (IUCN), 'Nepal celebrates "zero poaching year" for rhino, tiger and elephant', available at <http://www.iucn.org/news_homepage/news_by_date/?14555/Nepal-celebrates-zero-poaching-year-for-rhino-tiger-and-elephant> (visited 13 April 2015).

³⁹ Government of Nepal, The Greater One-horned Rhinoceros Conservation Action Plan for Nepal (2006–2011) (World Wildlife Fund Nepal, 2006); World Wildlife Fund Global, 'Nepal rhino census shows increase', available at <http://wwf.panda.org/wwf_news/?200112/Collective-conservation-efforts-boosted-rhino-population-in-Nepal> (visited 13 April 2015).

even where legislation and policy are in place. A range of factors contribute to this weakness, including financial constraints, technological limitations, lack of human capacity and the desperation of people who often rely on natural resources to make a living. The concept of the rule of law requires that these issues be addressed.

4.2 Nicaragua – recognition of indigenous peoples’ right to land and natural resources

The Nicaraguan experience is linked to environmental security in relation to human security, specifically in relation to the indigenous people in the country. The experience illustrates how an indigenous community obtained the recognition of their rights over land and natural resources through a rule a law approach, which has empowered them to participate in the protection of the environment and in addressing environmental security threats through their customs and way of life. This will also help address national conflicts related to the rights that they have been awarded.

In 2001, a case against the government of Nicaragua concerning the protection of the rights of indigenous peoples to land and natural resources was brought to the Inter-American Court of Human Rights.⁴⁰ The case challenged the legality of a thirty-year logging concession by the Nicaraguan government to a foreign corporation on lands claimed by the Awas Tingni, an indigenous community of the Mayangna located in the North Atlantic Autonomous Region of Nicaragua.⁴¹ The Awas Tingni community is comprised of around 1,100 persons and has always depended on the land for subsistence farming, gathering, hunting, and fishing.⁴² In fact, the Awas Tingni community has always played an important role in protecting the forest and animals within their lands, as these are vital for their cultural, religious, and family development and continuity.⁴³

The Inter-American Court of Human Rights examined the case and declared that the American Convention on Human Rights guarantees and protects the rights of indigenous peoples in relation to their communal lands and the natural resources within their lands.⁴⁴ Consequently, the Court held that the laws in Nicaragua were ineffective to regulate the lands held by the Awas Tingni community, and that remedies were illusory;⁴⁵ and requested that the government of Nicaragua reform its laws

⁴⁰ *Mayagna (Sumo) Awas Tingni Community v. Nicaragua*, a judgment by the Inter-American Court of Human Rights on 31 August 2001.

⁴¹ S. James Anaya and Claudio Grossman, ‘The Case of Awas Tingni v. Nicaragua: A New Step in the International Law of Indigenous Peoples’, 19 *Arizona Journal of International and Comparative Law* (2002) 1–15; Jeremy Firestone, Jonathan Lilley and Isabel Torres de Noronha, ‘Cultural Diversity, Human Rights, and the Emergence of Indigenous Peoples in International and Comparative Environmental Law’, 20 *American University International Law Review* (2005) 219–292 at 265–268.

⁴² The University of Arizona, ‘Nicaragua issues title to Awas Tingni’s Lands!’, available at <<http://www.law.arizona.edu/iplp/outreach/pdf/Awas%20Tingni.pdf>> (visited 24 February 2015).

⁴³ *Mayagna (Sumo) Awas Tingni Community v. Nicaragua*, *supra* note 40, at 19.

⁴⁴ *Ibid.* at 82–84.

⁴⁵ See Firestone et al, ‘Cultural Diversity’, *supra* note 41, at 266.

to address this inefficiency. In addition, the Inter-American Court of Human Rights stated that the Awas Tingni community has the right to have its communal lands delimited, demarcated and titled by the Nicaraguan government in accordance with their customary laws⁴⁶ – a remarkable recognition of customary laws of indigenous peoples by an international tribunal. Furthermore, the Court added that the possession of land should be sufficient for the Awas Tingni community to obtain official recognition and registration, in cases where the community lacks legal land titles.⁴⁷ In response, the government of Nicaragua handed over to the Awas Tingni community the title to its communal territory, 20,000 hectares of land, in 2008.⁴⁸

