



DOES THE ‘GLOBAL PACT FOR THE ENVIRONMENT’ NAVIGATE IN THE ANTHROPOCENE?

LL.M International and Environmental Law: Global Governance

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To Jop, for pushing me to do better and better.

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Abstract: The whole earth's environment is in danger. The economic, political, legal and social human structures are a direct cause of the deterioration of the land, oceans, mountains, rivers and air. Multiple reports and scientific data from official institutions state the evidence originated from human threats to the natural conditions of the earth. They are a warning to take urgent action. As a result, environmental law is designed to contest these ecological challenges. Nevertheless, scientists identified intertwined global processes that build the earth as an ecological system. Moreover, there is wide acceptance of the claim that humankind has brought a new geological and social era known as the Anthropocene. The environment and the state of the nature are seriously jeopardized by human action and its socio-economic institutions. Consequently, the actual regulatory scheme is ineffective to deal with the earth system and its unusual characteristics.

The 'Global Pact for the Environment' was drafted to be the remedy for the deficiencies of international environmental law and to tackle the challenges of the Anthropocene. Now is the moment to undertake and implement a new legal instrument in order to regulate humankind's activities while being aware of the earth functioning as a system. Yet, is the 'Global Pact for the Environment' really an appropriate juridical response to do so? Can it act as a landmark instrument towards enhancing environmental law when addressing anthropogenic challenges that arise from the earth system science?

Keywords: environment, climate change, Anthropocene, international environmental law, earth system, planetary boundaries, Global Pact for the Environment, global governance

List of abbreviations

CIDCE	Centre International de Droit Compare de l' Environment
GPE	Global Pact for the Environment
HRC	Human Rights Council
IEL	International Environmental Law
ICC	International Chamber of Commerce
ICEL	International Council of Environmental Law
ICJ	International Court of Justice
IGEP	International Group of Experts for the Pact
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for the Conservation of Nature
OEWG	Open-ended Working Group
SDGs	Sustainable Development Goals
UN	United Nations
UDHR	Universal Declaration of Human Rights
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNGA	United Nations General Assembly
UNSG	United Nations Secretary General
WCEL	World Commission on Environmental Law

1. INTRODUCTION

1.1. Research problem

1.1.1. The environmental and ecological crisis

The ecological crisis together with climate alterations¹ that the earth is facing may lead to the entire collapse and a catastrophic climate and environmental emergency². That probably is the biggest challenge to which humankind will confront throughout the next centuries. Scientific data is clear: huge changes on environmental trends regarding air³, biodiversity⁴, land⁵ and oceans⁶ are already happening. Unsustainable human activities, overexploitation of natural resources and pollution have degraded the earth's ecosystems⁷ to an unprecedented level.

Climate change is a clear phenomenon that affects the whole planet to the point of provoking the questioning of the traditional legal and political approach to deal with international issues. For instance, humankind has made efforts to stop the rise in greenhouse gas emissions to handle and control the rise of temperatures with the Paris Agreement in 2015⁸. However its performance is somehow contested in the sense that faster cuts are required⁹. One might ask whether humankind should seek for an all-encompassing global perspective that takes the earth as a unity into account.

Therefore urgent action at an exceptional scale and time rate is required to stop and reverse this damaging situation, given that “future conditions of ecosystem services – linkages between nature and human well-being - could be worse or better than in the present depending on policy choices”¹⁰.

¹ IPCC, [Global Warming of 1.5°C](#). An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty (2018)

² Ripple, W.J., Wolf, C., et al; [World Scientists' Warning of a Climate Emergency](#), BioScience, biz088 (2019) and the European Parliament Resolution of 28th November 2019 on the climate and environment emergency ([2019/0078](#))

³ World Health Organization, [Ambient air pollution](#): a global assessment of exposure and burden of disease (2016)

⁴ Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), [Global Assessment report on biodiversity and ecosystem services](#) (2019)

⁵ IPCC, [Climate Change and Land](#): an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems (2019)

⁶ IPCC, [Special Report on the Ocean and Cryosphere in a Changing Climate](#) (2019)

⁷ Millennium Ecosystem Assessment Series. [Ecosystems and human well-being: Current state and trends](#), Findings of the Condition and Trends Working Group (2005)

⁸ See the [Paris Agreement 2015](#).

⁹ UNEP. [Emissions Gap Report 2019](#). Executive summary. United Nations Environment Programme, Nairobi (2019)

¹⁰ Millennium Ecosystem Assessment Series. [Ecosystems and human well-being: Scenarios](#), (2005)

1.1.2. International environmental law as a remedy

Environmental law is designed to address challenges that endanger and threaten nature, including humankind. IEL is the mainstream juridical strategy used to regulate human relations with the environment. Accordingly, humanity has designed a tailor-made regulatory approach to address social, economic and political problems that cause the environmental degradation. This is to say that humans create laws “to consciously design a specific type of desired social order”¹¹. Rules and policies at diverse levels alongside a well-defined implementation, enforcement, and compliance mechanisms are deemed to be the key to minimize hazardous effects of pollution or to tackle unexpected consequences of extreme natural phenomena - aggravated by climate change -.

While it is true that laws and institutions have slowed or reversed environmental degradation to some extent¹²; on the contrary, IEL has failed in tackling environmental challenges due to its gaps both in its development process and its application¹³. IEL is largely ineffective¹⁴ and inefficient¹⁵. Some reasons are the ‘treaty congestion’¹⁶ and a global trend of weak enforcement which is “exacerbating environmental threats, despite prolific growth in laws and agencies”. Therefore the “failure to fully implement and enforce these laws is one of the greatest challenges to mitigating climate change, reducing pollution, preventing widespread species and habitat loss”¹⁷.

Generally, the “lack of implementation of existing commitments and obligations is a pervasive feature of IEL that is often closely linked to lack of resources, information, capacity to implement, and political will”¹⁸. In this sense, “it may be that the problem is not the dearth of international agreements and commitments but insufficient implementation of existing agreements and commitments at home”¹⁹.

¹¹ Kotzé, L.J.; “Global Environmental Governance: Law and Regulation for the 21st Century”. Edward Elgar (2012)

¹² The Montreal Protocol on Substances that Deplete the Ozone Layer (1987) is considered to be the greatest success regarding IEL instruments. In UNEP, [HFCs: A Critical Link in Protecting Climate and the Ozone Layer](#) (2011). Other instruments like the Kyoto Protocol (1994) may be viewed either as a success in Maamoun, N.; “[MEAs: Empirical Evidence of a Hidden Success](#)” (2017) or a failure in Grunewald, N. “[Did the Kyoto Protocol fail?](#)” (2016)

¹³ Le Club des Juristes, [Report Increasing the effectiveness of IEL: duties of states, rights of individuals](#) (2015)

¹⁴ Kotzé, L.J.; “[Earth system law for the Anthropocene](#)”, Sustainability 2019, 11, 6796 (2019)

¹⁵ Lepage, C.; “[Les véritables lacunes du droit de l'environnement](#)”, Pouvoirs No 127, 4 (2008)

¹⁶ Anton, D. K.; “[‘Treaty Congestion’ in International Environmental Law](#)” Routledge Handbook of IEL (2012)

¹⁷ UNEP. [Environmental Rule of Law](#): First Global Report (2019)

¹⁸ Urho, N., et al “[International Environmental Governance](#)”, Nordic Council of Ministers (2019)

¹⁹ Biniaz, S.; “[The UNGA Resolution on a ‘GPE’: A chance to put the horse before the cart](#)” in RECIEL (2019)

Different views in academic literature exist concerning possible improvements of the effectiveness of IEL. One of the options that is being mulled over and which will be discussed throughout the present dissertation is the drafting of a new multilateral environmental agreement (MEA) as a comprehensive framework that will even include a right to a healthy environment.

In sum, the Global Pact for the Environment (GPE) is the ultimate initiative born from civil society that evolved into a state-led process and tried to become an international binding convention by grasping all matters and IEL principles in a single and compact document²⁰. The function of general principles in international law is to fill the gaps. Given that those “will normally only be resorted to if there is a situation where there is neither an applicable treaty nor an applicable rule of customary international law”²¹, at first sight, the idea seems very appropriate and useful. The embodiment of these principles in text may fill some flaws and create a coherent structure of IEL.

IEL is the discipline which holds the higher number of agreements, being characterized by a lot of sectoral global treaties and “around 1500 environment frameworks, treaties, agreements and bodies”²². Although there is no all-encompassing horizontal global covenant on nature protection, if a crucial drawback is the lack of MEAs compliance, would then a new instrument add any value?

Several scholars have already been discussing it and there is some literature about the GPE as a multilateral legally binding agreement. Nonetheless, on the last session of its OEWG was agreed that it will not be a MEA but rather a high-level political declaration in 2021. Then the dynamics, the ruleset and the outcomes of the process get a bit altered.

One may argue that IEL is used to perpetuate structural drivers that cause the Anthropocene²³. It also should be taken into account that its future is linked to global environmental governance²⁴. Its response to ecological challenges is “a multifaceted and multi-dimensional evolutionary process, drawing on existing mechanisms in many cases, and enhancing them or developing totally new ways of responding with new actors and tools in others”²⁵. The time for a new approach has come.

²⁰ The pact explained in 3 minutes in <https://globalpactenvironment.org/en/the-pact/the-pact-in-3-minutes/>

²¹ Klabbers, J.; ‘The making of international law’ in “International Law”, p. 47, Cambridge University Press (2017)

²² UNEP: [Member States debate the need for a global pact for the environment](#)

²³ Viñuales, J.; “The organization of the Anthropocene: In Our Hands?” International Legal Theory and Practice (2018)

²⁴ Boyle, Alan E. "[Saving the World - Implementation and Enforcement of International Environmental Law through International Institutions](#)." Journal of Environmental Law, vol. 3, no. 2 (1991)

²⁵ Leary, D. and Pisupati, B.; “[The future of international environmental law](#)”, United Nations University Press (2010)

1.1.3. The solution: earth system law for the Anthropocene

Extraordinary environment-related changes acting as severe warnings, which are aggravated and substantially provoked by impacts of human action²⁶, are happening. The earth and humankind are facing the modification of physic, chemical and biological natural processes. Natural conditions and climate stability have already shifted giving way to what some call a new period which is known as the Anthropocene²⁷. Thereby, “the effects of humans on global environment have escalated” up to the point of delineating a novel “human-dominated, geological epoch”²⁸ with apocalyptic²⁹ outcomes. Since “the impact of current human activities is projected to last over very long periods”, the Anthropocene entails “significant consequences for earth system functioning”³⁰.

The earth “is a complex system that life itself helps to control” in which physical, chemical, and biological processes are constantly interacting and intrinsically linked at a planetary level. It is characterized by connected ‘spheres’ or natural phenomena such as the atmosphere, hydrosphere, cryosphere, geosphere, and biosphere that might result in cascade effects. Humankind is included and our activities are “triggering changes with catastrophic consequences for the earth system”³¹.

Furthermore, scientists have acknowledged nine biophysical processes of the earth system that determine the earth’s ability to auto-regulate. They are considered as ‘the safe operating space for humanity’ and their objective, if do not trespass, is to maintain the Holocene conditions of the earth which are favorable for the life and well-being of the planet. These earth’s biophysical thresholds, in which human action must remain are known as ‘planetary boundaries’³² and comprise climate change, ocean acidification, the stratospheric ozone depletion, the nitrogen and phosphorus cycles, global freshwater use, the change in land use, the rate of biodiversity loss or biosphere integrity, the atmospheric aerosol loading and chemical pollution.

²⁶ Zalasiewicz, J., Waters, C., Summerhayes, C., Williams, M.; “[The Anthropocene](#)”, *Geology Today*, 34, 5 (2018)

²⁷ Although officially, the present time is still considered as the Holocene epoch (International Commission on Stratigraphy established in 2018 that we live in the Late Holocene Meghalayan Age). However, a panel of scientists known as the Anthropocene Working Group ([AWG](#)) wants to [propose the official recognition of a new epoch](#).

²⁸ Crutzen, P.J.; “[Geology of mankind](#)”, *Nature*, Vol 415, 3, p. 23 (2002)

²⁹ Barnosky, A. et al.; “[Has the Earth’s Sixth Mass Extinction Already Arrived?](#)” *Nature* 471(7336), pp. 51–7 (2001)

³⁰ Steffen, W., Crutzen, P.J. and McNeill, J.R.; “[The Anthropocene: Are humans now overwhelming the great forces of Nature?](#)” *Ambio* 36, pp. 614-621 (2007)

³¹ Executive summary in Steffen, W. et al “Global Change and the Earth System: A Planet Under Pressure”, Springer-Verlag Berlin Heidelberg New York (2004)

³² Rockström, J., Steffen, W. et al.; “[A safe operating space for humanity](#)”, *Nature*, Vol. 461, 24, (2009)

The problem worsens when it is acknowledged that humanity has already transgressed at least, four planetary boundaries³³ while the last two has not yet been quantified³⁴. Since the concepts of earth system and planetary boundaries “define the environmental limits within which humanity can safely operate” as a basic structure providing a science-based analysis of the risks, they “can make a valuable contribution to decision-makers in charting desirable courses for societal development”³⁵.

Consequently, the earth system and planetary boundaries approach could become in an objective and scientific reference³⁶ to develop a framework against anthropogenic challenges. In this regard, there are already ideas about a fresh perspective to govern them as “the interrelated and increasingly integrated system of formal and informal rules, rule-making systems, and actor-networks at all levels of human society (local to global) that are set up to steer societies towards preventing, mitigating, and adapting to global and local environmental change and, in particular, earth system transformation, within the normative context of sustainable development”³⁷.

Nonetheless, the juridical domain of the earth system science has not been deeply researched yet. Whereas it is true that “law has played a peripheral part in the earth system governance scientific agenda”, some authors point out the concept of ‘earth system law’ with the aim “to comprehensibly respond to the regulatory challenged presented by a changing earth system in the Anthropocene”³⁸.

Bearing in mind that “states are required to contribute to conservation, protection and restoration of the integrity of the earth’s ecosystem” and that “the proliferation of MEAs and the resultant distinct and separate mandates ignore the unity, interconnectedness and interdependence of the earth’s ecosystem”³⁹, the GPE might be a “legal response to tackle the structural problem of IEL which is the lack of a comprehensive approach to the functioning of the earth’s ecosystem”⁴⁰.

³³ The climate change, the rate of biodiversity loss, shifts in nutrient cycles (nitrogen and phosphorus) and land use. The first two are recognized as “core” planetary boundaries based on their fundamental importance for the earth system.

³⁴ Rockström, J., Steffen, W. et al.; “[Planetary boundaries: exploring the safe operating space for humanity](#)”, Ecology and Society 14(2): 32 (2009)

³⁵ Steffen, W. et al.; [Planetary boundaries: Guiding human development on a changing planet](#), Science 347 (2015)

³⁶ Stephens, T.; “Reimagining IEL in the Anthropocene”, in Kotzé, L.J.; “Environmental Law and Governance” (2017)

³⁷ Biermann, F., Betsill, M.M., Gupta, J. et al.; “[Earth system governance: a research framework](#)”, International Environmental Agreements: Politics, Law and Economics, Volume 10, Issue 4, pp. 277-298 (2010)

³⁸ Kotzé, L.J. and Kim, R.E.; “[Earth System law: The juridical dimensions of earth system governance](#)” (2019)

³⁹ Paragraphs 16 and 80, UN A/73/419, Report “Gaps in international environmental law”

⁴⁰ Barreira, A., in [Statement of NGO](#), as representative of the Common Home of Humanity, Kenya, 15th January (2019)

However, that conclusion is still premature without having analyzed the main features, drawbacks or potential virtues that the GPE may encompass. Yet one should highlight “the opportunity of this political momentum to trigger a paradigm shift in IEL towards a more comprehensive system of earth system law, by introducing the complete set of biophysical changes of the planet and their relations with the activities of human societies. Almost all nine planetary boundaries indicators already have their own silo legislation, but there is currently no legal framework to represent their interconnections and their way of operating within a complex and interconnected system”⁴¹.

Consequently, these biophysical boundaries “could form the baseline for reforming IEL, enabling governments to embark on a scientifically informed path to restore harmony with nature”⁴². Although some attempts have been made concerning previous legal instruments and policy guidelines, they do not comprise the field of environmental law as a whole, perpetuating its sectoral fragmentation, stagnation, state-centrism and anthropocentrism, among other hurdles and flaws.

As a practical example, in the article 1 of the UNFCCC⁴³ the “climate system” is defined as “the totality of the atmosphere, biosphere and geosphere and their interactions”. This is, it should encompass all earth processes as a system or organism with interlinkages between them. Nonetheless, the regulation of this system and the climate change in general is individual, focused on sovereignty⁴⁴ of the single states. Another example of the environment considered as a whole includes the definition of “ecosystem” in the Convention on Biological Diversity⁴⁵ as “a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit”. However, the CBD is “rooted in sovereignty”⁴⁶ and it again “unequivocally recognizes national sovereign rights over biodiversity”⁴⁷.

⁴¹ [Common Home of Humanity](#) about the Global Pact for the Environment

⁴² Urho, N., Ivanova, M., Dubrova, A. and Escobar-Pemberthy, N.; “[International Environmental Governance: Accomplishments and Way Forward](#)”, Nordic Council of Ministers (2019)

⁴³ United Nations Framework Convention on Climate Change ([UNFCCC](#))

⁴⁴ Arcanjo, M.; “[Has climate change rendered the concept of sovereignty obsolete?](#)” Climate Institute Paper (2019) and Melkas, E.; “[Sovereignty and Equity within the Framework of the Climate Regime](#)” Review of European, Comparative & International Environmental Law, vol. 11, no. 2, p. 115-128 (2002)

⁴⁵ See the [CBD](#).

⁴⁶ Willmore, C.; “Sovereignty, conservation and sustainable use”, in Morgera, E. and Razzaque, J. (Eds.) “Biodiversity and Nature Protection Law”, Elgar Edward Encyclopedia of Environmental Law, Volume III (2017).

⁴⁷ Faizi, S.; “[CBD: The unmaking of a treaty](#)”, Biodiversity 5, 3 (2004) and Faizi, S. and Ravichandra, M.; “[CBD: Sovereignty is not negotiable](#)”, Biodiversity 10, 4 (2009).

A fair attempt could be to develop a global environmental constitution given the lack of an overarching normative hierarchy⁴⁸. Additionally, the setting of Sustainable Development Goals (SDGs) “as basis for reframing the planetary boundaries concept towards a safe operating space agenda”⁴⁹ could work too. Yet, as a policy framework, they need to be properly operationalized⁵⁰ and implemented through coherent institutions. From this perspective, scholars highlight that “a global pact would provide the opportunity to make a paradigm shift in international environmental law by broadening its focus toward a more comprehensive system of Earth system law – ‘Lex Anthropocenae’ – focusing on biophysical changes of the planet in the socioeconomic realm”⁵¹.

Notwithstanding, one should bear in mind that “a Global Pact for the Environment can only accomplish its mission of creating coherence, effectiveness and harmonization of all MEAs, if we have the ability to introduce and represent in the international environmental legal system the necessary knowledge about how the global environment system functions – the Earth System”⁵².

1.2. Research questions and aim

The state of the environment is being weakened because of human action. The climate and environmental emergency⁵³ have already been declared by authorities. This may mean that the model to determine regulations and the establishment of a legal and institutional structure in order to counteract the degradation of the environment – named, international environmental law - did not work out. Nevertheless, a new opportunity is presented. The Global Pact for the Environment has been already discussed by many authors. Generally their critical or encouraging arguments are focused on the GPE as another multilateral agreement or as a legal tool to proclaim the right to a healthy environment. However, several of those considerations will continue in line with the current configuration of international environmental law and governance. I aim to set a step further.

⁴⁸ Kotzé, L.J and Muzangaza, W.; “[Constitutional international environmental law for the Anthropocene?](#)” RECIEL

⁴⁹ Tiina Häyhä, T., Lucas,P.L., Vuuren, van, D.P., Cornell, S. F., Hoff, H.; “[From Planetary Boundaries to national fair shares of the global safe operating space: How can the scales be bridged?](#)”, Global Environmental Change, Vol. 40, pp. 60-72, (2016)

⁵⁰ Hak, T., Janouskove, S., Moldan, B.; “[SDGs: a need for relevant indicators](#)”, Ecological Indicators, Vol 60 (2016)

⁵¹ Urho, N., et al.; “[International Environmental Governance](#)”, Nordic Council of Ministers, in p. 85 (2019)

⁵² Common Home of Humanity and Instituto Internacional de Derecho y Medio Ambiente (IIDMA); “[Why do we need an Earth System approach to guide the Global Pact for the Environment?](#) Contribution for the 2nd Substantive Session of the Ad Hoc Working Group towards a Global Pact for the Environment” (Nairobi, 18-20 March 2019)

⁵³ European Parliament Resolution of 28 November 2019 on the climate and environment emergency ([2019/0078](#))

First, I will define what the proposed GPE is and what are its main characteristics, principles and objectives in relation with the traditional perspective of international environmental law. Secondly, I will introduce the topics of the earth system science, the Anthropocene and the planetary boundaries, highlighting some features of the earth system approach mainly based on the Earth System Governance Project. On the third place, I will present the concept of earth system law. To this end I will initially outline various flaws and reasons why environmental law is ineffective and has failed to address Anthropocene's challenges derived from the earth's configuration as a system. Afterward, while analyzing if it is possible to manage the Anthropocene from a regulatory point of view, I will combine the characteristics of the earth system science previously defined, with the correlative and desirable features that the earth system law would involve to be successful. Finally, the purpose is to examine whether the GPE includes any of these features in order to evaluate its suitability to tackle environmental challenges in the Anthropocene.

Consequently, my main research question is whether the GPE is an appropriate legal instrument towards enhancing environmental law when addressing anthropogenic challenges that arise from the earth system science. In order to reach an answer, I formulate several sub-questions: which is the background, characteristics and intended objectives of the GPE; what is the earth system science, why is it relevant and which are its main features; which are the main hurdles of the traditional approach of environmental law; how the law can deal with the earth system science and the Anthropocene; and whether the GPE includes the features of the earth system law.

It must be taken into account that the GPE is still being discussed and negotiated, so this dissertation should not be deemed definitive or unquestionable in the basis that its precepts and final legal status are not defined so far. Regarding the earth system, a similar situation stands up. Although there is scientific evidence behind all the concepts, the 'earth system approach' and its linked characteristics – especially the part that develops the earth system law features - are not absolute. However, I hope this critical analysis could bring some light in the environmental law field regarding the deficiencies of the traditional approach and whether it is appropriate the wording, shape and meaning given in this new document as well as its underlying premises in order to handle Anthropocene environmental challenges. My final aim is to bring together some literature about the feasibility to implement a legal framework in order to tackle environmental challenges derived from the intertwined global regimes that build the Earth as a system.

1.3. Methodology and structure

After this introduction, the present dissertation is structured as it follows. Chapter 2 is fully about the GPE. There is an analysis of the draft, how the idea emerged and where it comes from as well as in what sense is it relevant for the development of international environmental law. General subject-matters are discussed along with a brief remark of its principles and intended objectives.

Chapter 3 deals with the earth system approach. There is an introduction of the topic, its main characteristics and background. Emphasis is placed on the concept of planetary boundaries as tipping points and an objective scientific measurement. It delineates three features that the earth system science entails in the Anthropocene: its interdependency, alterability and complexity. They are based on the Earth System Governance project ‘contextual conditions’ and they have been drawn and merged from several literature sources in order to create a clear outline.

Chapter 4 starts with some reasons of why environmental law is found ineffective and has failed to protect the milieu and the natural conditions of the Earth to a large extent. Later on there is a description of a new approach that could deal better with the environmental challenges. The legal framework for the earth system science is delineated through three features that are related to the conditions previously explained. Inclusiveness, adaptability and ambition of the earth system law are suggested as the desirable characteristics of any legal tool to tackle Anthropocene challenges.

Chapter 5 stands for an assessment of the possible influence, impact or value of the draft in relation with the earth system approach. The idea is to compare and analyze whether the GPE includes any of the features of the earth system law in order to point out the strengths and weaknesses of the GPE in this sense. Thereby the ultimate aim is to highlight some enhanced methods and concepts that the current draft could add or reflect, with a solid focus in the assets related to the earth system. Accordingly taking into account the interdependency, alterability and complexity as characteristics of the earth system science and the Anthropocene; and against the fragmentation, stagnation, the state-centrism and anthropocentrism of the traditional conception of environmental law, a new instrument should include features of inclusiveness, adaptability and ambition in order to be successful when dealing with environment threats and degradation.

A conclusion will solve whether the GPE is suitable to ‘navigate the Anthropocene’ by considering the earth as a system. The methodology is analytical and comparative through a literature review.

2. THE GLOBAL PACT FOR THE ENVIRONMENT

2.1. Introduction

The GPE is a recent proposal for a new multilateral treaty in order to enhance the protection of the environment. Initially the idea was to create a new legal text to be adopted at an international level with the main purpose to codify and join in a single document all the principles of IEL.