This case represents an important precedent, as it was the first legally binding decision by an international tribunal to uphold the right of indigenous peoples to communal land and associated natural resources.⁴⁹ The Court decision and response from the government of Nicaragua is an illustration of the rule of law in action. It recognizes the right of indigenous peoples (who are usually the poorest and most vulnerable groups in society) to advocate for the protection of the environment and the management of natural resources through their customs and way of life, and most importantly to guarantee their well-being (water and food security). It is also worth noting that the recognition of indigenous peoples' right to land and natural resources can play a significant role in preventing or resolving internal conflicts related to environmental security (within indigenous communities or between the government and indigenous communities), and in empowering and safeguarding indigenous peoples from interventions from mining, oil, forestry, and water companies seeking to exploit the environment – their home. It is evident that indigenous peoples can contribute to addressing environmental security threats, such as deforestation and consequently climate change, while enjoying their fundamental rights. Thus, this rule of law based decision and response-action by the government makes it easier for the Awas Tingni community to uphold their rights related to human security and to participate in addressing environmental security related threats that are directly connected to their livelihoods.

4.3 Paraguay – moratorium to halt deforestation in the Atlantic forest

The Paraguayan country experience relates to environmental security in relation to the protection of the environment and to environmental factors that affect human security, specifically deforestation in this case, but also related environmental factors such as climate change, natural resources depletion and environmental degradation. Deforestation is an environmental security threat that can result in many negative effects on human, physical, social and economic wellbeing. It contributes to the instability of territories and societies, as it adversely adds to climate change, the deple-

⁴⁶ *Ibid.* at 267.

⁴⁷ *Ibid.*

⁴⁸ The University of Arizona, 'Nicaragua issues', *supra* note 42.

⁴⁹ See Firestone et al, 'Cultural Diversity', *supra* note 41, at 267–268.

tion of the ozone layer and pollution. Deforestation for unsustainable agricultural practices can also lead to soil erosion, loss of fauna, and displacement of people – all of this potentially contributing to the decline of farmland, inefficiency of agriculture, food shortages, formation of conflicts, and ultimately lack of human security.

The experience of Paraguay depicts how the country is taking a protectionist rule of law-based approach towards deforestation, coupled with alternative solutions to incentivize forest owners to participate in forest conservation practices, in order to mitigate the negative consequences of deforestation and ensure human security for its people and territory. Paraguay has a population of approximately six million people, with most living in the eastern territory of the country.⁵⁰ This region of Paraguay is part of the Atlantic forest, a terrestrial biome and region in South America, and one of the most biodiverse ecosystems remaining in the world.⁵¹ Until 2004, Paraguay had the second highest deforestation rate in the world, which resulted in the loss of seven million hectares of forest over a few decades.⁵² Most of this forest loss was due to clearing in order to expand agriculture and cattle ranching, the backbone of Paraguay's economy.⁵³

It became clear to the Paraguayan government that it would lose all of its Atlantic forest within a few years if nothing was done to bring down deforestation rates. As a result, the Paraguayan Congress passed the Zero Deforestation Law in 2004.⁵⁴ This law placed a moratorium on deforestation for two years, making it illegal to clear any forested land in the Atlantic forests of eastern Paraguay.⁵⁵ The deforestation of the Atlantic forest could have reached a point of no return. However, the Zero Deforestation Law was instrumental in bringing down the country's deforestation rate in the Atlantic forest by 90 per cent, which was complemented with reforestation efforts and with a voluntary movement of farmers to comply with the law.⁵⁶ The support of the Paraguayan government was key for the enactment of the Zero Deforestation Law. However, it was the establishment of a multi-stakeholder coalition that made the law operational and successful. Civil society, both at the national and local levels, played a crucial role by campaigning to raise awareness on the deforestation of the Atlantic forest among the general public, government and producers.⁵⁷ As a result, a Social Pact for the Conservation of the Atlantic Forest – a network of support for the implementation of the Zero Deforestation Law – was created in 2005.⁵⁸

⁵⁰ World Wildlife Fund Paraguay, 'Forests – Making a pack to tackle deforestation in Paraguay', (2011), <<http://internationaltreefoundation.org/wp-content/uploads/2011/04/Paraguay-FINAL-30-march-2011.pdf>> (visited 10 June 2015) at 1.

⁵¹ *Ibid.*

⁵² *Ibid.*

⁵³ *Ibid.*

⁵⁴ Ley de prohibición en la Región Oriental de las Actividades de Transformación y Conversión de Superficies con Cobertura Boscosa, No. 2524, 2004.

⁵⁵ World Wildlife Fund Paraguay, 'Forests', *supra* note 50, at 2.

⁵⁶ *Ibid.*

⁵⁷ *Ibid.*

⁵⁸ *Ibid.*, at 3.