The reason to undertake this process is to confront the lack of an overarching framework in environmental law and governance. This gap is one of the deficiencies that make it a messy field and sometimes incapable to effectively protect nature. Therefore, an all-encompassing structure that strengthened its principles and proclaimed the right to a healthy environment was designed. The draft has been endorsed by many political actors and legal professionals but it shows shortages.

In this Chapter, there is a complete and brief explanation of the GPE draft. With the purpose of answering the main research question, one should analyze what is the GPE, how it was constructed and what is the relationship with IEL principles in general. Accordingly, the sub-question about which is the background, characteristics and the intended objectives of the GPE is here developed.

2.2. Background

2.2.1. The drafting process⁵⁴

On 24 June 2017 many jurists and international experts⁵⁵ from several nationalities coordinated by le Club des Juristes jointly launched a new proposal in order to “adopt a text codifying the general principles of the environment”⁵⁶. Their idea was to write, formalize and implement a whole new document with global repercussion, aimed at becoming in a multilateral and international treaty to improve the effectiveness of international environmental law to address environmental challenges.

Le Club des Juristes, promoters of the project, is a legal think tank or a “meeting of a group of experts” from France whose objectives are to “encourage legal debate and innovate”, “strengthen

⁵⁴ See for more information: Tigre, M.A.; “[Gaps in IEL: Toward a GPE](#)”, Environmental Law Institute (January 2020)

⁵⁵ See the [List of signatories](#) for the Global Pact for the Environment

⁵⁶ See [Origins](#) of the Global Pact for the Environment

the place of law in public debate and improve the understanding of legal issues by all”⁵⁷. Its Environment Commission coordinated the creation of a network to develop the pact – the IGEP.

The main objective of the GPE is purported to be “to fill the gaps in IEL and to contribute to the emergence of a global legal framework, one that is more protective of natural resources”, claiming to “be the first international treaty on the environment as a whole”⁵⁸. Therefore, its targets theoretically were aimed at becoming in a binding instrument as a MEA, encompassing all IEL principles in a single tool and developing a right and duty to the environment.

The preliminary draft of the group of experts gained recognition⁵⁹ with the participation of several entities and personalities getting involved on the project such as the WCEL from the IUCN⁶⁰. As a result on May 2018, the UNGA adopted the Resolution “Towards a Global Pact for the Environment”⁶¹ which established an OEWG in order to consider “a technical and evidence-based report that identifies and assesses possible gaps in IEL and environment-related instruments with a view to strengthening their implementation”.

On November 2018, the Report “Gaps in IEL and environment-related instruments: Towards a Global Pact for the Environment”⁶² from the OEWG was submitted and published by the UNSG and it revealed “deficiencies at multiple levels”, mainly regarding to “applicable principles of environmental law; the normative and institutional content of the sectoral regulatory regimens, as well as their articulation with environment-related regimes; the governance structure of IEL; and the effective implementation of, compliance with and enforcement of IEL”.

However, neither the Resolution nor the Report included any direct reference or explicitly mentioned the draft project to be adopted as such, despite the fact of the title. They do mention the existence of this new proposition which the UN considers merely as an option or possibility to strengthen IEL in general. It should be noted that the OEWG only was “asked to discuss ‘if deemed necessary’ the scope, parameters and feasibility of an international instrument”. As a result, the

⁵⁷ See [Qui sommes nous](#), the Club des Juristes

⁵⁸ See the [Objectives](#) of the Global Pact for the Environment

⁵⁹ The project has been supported by several entities, NGOs and [civil society organizations](#), including the [International Chamber of Commerce](#) (ICC), on its [opening statement of the conference](#).

⁶⁰ World Commission on Environmental Law ([WCEL](#)) from the International Union for the Conservation of Nature

⁶¹ UN [A/RES/72/277](#)

⁶² UN [A/73/419](#)

recommendations eventually adopted only ‘may include’ “the convening of an intergovernmental conference to adopt an international instrument”⁶³.

A number of organizations supported or commented about the Report⁶⁴, or the consideration of the proposal⁶⁵. Nevertheless, the Report has been criticized by authors that affirm that “the gap report should have informed the content of the draft GPE”⁶⁶ instead of doing it otherwise or that “the proposed GPE seemed to be a solution in search of a problem, rather than in response to one”⁶⁷

As stated in the Resolution, three sessions⁶⁸ were held in Nairobi in an attempt “to consider the report and discuss possible options to address possible gaps in IEL”. Representatives of the civil society⁶⁹ were actively participating in the project, as a sign of the democratization of the process.

The final outcome of the meetings was illustrated in the Resolution “Follow-up to the Report of the ad hoc open-ended working group established pursuant to General Assembly Resolution 72/277”⁷⁰ on August 2019, which declared to endorse all the recommendations. It is noteworthy that these recommendations from the OEWG have to be understood as suggestions or advices thus not as obligations to carry out by the states.

Unfortunately, in the last substantive session the member states adopted recommendations that did not follow the initial aim of the project. Member states and parties involved finally decided to opt

⁶³ Biniarz, S.; “[The UNGA Resolution on a ‘Global Pact for the Environment’: A chance to put the horse before the cart](#)” in Review of European, Comparative and International Environmental Law (RECIEL), 28-33-39 (2019)

⁶⁴ [Contribution of the CIDCE](#) to the UNSG’s Technical Report on possible gaps in IEL and environment-based instruments with a view to strengthening them, pursuant to Resolution 72/277 “Towards a GPE”

⁶⁵ WCEL, ICCEL, IGEP; [Note on the United Nations Secretary-General’s Report](#), “Gaps in international environmental law and environment-related instruments: towards a global pact for the environment”, 1st note (10th December 2018) ICCEL; [On the agreed principles that provide a foundation for restating a common aspiration and global vision for sustaining Earth’s shared biosphere](#), 2nd note (10th January 2019), ICCEL; [On options to address gaps under Resolution 72/277](#), 3rd note (19th February 2019), ICCEL; [Elements for consensus on draft recommendations to strengthen implementation of international environmental law under Resolution 72/277](#) “Towards a Global Pact for the Environment”, 4th note (12th April 2019) and ICCEL; [On draft elements of recommendations to strengthen implementation of international environmental law under Resolution 72/277](#), 5th note (20th May 2019)

⁶⁶ Kotzé, L.J and French, D.; “[A critique of the Global Pact for the Environment: a stillborn initiative or the foundation for Lex Anthropocenae?](#)” in International Environmental Agreements 18:1, pp. 811-838 (15th October 2018)

⁶⁷ Biniarz, S.; “[The UNGA Resolution on a ‘Global Pact for the Environment’: A chance to put the horse before the cart](#)” in Review of European, Comparative and International Environmental Law (RECIEL), 28-33-39, (2019)

⁶⁸ The GPE process of negotiation is illustrated in detail in these meetings: the [first](#), the [second](#) and the [third](#).

⁶⁹ Joint press release [Multilateralism at Work: United Nations’ deliberations on a Global Pact for the Environment](#)

⁷⁰ UN [A/RES/73/333](#)

for a “political declaration for a UN high-level meeting, in the context of the commemoration of the creation of the UNEP by the United Nations Conference on the Human Environment”⁷¹. It can be expected that the GPE will evolve and become in a sort of celebration and honor the 50th anniversary of the Stockholm Conference, certainly showing a retreat from the original proposal. The fifth session of the UN Environment Assembly (UNEA-5) is expected to take place during February 2021 and it is very likely to examine the effective implementation of environmental law⁷².

2.2.2. Previous proposals

It should be noted that this is not the first attempt to develop a document with the characteristic of being understood as an all-encompassing framework for environmental law and governance. After Stockholm, the World Charter for Nature⁷³ tried to synthesize principles for the protection of natural resources in a symbolic manner⁷⁴ in an initiative promoted by developing countries⁷⁵. Its ecocentric approach is such that some believe that it must be reconsidered “to counter the growth-without-limits developmental agenda”⁷⁶. Unfortunately, all major world environmental conferences in the 1990s showed a retreat from the deep ecology statements of the WCN⁷⁷. Only in 1987, “Our Common future” a document from the Brundtland Report collected a “Summary of Proposed Legal Principles for Environmental Protection and Sustainable Development”, inspiring a formalization of proposals in a sense of creating a legal structure, but without an ecosystem view. Later in 2000 the “Earth Charter”⁷⁸ represented the continuation of this process of recompilation of legal principles in IEL. This document was totally developed by civil society and endorsed by United Nations Educational Scientific and Cultural Organization, the IUCN and a limited number of States. It recognized the concept of ecological integrity⁷⁹ as its core by abandoning the

⁷¹ In “[3rd substantive session of the OEWG Towards a GPE](#)”

⁷² Paragraph 10 of the [Annex](#) to the Letter from President of the United Nations Environment Assembly H.E Mr. Ola Elvestuen to the members of United Nations Environment Assembly (8 July 2019)

⁷³ UN [A/RES/37/7](#) World Charter for Nature 1982

⁷⁴ Kotzé, L.; “[A Global environmental Constitution for the Anthropocene](#)” Transnational Environmental Law (2019)

⁷⁵ Wood, H.W., “[The United Nations World Charter for Nature: The Developing Nations’ Initiative to Establish Protections for the Environment](#)”, Ecology Law Quarterly (1985)

⁷⁶ Kotze, L.J. and French, D.; “[The Anthropocentric Ontology of IEL and the SDGs: Towards an ecocentric rule of law in the Anthropocene](#)”, Journal of Comparative Law 7 (2018)

⁷⁷ Devall, B.; “[The Deep, Long-Range Ecology Movement: 1960–2000: A Review](#)” Ethics and the Environment, 6, 1, pp. 18–41, at 30 (2001)

⁷⁸ [Earth Charter](#)

⁷⁹ Kotzé, L.J. and Kim, R.E.; “[Earth System law: The juridical dimensions of earth system governance](#)” (2019)

anthropogenic approach. However, the Earth Charter displays a range of diverse opinions from scholars to the extent that for some “it may hardly be considered a highly influential text in international law”⁸⁰ while for others “it is the most inclusive international document to date that defines globally shared values and principles”⁸¹. The Charter includes a whole range of sources or instruments from IEL⁸² and the adoption of the GPE could promote its absolute implementation⁸³.

In 1995 the IUCN in collaboration with ICEL, both civil actors, proposed the dynamic “Draft International Covenant on Environment and Development”⁸⁴ which has been revised many times. It merely tried to consolidate and develop already existing principles in a pure legal framework, but a hermeneutic task by experts is still required. Compared to the GPE, its architects learned that “to become enforceable it must be accessible to the large public without sacrificing accuracy”⁸⁵. Afterwards, the “World Declaration on the Environmental Rule of Law”⁸⁶ outlined “principles to serve as the foundation for implementing solutions for ecologically sustainable development”.

Additionally, the CIDCE created the “Draft on the International Covenant on the Human Right to the Environment”⁸⁷ in 2017 which was submitted to the HRC in the UNSG⁸⁸ for its consideration.

Despite the fact that these attempts – among others⁸⁹ – did not really go forward into the international community and there were no further developments regarding these projects, it is worth mentioning them. One might highlight that most of these initiatives did not come from states but from civil society organizations. This is important because it may be observed as a sign that both traditional environmental lawmaking and its center aim are changing. In this sense, it can be

⁸⁰ Morgera, E.; [Book Review of The Principle of Sustainability: Transforming Law and Governance – By Klaus Bosselmann](#), Ashgate, 2008, in Review of European Comparative & International Environmental Law, 18:2 (2009)

⁸¹ Bosselmann, K. “Global Environmental Constitutionalism: mapping the terrain”, Widener Law Review, Vol. 21: 171, (2015) and “Earth governance: trusteeship of the global commons”, Cheltenham, Edward Elgar Publishing (2015)

⁸² Earth Charter International Secretariat “[Earth Charter and International Law: How does the Earth Charter correlate with International Law? – With an special emphasis on environmental law](#)” (2012)

⁸³ Lavrik, M., Jimenez, A. and Vilela, M.; “[The GPE as a next step on the way forward for the Earth Charter](#)”, Earth Charter International Secretariat (2018)

⁸⁴ IUCN Environmental Law Programme; “[Draft International Covenant on Environment and Development – Implementing Sustainability](#)”, 5th Edition (2015)

⁸⁵ Almirante, D.; “[The Global Pact for the environment: a general instrument to face climate change](#)” (2019)

⁸⁶ 1st World Congress on Environmental Law; [IUCN World Declaration on the Environmental Rule of Law](#) (2017)

⁸⁷ CIDCE; “[Draft on the International Covenant on the Human Right to the Environment](#)” (2017)

⁸⁸ UN [A/HRC/34/NGO/60](#), 15th February 2017

⁸⁹ Such as the [Oslo Principles on Global Obligations for Climate Change](#) (2015), for instance

seen that the chief focus on some prescriptions is to elaborate a framework for environmental law as well as a concept of a right for a healthy environment, acknowledging a role for ‘Mother Earth’⁹⁰.

Although it is maybe early for an assessment, one of the differences that could eventually lead to the success of the GPE is that “it has political backing”⁹¹. The proposal has thus “fed into a state-led process which could culminate in an intergovernmental conference to adopt a new international instrument”⁹². Notwithstanding, as usual, political will remains being one of the obstacles to the development of ambitious environmental protection regulations.

2.3. Characteristics

2.3.1. The principles

The draft of the GPE⁹³ is composed by a preamble and twenty six precepts of which twenty are referred to principles of IEL and six are final clause articles. It contains both largely established and consolidated principles like precaution or polluter-pays and others still in development like non-regression and resilience. The draft combines substantial principles with rights and precepts with procedural nature such as the right to information, public participation or access to justice.

In the Preamble it is clearly mentioned that its aim is to synthesize the principles outlined in the Stockholm Declaration, the World Charter for Nature and the Rio Declaration in order to achieve the 2030 Agenda for Sustainable Development⁹⁴. As a matter of fact, it is possible to grasp a clear influence of these soft law documents in the GPE⁹⁵ as well as from MEAs⁹⁶. In relation with the most mature principles of IEL⁹⁷, without the aim of an exhaustive analysis of the twenty principles, the following comparison illustrates some links among them.

Thereby, the principle of prevention or preventive action (article 5 of the GPE draft) is written in the same language that the principles 6, 7, 15, 18 and 24 of Stockholm and the 11 of Rio. Similarly,

⁹⁰ UN [A/RES/64/196](#) ‘Harmony with Nature’ (2009) and resolutions related to [UN Harmony with Nature initiative](#)

⁹¹ Glazewski, J.; “Towards a Global Pact for the Environment”

⁹² Urho, N., Ivanova, M., Dubrova, A. and Escobar-Pemberthy, N.; “[International Environmental Governance: Accomplishments and Way Forward](#)”, Nordic Council of Ministers (2019)

⁹³ “[Draft Global Pact for the Environment](#)”, Preliminary Draft of the Group of Experts (2018)

⁹⁴ For a broader comparison see “[Analysis of the Adoption and Implementation of the Environmental principles in the GPE in the SDGs](#)”, Vance Center Environment program, ICEL and White&Case

⁹⁵ “[Analysis of the Adoption and Implementation of Environmental Principles in the GPE in soft law instruments](#)”

⁹⁶ “[Analysis of the Adoption and Implementation of the Environmental Principles in the Proposed GPE in MEAs](#)”

⁹⁷ This concise comparison and structure of the principles has been inspired using Sands’ book (2018) as a basis

the precautionary principle (article 6 GPE) is inspired on the principle 15 of Rio and widely invoked as a norm of general international law to the point of absorbing the prevention one⁹⁸. The polluter pays principle (article 8 GPE) reflects the principle 16 of Rio, with already a prominent position in IEL⁹⁹. The principle of cooperation (article 18 GPE) is built from the principle 24 of Stockholm and the 27 of Rio. Likewise, the diversity of national situations (article 20 GPE) reflects the principle of common but differentiated responsibilities and respective capabilities which comes from the principles 6, 7 and 11 of Rio as well as the 23 of Stockholm.

The formulation of other precepts is slightly less clear and literal than the previous examples or they come from another sources. For example, the concept of sustainable development (article 3 GPE) is associated¹⁰⁰ with the principle of intergenerational equity (article 4 GPE) and the latter is constructed from the principle 1 of Stockholm and the principle 4 of Rio. However, the sustainable development is present along the whole draft.

The point here is that most of these principles are already explicitly stated in other legal instruments and one could question why it is needed to materialize them again in another source. After all, its drawbacks are not being to be solved with a simple reformulation when the problems are anywhere else but in its judicial interpretation or meaning and its enforcement by domestic laws. Yet one should take into account that the repetition of ‘soft’ rules indicates the emergence of *opinio iuris* as an element of customary international law so it is an important factor in the soft law-making¹⁰¹.

On the other hand, besides principles, the GPE also contains rights. The most important substantive one and its correlative duty is the right to an ecologically sound environment (articles 1, 2 GPE), which are discussed on the next section about the right to a clean and healthy environment. The ‘right to an ecologically sound environment’ was inspired - among other texts and the international context itself where there already are domestic regulations and constitutions that include the formulation of the right - by the first principles of both Stockholm and Rio Declaration. The ‘duty to take care of the environment’ echoes the article 192 of the United Nations Convention of the

⁹⁸ Trouwborst, A.; “[Prevention, precaution, logic and law: The relationship between the precautionary principle and the preventive principle in international law and associated questions](#)”, Erasmus Law Review, 2, (2009)

⁹⁹ Since the Trail Smelter case in 1938, Gaines, S.E.; “[The Polluter-pays principle: from economic equity to environmental ethos](#)” Texas International Law Journal, Vol. 26, 3, pp.463-496 (1991)

¹⁰⁰ Following WCED in “Our common future” as the primary definition: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs”

¹⁰¹ Dupuy, P. “[Soft Law and the International Law of the Environment](#),” Michigan Journ. IL, 12, 2, p. 420-435 (1991)

Law of the Sea and its ambition is already present in the preamble of Stockholm Declaration. The duty may be dragged from the Global Compact¹⁰² and the Ruggie Framework¹⁰³, but applied to states instead of businesses and its normative character will not make a difference on the effects¹⁰⁴.

Remarkably one can assume that the procedural rights such as the right to access to information, public participation and access to environmental justice (articles 9, 10 and 11) are a translation of the Aarhus Convention¹⁰⁵, which is being internationally expanded with the Escazú Agreement¹⁰⁶.

Concerning the protection of the environment in armed conflicts (article 19 GPE), the precept may arise from the interrelation of the GPE with the General Principle 5 of the World Charter for Nature. Nonetheless, the rest of the content of the WCN which explicitly places the nature itself on its center and focus on the earth and its ecosystems interrelation¹⁰⁷, is barely developed on the GPE. In this sense, the GPE preamble includes the earth's ecosystem and its integrity approach as a purpose but even though the concept is mentioned in the articles 2, 12, 13, 16 and 18, there is a lack on its elaboration.

What maybe is surprising is the absence of the principle of sovereignty over natural resources and the responsibility not to cause damage to the environment of other states or to areas beyond national jurisdiction or the prohibition of transboundary harm in the principle 21 of Stockholm and the principle 2 of Rio. It is the “key” and the king in IEL and it does not appear in the GPE literacy.

The GPE seems to repeat and reformulate principles and rights present on other instruments of IEL. That is why some claim that it does not add anything new or its “lack of normative ambition”¹⁰⁸. Nevertheless, the draft includes innovations. The first relevant aspect is the direct recognition of the role that civil society plays (article 14 GPE) as well as indirectly, since non-

¹⁰² Akhtarkhavari, A.; “[The Global Compact, environmental principles and change in international environmental politics](#)”, Denver Journal of International Law and Policy 38, no. 2, pp. 277-312 (2010)

¹⁰³ Ruggie, J.; Protect, Respect and Remedy: a Framework for Business and Human Rights (2008), UN [A/HRC/8/5](#)

¹⁰⁴ Payne, C.R.; “[A Global Pact for the Environment](#)” in American Society of International Law (ASIL), 22, 12 (2018)

¹⁰⁵ [Aarhus Convention on access to information, public participation in decision making and access to justice in environmental matters](#) 1998

¹⁰⁶ [Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters in Latin America and the Caribbean](#) 2018, opened for signature for other states, see [here](#)

¹⁰⁷ Kotze, L.J. and French, D.; “[The Anthropocentric Ontology of IEL and the SDGs: Towards an ecocentric rule of law in the Anthropocene](#)”, Journal of Comparative Law 7 (2018)

¹⁰⁸ Kotzé, L.; “[International Environmental Law’s Lack of Normative Ambition: an Opportunity for the Global Pact for the Environment?](#)” Journal for European Environmental & Planning Law, Volume 16, Issue 3, pp. 213-236 (2019)

state actors were involved in the drafting project and the proposal arose a civil organization. Then, the GPE would provide non-state actors access to enforcement mechanisms as a sort of expansion of the “environmental democracy”¹⁰⁹. However, due to the fact that it is aimed at being potentially endorsed eventually by states, its scope will not be much different from other IEL instruments.

Furthermore, the principles of resilience (article 16 GPE) and non-regression (article 17 GPE) are considered the newest in IEL and an innovation¹¹⁰, being both strongly linked to the phenomenon of climate change. Regarding the principle of non-regression and progression, it appears as such in the preamble, the articles 3 and 4.3 of the Paris Agreement– “The future we want”¹¹¹ would be its origin -, while resilience¹¹² is connected with precepts related to climate adaptation¹¹³.

Finally, the draft contains control mechanisms to ensure its effectiveness, such as the design of a facilitative-based compliance mechanism and a periodical meeting of the Parties (article 21). It covers other precepts that are typical in MEAs or any binding instrument of public international law, such as the establishment of a Secretariat (article 22), without any institutional reform.

2.3.2. The objectives

The objectives that the GPE initially wrapped were a) to become in a legally binding instrument (MEA), b) to create a framework to encompass all principles in a single tool and c) to develop and internationally institutionalize the right to a healthy environment. But they all seem hard to achieve.

The GPE initially was not framed as a “declaration” in order “to avoid from the outset the pitfalls of ethically weak soft normativity generally associated with non-binding soft law declarations”¹¹⁴. As others affirm “a binding instrument with an institutional structure, would be more conducive to the constant interpretation of its principles”¹¹⁵. While the aim was to codify principles and create a coherent system of IEL, there is little chance that the GPE could become in the latest all-encompassing MEA that it initially purported to be in the traditional sense.

¹⁰⁹ UNEP; “[Globalizing Environmental Democracy: a call for international action](#)”, Perspectives (2012)

¹¹⁰ Almirante, D.; “The Global Pact for the environment: a general instrument to face climate change”, (2019)

¹¹¹ Paragraph 20, UN [A/RES/66/288](#) “The Future We Want” Rio+20 (2012)

¹¹² Robinson, N.A.; “[The Resilience principle](#)”, 5 IUCN Academy Environmental Law 19 (2015)

¹¹³ [What do adaptation to climate change and climate resilience mean?](#)

¹¹⁴ Kotzé, L.J and French, D.; “[A critique of the Global Pact for the Environment: a stillborn initiative or the foundation for Lex Anthropocenae?](#)” in International Environmental Agreements 18:1, pp. 811-838 (2018)

¹¹⁵ Águila, Y. and Viñuales, J.E.; “[A Global Pact for the Environment: Conceptual foundations](#)”, RECIEL, 28 (2019).

Although IEL is widely known by the “significant contributions” of the great amount of treaties or MEAs¹¹⁶, a growing body of non-binding regulations apparently have gained recognition¹¹⁷. Soft law is becoming a more efficient tool because it covers better the diverse nature of the actors and institutions involved, the technologic developments and the uncertainty of environmentally related challenges that we are facing nowadays¹¹⁸. Also, non-binding rules may be more effective when addressing certain social and political challenges¹¹⁹.

Furthermore, soft law provides a higher level of flexibility so “ambitious norms are more easily achieved in soft law institutions than in legally binding ones”¹²⁰. Its instruments “create what are received by states as standards of behavior and promote some policies that can benefit the communities”¹²¹. Whereas in IEL “the acceptance of ‘hard’ obligations would be unrealistic, the adoption of soft law rules is then ‘preferable’¹²² for the States, which may be hesitant to engage in a strict legal system with binding rules and possibilities to enforce them directly in court¹²³.

While it is true that “the adoption of an overarching statement of principles is consistent with the practice in many other areas of international law”¹²⁴, one should bear in mind that “overarching agreements in other fields generally predated more specific agreements”¹²⁵. Habitually, the overall framework comes before specific arrangements - like in a constitutional process for instance-. Otherwise the all-encompassing covenant may lose relevant details.

¹¹⁶ Paragraph 89, “The future we want”, UN A/RES/66/288

¹¹⁷ Lamotte, K.R.; “[Mechanisms for Global Agreements](#)”, in International Environmental Law: The Practitioner’s Guide to the Laws of the Planet”, Martella, R.R. and Grosko, J.B. (Eds), American Bar Association, 2014.