The Zero Deforestation Law was extended for two years in 2006,⁵⁹ for five more years in 2008,⁶⁰ and for another five years in 2014⁶¹ as the result of its apparent success in decreasing Paraguay's deforestation rate. In addition, in 2006 a law on payment for environmental services⁶² was enacted to support further the country's efforts to control deforestation.⁶³ This new law established a mechanism for forest owners to receive compensation for preserving their forest reserves, intended as a mechanism to incentivize forest owners to undertake forest conservation. Apart from these apparent successes in conserving the Atlantic Forest, the Paraguayan government continues to work with stakeholders to reduce emissions from deforestation and forest degradation, and to preserve the livelihoods of forest dependent communities with the establishment of a self-sustaining forest governance system which is to be applicable after the Zero Deforestation Law is lifted.⁶⁴

It is worth noting that deforestation intertwines with other environmental security threats. It has a direct effect on climate change that in turn can affect global food production and human security. For instance, global poverty reduction efforts can be affected by decreases in food production causing instability. In addition, deforestation can lead to decreases in rain and snow in some regions, while in other regions can lead to increases in draughts, floods and forest fires. Thus, the country experience from Paraguay demonstrates a rule of law approach that contributes to addressing a multidimensional environmental security threat, that of deforestation and its related aspects, by establishing a deforestation moratorium and developing supplementary measures for after the moratorium comes to an end. In particular, the experience of Paraguay demonstrates that a strict stand on deforestation is not sufficient to address an environmental security threat, but that incentives are also necessary to influence and change human behaviour.

5 Conclusion

Significant progress has been made in the development of international and national laws, policies, case law and principles in relation to environmental security issues. As can be seen from the decadal international conferences on environmental issues, there is heightened awareness and improved understanding of the increasingly complicated nature of environmental problems in an increasingly globalized world. However, environmental degradation continues and is becoming an eminent (and increasingly an imminent!) problem for the international community. Over the last decade, threats have become more complex with issues such as deforestation, natural disas-

⁵⁹ *Ibid.* at 4.

⁶⁰ *Ibid.*

⁶¹ World Wildlife Fund Global, 'Paraguay extends Zero Deforestation Law to 2018', available at <<http://wwf.panda.org/?210224/Paraguay-extends-Zero-Deforestation-Law-to-2018>> (visited 13 April 2015).

⁶² Ley de valoración y retribución de los servicios ambientales, No. 3.001/06, 2016.

⁶³ World Wildlife Fund Paraguay, 'Forests', *supra* note 50, at 11.

⁶⁴ See World Wildlife Fund Global, 'Paraguay extends', *supra* note 61.

ters, and climate change stemming from causes that are not necessarily within the control of affected states, but which are increasingly having impacts both within and beyond national jurisdictions. Thus, environmental security is a growing global concern as environmental issues are posing more and more threats to all humans and to the international community as a whole.⁶⁵

Presently, the international community is promoting the sustainable development approach to address environmental security threats. In addition, there is a growing realization by the international community of the importance of the role of law for addressing environmental threats, both at the international and national levels. It is not enough simply to enact legislation or adopt international legal instruments, to be effective these need to be implemented and supported. There is thus a broader understanding of what role law needs to play, and a deeper understanding of how this role can be filled. At the international level, world leaders are increasingly highlighting the importance of the rule of law to address environmental threats, and making a global call to all governments around the world to use the rule of law pragmatically to solve international and national problems related to environmental security. At the same time, governments around the world are progressively providing for a greater role for law (ie: for legal changes), both at the national and international levels, to advance their efforts to tackle environmental threats in their territories. These country experiences are not perfect from a theoretical point of view, but they illustrate how legal changes can play a role in improving projects designed to address environmental security threats from a practical point of view. It is the linking of ideas, laws and policies with practical enforcement measures, and innovative adaptations to local circumstances, that will lead to the identification of good practices and inspire others to work towards closing the gap between practice and theory.

With this in mind, the present author advocates that more countries around the world need to join the movement of integrating legal changes into efforts to address threats to environmental security. Governments need to become both active and innovative in the development and implementation of projects to address issues of environmental security at the national level – taking into consideration what laws and judicial systems might be most effective; how access to justice and information might be improved; and how attention might be given to public participation, accountability, transparency, and fair and just enforcement. However, all these should be supported by the general public, who should also become active in the development and implementation of legal approaches for addressing environmental security threats at the national level. Only the legitimacy and support provided by the general public can give efforts to improve environmental security the requisite support for its success. Most importantly, integrating the rule of law concept into projects, and indeed into legal systems as a whole, should be a learning process through which countries

⁶⁵ See Brunnée, *supra* note 4, at 1743.

share their successes and failures with the ultimate goal of developing efficient governance models to address environmental security threats at the international, regional, national and local levels.