¹¹⁸ Friedrich, J.; “International Environmental “Soft Law”: The Functions and Limits of Nonbinding Instruments in International Environmental Governance and Law”, Heidelberg, Springer (2013)

¹¹⁹ Abbott, K.W and Snidal, D.; “[Hard and Soft Law in International Governance](#)”, International Organization (2000)

¹²⁰ Skjærseth, J., Stokke, O. and Wettstad, J; “[Soft Law, Hard Law, and Effective Implementation of International Environmental Norms](#)”, Global Environmental Politics. 6, pp. 104-120 (2006)

¹²¹ Ahmed, A. and Mustofa, Md. J.; “[Role of soft law in environmental protection: an overview](#), Global Journal of Politics and Law Research”, Vol. 4, No. 2, pp. 1-18 (2016)

¹²² Boubacar, S. D.; “[The binding force of international legal standards on the face of the recurrent practice of soft law](#)”, Adam Mickiewicz University Law Review, V. 7, p. 79-91 (2017)

¹²³ Brus M.M.T.A.; “[Soft Law in Public International Law: A Pragmatic or a Principled Choice? Comparing the Sustainable Development Goals and the Paris Agreement](#)”. In: Westerman P., Hage J., Kirste S., Mackor A. (eds) Legal Validity and Soft Law. Law and Philosophy Library, vol 122. Springer, Cham (2018)

¹²⁴ Águila, Y. and Viñuales, J.E.; “[A Global Pact for the Environment: Conceptual foundations](#)”, Review of European, Comparative and International Environmental Law (RECIEL), 28:3-12, (2019)

¹²⁵ Biniaz, S.; “[The UNGA Resolution on a ‘Global Pact for the Environment’: A chance to put the horse before the cart](#)” in Review of European, Comparative and International Environmental Law (RECIEL), 28-33-39, (2019)

On the other hand, the legal nature of these precepts is claimed to be a priori as general principles of international law in the form of the article 38.1.c) of the Statute of the ICJ. Then its function is to fill the gaps so as so “general principles will normally only be resorted to if there is a situation where there is neither an applicable treaty nor an applicable rule of customary international law”¹²⁶.

Notwithstanding, general principles of international law “are not, in any direct sense, ‘adopted’ or ‘legislated’; instead, they form part of most, perhaps all, legal systems of the world”. As Klabbers states, “they cannot be traced back to expressions of consent by states, and it is probably for that reason that the ICJ has never decided a case solely and expressly on the basis of a general principle of law”. Another questions that arise are whether the inclusion of legally binding principles and norms to non-binding declarations would mean a diminution of their mandatory character or a regression in terms of its normative effect or how its relationship with other MEAs should be¹²⁷ and its impacts. These are some conceptual issues that the final GPE will have to figure out.

Additionally, is interesting to note that the GPE is founded on a basis of the ‘right to an ecologically sound environment’ alongside with the correspondent ‘duty to take care of the environment’. Experts involved on the drafting process sustain that it is designed to cope with the wave or “third generation of fundamental rights”¹²⁸ so the GPE would be a tool to proclaim the right to a healthy environment at international level, enshrining it. Therefore the GPE intended to become in the third international human rights treaty together with the ICCPR and the ICESCR¹²⁹. The GPE then, even as a soft law declaration¹³⁰, would have the same meaning that both Covenants had in relation with the UDHR¹³¹. It is noteworthy that the UDHR was “initially accepted as soft law instrument but over the years acquire increasing binding force”¹³²

¹²⁶ Klabbers, J.: “International lawmaking”, in International law

¹²⁷ Raith, J.; “[“The Global Pact for the Environment”. A new instrument to protect the planet?”](#) in Journal for European Environmental and Planning Law 15, 3-23 (2018)

¹²⁸ Le Club des Juristes; “[“White Paper Toward a Global Pact for the Environment”](#)” (2017)

¹²⁹ UN [A/RES/2200A \(XXI\)](#) International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights (1966)

¹³⁰ Barelli, M.; “[“The role of soft law in the international legal system: the case of the United Nations Declaration on the Rights of Indigenous Peoples”](#)”, The International and Comparative Law Quarterly, Vol. 58, 4 (2009) and Olivier, M.; “[“The relevance of soft law as a source of international human rights”](#)”, Vol. 35, 1, pp. 289-307 (2002)

¹³¹ UN [A/RES/217 \(III\)](#) International Bill of Human Rights (1948)

¹³² Rockefeller, S.; “[“Principles of Environmental Conservation and Sustainable Development: Summary and Survey. A study in the field of International Law and related international reports”](#)”, Earth Charter Project, SCR (1996)

In fact the “Special Rapporteur recommends that the HRC consider supporting the recognition of the right to a safe, clean, healthy and sustainable environment in a global instrument”¹³³, which for some could be the GPE. It is essential to acknowledge the importance of “the legal recognition of the right to a healthy environment at the global level, so that this fundamental human right can be enjoyed by all persons in all States, rather than in the subset of countries where it is currently recognized. The global recognition of this right would fill a glaring gap in the architecture of international human right”¹³⁴. Specifically in the European Union will add value¹³⁵. In summary, “the GPE has the potential to contribute to a rights-based approach to environmental protection”¹³⁶ but it is not the only instrument likely to become in the next milestone for the human rights domain.

2.4. Conclusion

The GPE is a pertinent initiative born from civil society that it may potentially become in a useful legal instrument. The idea of an overarching framework for IEL and governance seems legitimate and its political and legal backup indicates *a priori* higher chances to become in a successful and influential declaration than other proposals such as the WCN, the Earth Charter or the IUCN Draft.

While it is true that the GPE includes several elements that can be seen as a tool to improve the effectiveness of IEL, its sudden shift from a MEA to a soft law document may undermine its power. The major downside of this unfortunate circumstance is related to the possibility to be enforceable in courts but it also might make easier its final and definitive adoption with diplomatic symbolism.

Nonetheless, its criticism is focused first, on the consequences for the legal value and or position of already acknowledged IEL principles and second, on the fact that it does not really add anything new in the environmental law arena. Only the materialization of the resilience and non-regression principles as well as international recognition of the right to an ecologically sound environmental with its complementary duty to take care of the environment represent a true innovation. Given the IEL structural gaps, the GPE draft role as a legal instrument does not appear to be significant.

¹³³ Paragraph 14 of the “Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment” UN [A/HRC/37/59](#)

¹³⁴ Paragraph 53 of HHRR obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment UN [A/73/188](#)

¹³⁵ Kokott, J, and Sobotta, C.; “[The GPE: What Would the Right and the Duty to Environmental Protection Change for EU law?](#)” in EJIL Talk (2019) and Thieffry, P.; “[The Proposed GPE and European Law](#)”, EEELR (2018)

¹³⁶ Knox, J.H; “[The GPE: At the crossroads of human rights and the environment](#)” RECIEL (2019)

3. THE ANTHROPOCENE AND THE EARTH SYSTEM APPROACH

3.1. Introduction

The Anthropocene is widely understood as the new epoch in which we live in. Humankind has exerted a huge influence in the natural world to the extent that is deemed the principal driver and cause of environmental degradation. The socio-ecological crisis has its roots on the interconnection of the biophysical processes that are taking place at a global level. The earth functions as a system where all its components have direct repercussions between them and where humans take part too.

Nevertheless, our actions and activities are pressing this system out of its limits and capabilities. We are getting dangerously close to the point where is very likely that damaging events and unfavorable circumstances linked such as natural catastrophes, extreme climate phenomena, mass extinctions and the earth warming become irreversible. Those limits are known as the ‘planetary boundaries’ or climate ‘tipping points’ that scientifically measure the earth natural conditions.

This Chapter introduces the earth system approach in the volatile context of the Anthropocene. It responds to the sub-question of what is the earth system science, which are its main features and why is it relevant for the re-imagination of a legal framework in environmental law. Therefore, it is composed of a scientific background as well as characteristics of the earth system science in the Anthropocene, which are summarized in three notions extrapolated from several literature sources.

3.2. Background

We are in a state of planetary emergency¹³⁷. It is well known that irreversible changes in nature and the climate and pristine conditions of the environment are extremely likely to happen – if not already happening-. Considering that all elements and processes occurring in the environment are highly interrelated by means of the establishment of a web or network, changes in one component may have consequences at the entire level. The earth system is the science that underlines the relationship between global flows and biophysical processes which are able to auto-regulate under natural conditions. The earth system science could be defined as a “single, self-regulating system comprised of physical, chemical, biological and human components”¹³⁸.

¹³⁷ Lenton, T.M. Rockström, J. Gaffney, O., Rahmstorf, S., Richardson, K., Steffen, W., Schellnhuber, H. J.; “[Climate tipping points – too risky to bet against](#)”, Nature, Vol. 575, pp. 592-595 (28th November 2019)

¹³⁸ Moore, B., Underdal, A., Lemke, P., Loreau, M.; “[The Amsterdam Declaration on Global Change](#)” (2001)

Unfortunately, human activities have pulled and pushed this self-regulatory system “outside the stable environmental state of the Holocene, with consequences that are detrimental or even catastrophic”¹³⁹, giving way to a volatile epoch named – arguably¹⁴⁰ - the Anthropocene. Despite the fact that its discussion about when exactly this time period hypothetically would have begun, “of all the candidates for a start date, the beginning of the Great Acceleration is by far the most convincing from an Earth System science perspective¹⁴¹”. What is clear is that humankind is a driving force of changes and alterations that are threatening our own existence¹⁴². Even if from a stratigraphic view Anthropocene is denied, it certainly implies further scrutiny and engagement¹⁴³.

Scientists found using quantitative researches that is highly important for the humanity to maintain the Holocene-like conditions of the Earth¹⁴⁴. These conditions are identified with nine biophysical subsystems or processes in which each one entail a threshold value. They are called the ‘planetary boundaries’. In case the threshold is crossed, subsystems could shift¹⁴⁵ into an unknown new state “with deleterious or potentially disastrous consequences for humans” and that “could generate unacceptable environmental change” such as mass extinctions¹⁴⁶. The planetary boundaries are “tightly coupled” and the transgression of one could affect the risks of another boundary.

In addition to planetary boundaries, ‘tipping points’ in the climate system have been identified¹⁴⁷. These represent a threshold that can lead to an irreversible change in the climate at a global level.

¹³⁹ Rockström, J., Steffen, W. et al.; “[Planetary boundaries: exploring the safe operating space for humanity](#)”, Ecology and Society 14(2): 32 (2009)

¹⁴⁰ ‘Arguably’ is stated from the point of view of a new stratigraphic denomination, in Gibbard, P.L. and Walker, M. J. C.; “[The term ‘Anthropocene’ in the context of formal geological classification](#)”, Geological Society London Special Publications 395 (1), pp. 29 -37 (2014). Others stress that the Anthropocene merely implies the expansion of Western (European) values and occurrences in Morrison, K.; “[Provincializing the Anthropocene](#)”, Seminar 673 (2015)

¹⁴⁰ Crutzen, P.J.; “Geology of mankind”, Nature, Vol 415, 3, p. 23 (2002)

¹⁴¹ Steffen, W., Broadgate, W., Deutsch, L., Gaffney, O., Ludwig, C.; “[The trajectory of the Anthropocene: The Great Acceleration](#)”, The Anthropocene Review, pp. 81 - 98 (2015) and Zalasiewicz, J., et al., “[When did the Anthropocene begin? A mid-twentieth century boundary level is stratigraphically optimal](#)”, Quaternary International (2014)

¹⁴² Zalasiewicz, J.; Waters, C.N.; Summerhayes, C.P.; et al. “[The Working Group on the Anthropocene: Summary of evidence and interim recommendations](#)”, Anthropocene, 19, pp. 55–60 (2017)

¹⁴³ Castree, N.; “[The ‘Anthropocene’ in Global Change Science: Expertise, the Earth, and the Future of Humanity](#)”, in Biermann, F. and Lovbrand (Eds.), “Anthropocene encounters: new directions in green political thinking” (2019)

¹⁴⁴ Rockström, J., Steffen, W. et al.; “[Planetary boundaries: exploring the safe operating space for humanity](#)” (2009)

¹⁴⁵ Hughes, T.P., Carpenter, S., Rockstrom, J., Scheffer, M., Walker, B., “[Multiscale regime shifts and planetary boundaries](#)”, Trends in Ecology and Evolution, Vol. 28, 7 (July 2013)

¹⁴⁶ See for example, Rothman, D.H.; “[Thresholds of catastrophe in the Earth system](#)”, Science Advances, 3, 9 (2017)

¹⁴⁷ The tipping points are: the Amazon rainforest, the Arctic sea ice, the Atlantic circulation, the boreal forest, coral reefs, Greenland ice sheet, the permafrost thawing, the West Antarctic ice sheet and the Wilkes Basin, in Lenton, T.M.,

The IPCC states that even though the precise intensity or degree of climate change sufficient to trigger a tipping point remain uncertain, the risk associated with crossing multiple ‘tipping points’ increases with rising temperature¹⁴⁸. That is why it is crucial to deem the Earth as a system.

Furthermore, scientists have also verified that at least four of these nine boundaries are already “beyond the zone of uncertainty” and that may trigger the destabilization of the earth system. As the main authors that exposed this phenomenon affirm, “there is an urgent need for a new paradigm that integrates the continued development of human societies and the maintenance of the Earth system in a resilient and accommodating state”¹⁴⁹. Therefore - although more research on the implications and outcomes of the earth system and its limits would be convenient from both a scientific and a social point of view¹⁵⁰ - it is important to note that in any case “one important consequence of the definition of planetary boundaries is that urgent action is required”¹⁵¹.

Due to the fact that “institutions, organizations and mechanisms by which humans currently govern their relationship with the natural environment and global biochemical systems are insufficient and poorly understood”¹⁵², there is a need of a major transformative shift in governance, with far-reaching new international legal norms and a global institutional framework to be effective¹⁵³ towards a ‘safe operating space for humanity’. As a matter of fact, the only way to avoid crossing the planetary boundaries or tipping points in the climate is through a “coordinated, deliberate effort by human societies to manage our relationship with the rest of the Earth System, recognizing that humanity is an integral, interacting component of the system”¹⁵⁴.

Held, H., Kriegler, E., Hall, J. W., Lucht, W., Rahmstorf, S., Schellnhuber, H. J.; “[Tipping elements in the Earth’s climate system](#)”, Proceedings of the National Academy of Sciences (PNAS), 105, 6 (February 2008)

¹⁴⁸ IPCC AR5 WGII; “[Summary for policymakers: Climate change: Impacts, Adaptation and Vulnerability](#)” (2014)

¹⁴⁹ Steffen, W. et al.; Planetary boundaries: Guiding human development on a changing planet, Science 347, (2015)

¹⁵⁰ Biermann, F., Betsill, M. M., Gupta, J., Kanie, N., Lebel, L., Liverman, D., Schroeder, H., Siebenhuner, B., Zondervan, R.; “[Earth system governance: a research framework](#)”, International Environmental Agreements, 10, (2010) and Biermann, F., Betsill, M.M., Camargo Vieira, S., Gupta, J., Kanie, N., Lebel, L., Liverman, D., Schroeder, H., Siebenhuner, B., Yanda, P.Z., Zondervan, R.; “[Navigating the Anthropocene. The Earth System Governance Project Strategy Paper](#)”. Current Opinion in Environmental Sustainability 2 (3), 202–208 (2010)

¹⁵¹ Biermann, F. et al; “[Planetary boundaries and earth system governance: Exploring the links](#)”, Ecological Economics, 81, pp. 4-9 (2012)

¹⁵² Biermann, F., et al; “[Earth system governance: a research framework](#)”, Intern. Environmental Agreements 10 (2010)

¹⁵³ Biermann, F., et al; “[Navigating the Anthropocene: Improving Earth System Governance](#)” (2012)

¹⁵⁴ Steffen, W., Rockstrom, J., Rochardson, K., Lenton, T.M., Folke, C., Liverman, D., Summerhayes, C.P., Barnosky, A.D., Cornell, S.E., Crucifix, M., Donges, J. J., Fetzer, I., Lade, S. J., Scheffer, M., Winkelmann, R., Schellnhuber, H. J.;, “[Trajectories of the Earth System in the Anthropocene](#)”, PNAS, 115 (33), pp. 8252-8259, (August 2018)

The concept of planetary boundaries or tipping points offers a scientific framework but where a political, normative and social process have to be still developed. This is to say that while the global ecological thresholds are a biophysical phenomenon, limitations from the planetary boundaries consist on a human creation. The complexities and interconnections that arise from the earth system conception demands an “overall governance integration of all nine boundaries”, where “overarching agreements could be conceived” such as “general statements of principles and the setup of scientific assessment and advisory bodies rather than of a more detailed global framework agreement that covers all boundaries”¹⁵⁵.

It is possible to control and govern the earth system integrity and its interactions¹⁵⁶. In some domains this approach has already exert its influence. Scholars have fostered governance projects and policies guided by earth system science¹⁵⁷, which has emerged as a “holistic super-discipline that aims to capture all processes in nature and human societies as one interlinked system”¹⁵⁸. Whereas earth system science requires a specific response from the social and humanities domain, in the field of law and legal regulations this approach is still underdeveloped¹⁵⁹. That is probably because the attention is used to be placed first on “exploring how institutions shape behavior” and then it will “shift towards exploring how institutions themselves change”¹⁶⁰. In sum, the all-encompassing nature of the earth system alongside with the interdependency of its elements and processes involved, the rapid changes as well as its long-term effects and complexity¹⁶¹ involve a huge challenge for those who try to respond from a juridical perspective to the Anthropocene.

¹⁵⁵ Biermann, F. et al; “[Planetary boundaries and earth system governance: Exploring the links](#)”, Ecological Economics, 81, pp. 4-9 (2012)

¹⁵⁶ Nilsson, M. and Persson, A.; “[Can Earth system interactions be governed? Governance functions for linking climate change mitigation with land use, freshwater and biodiversity protection](#)”, Ecological Economics, volume 75, pp. 61-71 (2012)

¹⁵⁷ Biermann, F., Betsill, M., Gupta, J., Kani, N., Lebel, L., Liverman, D., Siebenhüner, B.; “[Earth System Governance: People, Places and the Planet. Science and Implementation Plan of the Earth System Governance Project](#)”, IHDP Report; 20, Bonn (2009) and Biermann, F. et al.; “[The Earth System Governance Project as a network organization: a critical assessment after ten years](#)”, Current Opinion in Environmental Sustainability, 39, pp. 17-23 (2019)

¹⁵⁸ Lövbrand, E.; Strippel, J.; Wiman, B.; “[Earth System governmentality: Reflections on Science in the Anthropocene](#)”. Global Environmental Change, 19, pp. 7–13 (2009)

¹⁵⁹ Kotzé, L.J. and Kim, R.E.; “Earth System law: The juridical dimensions of earth system governance”, Earth System Governance 1, Elsevier (12th March 2019)

¹⁶⁰ Burch, S., Gupta, A., Inoue, C.Y.A., Kalfagianni, A., Persson, A. et al.; “[New directions in earth system governance research](#)”, Earth System Governance, Volume 1, (2019)

¹⁶¹ Underdal, A.; “[Complexity and challenges of long-term environmental governance](#)”, Global Environmental Change, Volume 20, Issue 3, pp. 386-393 (2010)

3.3. Characteristics

It is quite complex indeed to briefly summarize the characteristics of the earth system. Accordingly, the main traits of the earth system approach are outlined here by following – among other sources – the premise derived from the Earth System Governance research project, which pretends “to explore governance mechanisms addressing multilevel environmental change”¹⁶². They are identified as ‘contextual conditions’ and are considered to be “emerging and powerful trends that are particularly relevant” for the earth system representing “meta-level conditions that define the context” and “provide a common language”¹⁶³. They comprise the transformations, inequalities, the Anthropocene itself and the diversity¹⁶⁴.

In order to establish a framework that will serve first as a delimitation of what earth system law would entail and as a tool to make a valid comparison with the GPE in the next chapter, the ‘contextual conditions’ are condensed, inferred and reflected in three main characteristics. This is to say that the interdependency, alterability and complexity – which is a result of the previous – of the earth system science approach are a direct consequence of the transformations, inequalities, the Anthropocene and the diversity derived from the earth system ‘contextual conditions’.

3.3.1. Interdependency

First of all, the earth system is characterized by its intertwined nature due to its interlinkages in all the socio-ecological systems. The interdependency of its processes is triggered by its many interactions across natural, social and economic systems which “shape global environmental change”¹⁶⁵. The functioning and consequences of biodiversity loss exemplifies this. If a specie disappears or is dangerously threatened the whole ecosystem is extremely endangered because “all

¹⁶² “[Earth System Governance. Science and Implementation Plan of the Earth System Governance Project](#)” (2018).

¹⁶³ Burch, S., et al.; “[New directions in earth system governance research](#)”, Earth System Governance, 1, (2019)

¹⁶⁴ I.e. (a) The numerous political, technological and socio-economic transformations that are shaping and being shaped by governance processes; (b) the increasing and multifaceted inequalities across and within countries and socioeconomic groups; (c) the tremendous and contested impact of human beings on the entire planet and the changing human-nature relationship captured by the notion of the Anthropocene; and (d) the opportunities and challenges offered by the diversity and pluralism of human societies in knowledge, culture and identities that have a bearing on how sustainability challenges are addressed in the contemporary world.

¹⁶⁵ Nilsson, M. and Persson, A.; “[Can Earth system interactions be governed? Governance functions for linking climate change mitigation with land use, freshwater and biodiversity protection](#)”, Ecological Economics, 75 (2012)

species are connected to others through ecological interactions”¹⁶⁶, proving the synergies and interactions in the earth system. Moreover, humans are intrinsic part of the earth system so “social and economic networks of teleconnections are spanning the globe” which at the same time “it is dominated by planetary-scale social-ecological feedbacks”¹⁶⁷. Given the interconnections, all levels are affected. The proposals for a circular economy¹⁶⁸ reflect this. Therefore, the earth system suggests a “planetary-scale human agency”¹⁶⁹ where “unpredictable shifts at multiple local and global scales”¹⁷⁰ are taking place, all interlinked without a hierarchy.

3.3.2. Alterability

Furthermore, these shifts are an evidence of the rapid and prompt changes that are modifying the natural conditions of the planet, being the phenomena of climate change its maximum expression and noticeable alteration. What is more, these ecological transformations are strongly linked to the public wellbeing to the point of affecting nearly every dimension of the human health¹⁷¹. The variability and alterability are important causes of the institutional mismatch¹⁷² between the actual static structure of environmental governance and law – firmly rooted in a state-based ontology - and the lively and unpredictable earth system.

Additionally, the changes are abrupt, nonlinear, even catastrophic¹⁷³, and very difficult to predict. This leads to the volatility of the earth system¹⁷⁴. The earth system comprises both human-social and ecological elements as a socio-ecological complex adaptive system and consequently

¹⁶⁶ Jonhson, C.N, Balmford, A., Brook, B.B., Buettel, J.C., Galetti, M., Guagchun, L., Wilmshurst, J.M.; “[Biodiversity losses and conservation responses in the Anthropocene](#)”, Science 356 (6335), pp. 270-275 (2017)

¹⁶⁷ Donges, J.F., Winkelmann, R., Lucht, W., Cornell, S.E., Dyke, J.G., Rockstrom, J., Heitzig, J., Schellnhuber, H.J.; “[Closing the loop: Reconnecting human dynamics to Earth System science](#)”, The Anthropocene Review, vol. 4, 2, pp. 151- 157, (2017)

¹⁶⁸ Korkhonen, J., Honkasalo, A., Seppala, J.; “[Circular economy: the concept and its limitations](#)”, Ecological Economics, volume 143 (2018)

¹⁶⁹ Donges, J.F., et al; “[Closing the loop: Reconnecting human dynamics to Earth System science](#)” (2017)

¹⁷⁰ Kotzé, L.; “[Earth System Law for the Anthropocene](#)”, Sustainability, 11, 6796, (November 2019)

¹⁷¹ Myers, S.S., Gaffikin, L., Golden, C.D., Ostfeld, R.S., Redford., K.H., Ricketts, T.H., Turner, W.R., Osofsky, S.A., “[Human health impacts of ecosystem alteration](#)”, Proceedings of the National Academy of Sciences, 110 (47), (2013)

¹⁷² Young, O. R.; “The Institutional Dimensions of Environmental Change: Fit, Interplay, and Scale”. Cambridge, Massachusets: MIT Press (2002)

¹⁷³ Galaz, V.; “Planetary terra incognita”, in “Global environmental governance, technology and politics: The Anthropocene gap”, Edward Elgar (2014)

¹⁷⁴ Dumanoski, D.; “The end of the long summer: why we must remake our civilization to survive on a volatile Earth”, Crown Publishers, New York (2009)

“inherently unpredictable”. Its “significant capacity for surprise” may trigger a perverse or undesirable resilience that would threaten the “overall system viability”¹⁷⁵. Moreover, the Anthropocene is represented “with its imagery of an integrated Earth system where humans are embedded in nature and where universal but differentially distributed patterns of vulnerability prevail”¹⁷⁶. That vulnerability¹⁷⁷ is related to the predomination of the human interests over “the ecological elements of the Earth system”.

3.3.3. Complexity

Finally, the interdependency and the alterability have prompted the complexity of the ‘coupled human and ecological system’¹⁷⁸ which is the inseparability of the social and natural structures and is described by “complex and multiple-scale feedbacks, critical thresholds, abrupt changes and large temporal and spatial variability”¹⁷⁹. It is essential “to fundamentally rethink the environment-humanity relationship” and in order to do so, “integrating our understanding of human history with that of the earth system is a timely and urgent task”. We are only part of a complex network but “the only part that can be held responsible”¹⁸⁰.

A “complex earth system model couples the physical climate system with biogeochemical cycles” as well as societal processes¹⁸¹. When “systems that arise in interactions between humans and the biophysical setting in which they operate” join to the analysis of social institutions created by humans to control these interactions, such as the law and legal regulations, it is possible to “understand and respond to the challenge of governing complex systems in the Anthropocene”¹⁸².

¹⁷⁵ Phelan, L., Henderson-Sellers, A., Taplin, R., “[The political economy of addressing the climate crisis in the earth system: undermining perverse resilience](#)”, New Political Economy, Volume 18, Issue 2 (2013)

¹⁷⁶ Kotzé, L.J.; “The Anthropocene, Earth system and socio-ecological injustice in an age of human rights”, Journal of Human Rights and the Environment, Vo. 10, 1 (March 2019)

¹⁷⁷ Turner, B. L., Matson, P. A., McCarthy, J. J., Corell, R. W., Christensen, L., Eckley, N., Tyler, N. “[Illustrating the coupled human-environment system for vulnerability analysis: three case studies](#)”, PNAS USA, 100(14) (2003)

¹⁷⁸ Kotchen, M.J., and Young, O. R.; “[Meeting the challenges of the Anthropocene: towards a science of coupled human-biophysical systems](#)”, Global Environmental Change, 17, pp. 149-151 (2007)

¹⁷⁹ Lövbrand, E.; et al.; “[Earth System governmentality: Reflections on Science in the Anthropocene](#)” (2009)

¹⁸⁰ Palsson, G., Szerszynski, B., Sorlin, S.; Marks, J., Avril, B., Crumley, C., Hackmann, H., Holm, P., Ingram, J., Kirman, A., Pardo Buendia, M., Weehuizen, R.; “[Reconceptualizing the ‘Anthropos’ in the Anthropocene: Integrating the social sciences and humanities in global environmental change research](#)”, Environmental Science & Policy, (2013)

¹⁸¹ Nobre, C., Brasseur, G.P., Shapiro, M. A., et al., “[Addressing the complexity of the earth system](#)”, BAMS (2010)

¹⁸² Young, O.R.; Preface “[Governing Complex Systems: Social Capital for the Anthropocene](#)”, Cambridge, Massachusetts, MIT Press (2017)

3.4. Conclusion

The anthropogenic conditions and the latest scientific research about the consideration of the earth as a system reveal a series of unusual and intricate circumstances that may seriously jeopardize the human comfort. That means that the ‘planetary boundaries’ or indicators that frame the ‘safe operating space for humanity’ are threatened with the actual governance and regulatory system. Consequently, an overarching framework which integrates the notions and characteristics that conform the earth system science is required.

Nonetheless, the delineation of the characteristics that define the earth system in the Anthropocene epoch is quite challenging because of the uncertainty and volatility. That is why more research would be desirable in order to develop a response from social institutions. Despite that and based on the existent academic exploration, it has been possible to elaborate the formulation of three characteristics that outline the particularities of the earth system science in the Anthropocene.

First of all, the links between the biophysical processes including human socio-economic aspects confirm the interdependency as the most evident characteristic. Moreover, changes occurring are unexpected and escalate quickly such as climate alterations, to the point that sometimes this alterability can lead to the creation of inequalities and the consequent feeling of vulnerability. Finally, the interdependency and the alterability that entail these anthropogenic circumstances, induce the complexity of the situation, which the humanity should be responsible to govern.

4. EARTH SYSTEM LAW

4.1. Introduction

The emergence of the earth system concept and the characteristics of the Anthropocene would thus suggest a change in the manner of governing the human-nature relationship, especially from the legal and regulatory point of view. A new vision beyond environmental law¹⁸³ and governance is highly desirable since long time ago¹⁸⁴ given that it has neither been able to shape a real nor an equitable answer to the global ecological crisis under the paradigm of sustainable development¹⁸⁵. The urgency is even more manifest now in order to stay within the planetary boundaries that frame the earth system. That is because environmental law is a driven force and cause of its threats¹⁸⁶.

This chapter comprises two parts. First, some factors that led to the ineffectiveness and failure of environmental law are highlighted by identifying the main hurdles of the traditional approach in order to answer the associated sub-question. Afterward there is proposal of the new legal approach named ‘earth system law’. This second section is a reaction to the sub-question about how the law can deal with the earth system science and the Anthropocene and is presented with three features.

4.2. The failure and ineffectiveness of environmental law to tackle the Anthropocene

Humans design, create and establish a social order through regulatory institutions. Law is used as a “critical element of the human-political-social system” in order to achieve justice¹⁸⁷ and seek inclusion, representation, stability or accountability¹⁸⁸. However, is acknowledged that humankind is the principal determining factor of the global change¹⁸⁹ which is reshaping the conditions of the earth’ processes. ‘Humans as geological agents’ are part of the system too. This implies that to keep considering the ‘human-political-social systems’ arising from regulatory institutions such as the law as something disconnected from the environment and biophysical boundaries is a mistake.

¹⁸³ This dissertation examines the field of environmental law from a widely general point of view, without focusing on distinctions between IEL, transnational or global approaches for instance that would exceed the scope of the topic. However, this chapter is essentially oriented to the IEL most traditional and pragmatic current conception.

¹⁸⁴ Speth, J.G. and Haas, P.M.; “Global Environmental Governance”, Island Press, 139 (2006)

¹⁸⁵ Viñuales, J.E., “[The Rise and Fall of Sustainable Development](#)”, RECIEL, Volume 22, Issue 1 (2013)

¹⁸⁶ Kotzé, L.J.; “Earth system law for the Anthropocene” (2019)

¹⁸⁷ Reese, G. and Jacob, L.; “[Principles of environmental justice and pro-environmental action: a two-step process model of moral anger and responsibility to act](#)”, Environmental Science and Policy, volume 51 (2015)

¹⁸⁸ Kotzé, L.J. and Kim, R.E.; “Earth System law: The juridical dimensions of earth system governance” (2019)

¹⁸⁹ UN [A/74/236](#) Harmony with Nature (2019)

IEL has failed when trying to tackle environmental challenges brought by the Anthropocene and its governance structure is unsuitable for the 21st century¹⁹⁰. The “society’ current failure to address the most profound environmental challenges of our times” because of the struggle to comprehend, analyze, and respond to the major implications of humanity’s transgression into the new epoch” is understood as the ‘Anthropocene gap’¹⁹¹. There are several reasons and factors that illustrate this evolution¹⁹² and a detachment between earth system conditions and the old-fashioned traditional structure of IEL. They are outlined by several authors from different approaches¹⁹³ but what is important to note is that they all share IEL is no longer suitable to ‘navigate the Anthropocene’¹⁹⁴.

Apart from this failure, a preliminary explanation relies on its ineffectiveness. This ineptitude is drawn from “the impact of an international regime on the problems that it sets out to addresses; and employing the authority of a regime as a measurement of successful enforcement and compliance”¹⁹⁵. As extensively stated in the introduction environmental law has proved ineffective.

4.2.1. Fragmentation

In relation with the interdependency as a main characteristic of the earth system, environmental law is defined by its fragmentation¹⁹⁶, trapped in a monodisciplinary scholarship and a segmented regulatory paradigm. Generally speaking, international law is a highly fragmented field¹⁹⁷ and in the environmental law domain the fragmentation is particularly accentuated¹⁹⁸. It is widely acknowledged that to tackle and fight against the consequences of environmental detriment and

¹⁹⁰ United Nations Environment Programme (UNEP), [“21 Issues for the 21st Century: Results of the UNEP Foresight Process on Emerging Environmental Issues”](#) (2012)

¹⁹¹ Galaz, V., “Global Environmental Governance, Technology and Politics: The Anthropocene Gap”, Edward Elgar

¹⁹² Yang, T.; Percival, R. V.; “The emergence of global environmental law”, *Ecology Law Quarterly*, 36(3) (2009)

¹⁹³ For instance, Boyd, W.; [“Climate change, fragmentation, and the challenges of global environmental law: elements of a post-Copenhagen assemblage”](#) (2010)

¹⁹⁴ Biermann, F.; “Navigating the Anthropocene: Improving Earth System Governance”, 335 *Science* 1306 (2012) and Kotzé, L.J. and Kim, R.E.; “Earth system law: the juridical dimensions of earth system governance”, *Earth System Governance* 1 (2019)

¹⁹⁵ Zovko, I.; [“International law-making for the environment: a question of effectiveness”](#) University of Joensuu (2005)

¹⁹⁶ Zelli, F. and van Asselt, H.; [“The institutional fragmentation of global environmental governance: Causes, consequences, and responses”](#), *Global Environmental Politics*, 13(3), pp. 1–13 (2013)

¹⁹⁷ UNGA A/CN.4/L.682 [“Fragmentation of International Law: Difficulties arising from the diversification and expansion of International Law. Report of the Study Group of the International Law Commission”](#) (April 2006)

¹⁹⁸ The most acute manifestation about the problems of relationships between treaties that belong to different regimes has concerned relations between instruments forming part of trade and environmental regimes, in *Ibid*, 273.

change key actions include strategies that are regulated particularly in a sector-specific manner¹⁹⁹, coming from different grounds while affecting diverse fields, without a hierarchical superior norm.

On the one hand this segregation and disintegration is being seen as positive – or at least, not entirely negative for the purposes of environmental law²⁰⁰ - while on the other hand, it could be considered as an ineffective characteristic for its compliance²⁰¹. What is clear is that because of this fragmentation, environmental law does not insinuate an interdependency of the system's elements so it does not create a coherent, holistic and synergistic²⁰² framework. The system of MEAs is still “not sufficiently more than the sum of its norms and institutions”²⁰³. Furthermore it does not follow “an all-encompassing, integrated and reflexive systems approach”²⁰⁴, since it keeps “bounded to defined places, spaces, habitats and ecosystems, species and objects”²⁰⁵.

It is identified that environmental governance and its skeleton also suffers from this fragmentation, given the lack of an overarching institution²⁰⁶. Thus, while “many human activities are somehow within the province of an international organization” the environment protection is the exception. That “absence of broad political agreement on whether and how to protect the environment, and, above all, who gets to pay the bill (...) suggests that environmental protection has not been a huge priority”²⁰⁷. In the same sense, “a lack of political will to really do something about global environmental problems”²⁰⁸ is recognized as the main reason for the ineffectiveness of IEL.

¹⁹⁹ “Key actions include reducing land degradation, biodiversity loss, and air, land and water pollution; improving water and resource management; climate change mitigation and adaptation; resource efficiency; addressing decarbonization, decoupling and detoxification; and the prevention and management of risk and disasters. Those all require more ambitious and effective policies” in UNEP; [GEO-6: Summary for Policymakers](#). Nairobi (2019).

²⁰⁰ For instance, van Asselt, H.; “[Dealing with the Fragmentation of Global Climate Governance. Legal and Political Approaches in Interplay Management](#)”, Global Governance Working Paper No 30 (2007) and Biniarz, S.; “The UNGA Resolution on a ‘GPE’: A chance to put the horse before the cart” RECIEL (2019) or Kotzé, L.J and French, D.; “A critique of the GPE: a stillborn initiative or the foundation for Lex Anthropocenae?” in Intern. Environ. Agreem. (2018)

²⁰¹ Kerbrat, Y.; “Effective Implementation of Environmental Law”, Chapter 16 in Águila, Y. and Viñuales, J.E.; “A Global Pact for the Environment: Legal foundations”, Cambridge: C-EENRG Report 2019-1 (2019)

²⁰² UN Doc A/73/419. Report “Gaps in IEL and Environment-related Instruments: Towards a GPE”

²⁰³ Jóhannsdóttir, A., Cresswell I., and Bridgewater, P.: “[The Current Framework for International Governance of Biodiversity: Is It Doing More Harm Than Good?](#)”, RECIEL, 19, 2, pp. 139–49 (2010)

²⁰⁴ Kim, R.E. and Bosselmann, K.; “IEL in the Anthropocene: towards a purposive system of MEAs”, TEL (2013)

²⁰⁵ Stephens, T., “Reimagining international environmental law in the Anthropocene”, in Kotzé, L. (Ed.), “Environmental Law and Governance for the Anthropocene” Hart, Oxford, pp. 31-54 (2017)

²⁰⁶ Some advocate for the creation of a World Environmental Organization or UN Environmental Trusteeship Council

²⁰⁷ Klabbers, J.; ‘The subjects of International Law’ in “International Law”, Cambridge University Press.

²⁰⁸ Verschuuren, J.M.; “[Global Environmental Law](#)”, Tilburg Law Review 17, pp. 222-227 (2012)

4.2.2. Stagnation

In comparison with the alterability and the volatility of the earth system science and the Anthropocene conditions, environmental law is considered an “incremental and piecemeal” field. Overall international law is stagnating²⁰⁹ and it does not pursue radical change. Environmental law particularly is “trapped within conventional top-down non-systems oriented interstate-law” and based on state sovereignty²¹⁰. Moreover, it has a reactive character because it operates after the issue²¹¹ instead of anticipating earth system disruptions. It is not proactive, reflexive and preventive. The precautionary principle, a sign of this anticipatory character, has many drawbacks in its practical application²¹² despite the importance of an ex ante evaluation of the legislation through impact assessments²¹³. While it is well-known that it needs “to achieve deep structural reforms”²¹⁴, the “characteristics of ecological crises tend to overwhelm our institutional responses to these”²¹⁵. Additionally, environmental law has insufficient capacity of adaptation to deal with the earth system uncertainty and intricacy. The conventional assumptions about the steady state and stability²¹⁶, harmony and continuity of our period of time are no longer valid. Therefore this traditional legal outlook is “unable to fully respond to a non-linear Earth system characterized by unpredictable, potentially catastrophic shifts at multiple scales”²¹⁷.

4.2.3. State-centrism and anthropocentrism

The sum of the institutional fragmentation and the lawmaking stagnation trigger the inability to tackle the Anthropocene’s challenges and the complexity of the whole situation. Factors related to

²⁰⁹ Pauwelyn, J., Wessel, R.A. and Wouters, J.; “[When structures become shackles: stagnation and dynamics in international lawmaking](#)”, European Journal of International Law, Volume 25, 3, (2014)

²¹⁰ Kotze, L.; “Earth system law for the Anthropocene” (2019)

²¹¹ Philippopoulos-Mihalopoulos A.; “[Critical environmental law as method in the Anthropocene](#)”, [Research Methods in Environmental Law](#)” Edward Elgar (2017)

²¹² Trouwborst, A.; “[The precautionary principle in general international law: combating the Babylonian confusion](#)”, RECIEL, Volume 16, Issue 2 (2007)

²¹³ Verschuuren, J.M.; and van Gestel, R.A.J.; “[The impact of legislation: a critical analysis of ex ante evaluation](#)”, Leiden-Boston: Martinus Nijhoff Publishers (2009)

²¹⁴ Kotzé, L.J., and Kim, R.E.; “[Earth system law: the juridical dimensions of earth system governance](#)”(2019)

²¹⁵ Kotze, L.J.; “[Rethinking global Environmental Law and Governance in the Anthropocene](#)”, Journal of Energy and Natural Resources Law, Volume 32, 2, (2014)

²¹⁶ Craig, R.K and Benson, M.H.; “[Replacing Sustainability](#)”, Akron Law Review 841-880 (2013)

²¹⁷ Nobre, C., Brasseur, G.P., Shapiro, M.A., Lahsen, M., Brunet, G., Busalacchi, A.J., Hibbard, K., Seitzinger, S., Noone, K., Ometto, J.P.; “[Addressing the Complexity of the Earth System](#)”, BAMS, pp. 1389-1396 (2010)

the state-centrism and anthropocentrism²¹⁸ are largely responsible for it. Firstly, nation-states keep being the preliminary political actors in the international arena²¹⁹ and that is why environmental law considers the state “as the central source of its legitimacy and authority”. Nonetheless, non-state entities and civil society such as NGOs and companies have started to play a –residual- role²²⁰, mostly after the unfortunate Copenhagen climate conference²²¹. Although states still “construct international regimes on the basis of their interests”²²², the strict dichotomy between public/private and state/non-state in global contexts that masked the plurality of actors and practices is weakening.

On the other hand, the anthropocentrism can be seen in two ways: first in the sense of the ‘death of nature’ where humankind has exerted its influence all over the world and untouched or pristine areas are barely non-existent²²³; as well as in the strict view of focusing on persons as contrary to any other living resources and a respect for ecological limits.

Furthermore, the emphasis on human values and wellbeing leads to the pursuit of short-term socioeconomic and political benefits through the concept of ‘sustainable development’. The traditional governance and policy approach is based on this concept²²⁴, which includes the pillars of economic, social development and environmental protection, at local, national, regional and global levels. Nevertheless the paradigm is governed by a “green-washed neoliberal anthropogenic ethic”²²⁵ within a growth-oriented political economy and the nation-state autonomy. In other words, the ‘sustainable development’ concept underlines the greatest fallacy of the contemporary environmental law and governance perspective given “its disingenuousness and its complacent

²¹⁸ Kotze, L.J. and French, D.; “[The Anthropocentric Ontology of IEL and the SDGs: Towards an ecocentric rule of law in the Anthropocene](#)”, *Journal of Comparative Law* 7 (2018)

²¹⁹ Lövbrand, E. and Linner, B.O.; “Governing beyond or with the state? State conceptions in studies of non-state climate action”, in Bäckstrand, K. and Kronsell, A. (Eds.); “Rethinking the Green State: Environmental governance towards climate and sustainability transitions”, Routledge (2015)

²²⁰ Bastmeijer, K. and Verschuuren, J.; “[NGO-business collaborations and the law: sustainability, limitations of the law, and the changing relationship between companies and NGOs](#)” (2005)

²²¹ Bäckstrand, K., Kuyper, J.W., Linner, B.O., Lövbrand, E.; “[Non-state actors in global climate governance: from Copenhagen to Paris and beyond](#)”, *Environmental Politics*, Vol. 26, 4 (2017)

²²² Keohane, R.O. and Victor, D.G.; “[The Regime Complex for Climate Change](#)” Discussion Paper 2010-33, Cambridge, Mass.: Harvard Project on International Climate Agreements (2010)

²²³ Bastmeijer, K.; “Wilderness Protection in Europe. The Role of International, European and National Law” (2016)

²²⁴ Verschuuren, J. “[The growing significance of the principle of sustainable development as a legal norm](#)” in Fisher, D.; “Research Handbook on fundamental Concepts of Environmental Law”, Edward Elgar (2016)

²²⁵ Kotze, L.J.; “[A Global Environmental Constitution for the Anthropocene?](#)”, *Transnational Environmental Law*

promise of sufficient resources in a time of global ecological crisis and resource scarcity, which it promotes through deep socially entrenched rhetoric and (corporate and state) practices”²²⁶.

“Given the general bias towards tangible economic benefits over the intangible environmental concerns in today's neoliberal economies, striking a tenuous balance between the three pillars of sustainable development has not been successful in most cases; rather, sustainable development has been driven by general imperatives of growth or progress²²⁷”. Consequently, Bosselmann calls for the recognition of the sustainability²²⁸ as a fundamental principle to guide the entire legal system informing other fundamental norms and concepts. He does so with the ecological reality as central element grounded in value-based norms like ecological justice, human rights and citizenship. This novel approach of global sustainability law and governance for ecological integrity is based on the acknowledgement that humans are an integral part of the earth's community where ecological boundaries are to be respected at a planetary scale.

In general, the focus of environmental law remains decidedly narrow and sectoral and it has not “fully embraced an earth system perspective”²²⁹. However, there is some hope. While the earth system reveals features of a complex adaptive system²³⁰, IEL as a set of treaties and institutions is complex, adaptive and is a system too. It has a deep underlying coherence and a structure where processes and relationships between institutions can create an interdependent network. Consequently, environmental law is a legal system that can be self-organized but its overall performance may be reviewed with major institutional reforms towards a single, legally binding, superior norm or goal²³¹. While it is true that self-regulatory systems require a lot of law and rules, as well as resilient institutions, “the legal approaches through which Earth can be protected are multiplied as well, with much greater chances of success”²³².

²²⁶ Kotze, L.J.; “[Rethinking global Environmental Law and Governance in the Anthropocene](#)” (2014)

²²⁷ Kim, R.E. and Bosselmann, K.; “[Operationalizing Sustainable Development: Ecological Integrity as a Grundnorm of International Law](#)”, Review of European, Comparative: International Environmental Law, Volume 24, 2 (2015)

²²⁸ Bosselmann, K.; “The Principle of Sustainability: Transforming law and governance”, Routledge, London (2016)

²²⁹ Kotzé, L.J. and Kim, R.E.; “[Earth system law: the juridical dimensions of earth system governance](#)”, Earth System Governance 1 (2019)

²³⁰ Lenton, T.M. and van Oijen, M.; “[Gaia as a complex adaptive system](#)”, Philosophical Transactions of the Royal Society (2002)

²³¹ Kim, R.E. and Mackey, B.; “[International environmental law as a complex adaptive system](#)”, International Environmental Agreements: Politics, Law and Economics, Volume 14, Issue 1, pp. 5-24 (2014)

²³² Verschuuren, J.; “[Global Environmental Law](#)”, Tilburg Law Review 17, pp. 222-227 (2012)

4.3. A new approach: features of earth system law

Law is a crucial a forceful instrument that surely may be effective “at keeping humanity away from critical planetary boundaries”²³³. While it is clear that IEL must be “oriented by and based on an Earth system approach”²³⁴, what is not well-defined is the legal paradigm and mechanisms to do so. Many authors look for alternatives, innovative configurations and unconventional paradigms²³⁵ wondering about questions like: “What planetary stewardship strategies are required to maintain the earth system in a manageable stabilized earth state?”²³⁶ Although it has not been answered yet, it may be possible to build a novel legal paradigm grounded on certain traits of the earth system.

‘Earth system law’ is a new overarching legal phenomenon that focus on juridical dimensions of the Earth System Governance and seeks to comprehensively respond to the regulatory challenges presented by a changing earth system in the Anthropocene²³⁷. It is “intended to reflect legal dimensions of large-scale transformations, by searching for fresh, radical and innovative legal approaches for enabling and governing planetary transformations”²³⁸. Notwithstanding, there is not yet a definitive framework for earth system law. The purpose here is to merely highlight features that the earth system-related body of law would desirable possess by taking into account the characteristics of the earth system outlined above.

Given the characteristics derived from the Anthropocene – interdependency, alterability and complexity -, merged with the earth system-related regulatory implications described by Kotzé²³⁹ and the four core principles to earth system governance delineated by Biermann²⁴⁰, bearing in mind reasons why IEL is ineffective – fragmentation, stagnation, state-centrism and anthropocentrism-;

²³³ Chapron, G., Epstein, Y., Trouwborst, A., Lopez-Bao, J.V.; [“Bolster legal boundaries to stay within planetary boundaries”](#), Nature Ecology & Evolution 1, 86 (2017)

²³⁴ Kotzé, L.J., [“Earth system law for the Anthropocene”](#) (2019)

²³⁵ Several responses arise in academic literature to juridically respond to the Earth system unique regulatory demands, such as the ‘Lex Anthropocenae’, the proposal of a grundnorm or a constitution for the Anthropocene (French and Kotzé), an ecological integrity perspective as an emerging common denominator through the ecological sustainability principle (Bosselmann), a trusteeship and stewardship model of the global commons, the planetary boundaries concept as a minimum level of environmental protection (Kim) or a ‘Safe Operating Space Treaty’ (Magalhães) among others

²³⁶ Steffen, W., Rockström, J.; et al.; [“Trajectories of the Earth System in the Anthropocene”](#) (2018)

²³⁷ Kotzé, L.J. and Kim, R.E.; [“Earth System law: The juridical dimensions of earth system governance”](#) (2019)

²³⁸ In [Taskforce on earth system law](#), Earth System Governance project

²³⁹ Inclusivity, interdependencies and complexity in Kotzé, L.; [“Earth System Law for the Anthropocene”](#) (2019)

²⁴⁰ Credibility, stability, adaptiveness, inclusiveness in Biermann, F.; [“Earth system governance as a crosscutting theme of global change research”](#) in Global Environmental Change, Volume 17, issues 3-4 (August – October 2007)

three main features are pointed out which earth system law should embrace in order to successfully deal with Anthropocene environmental challenges. These will have to be included somehow into any instrument in order to check whether it is grounded and based on the earth system law.

4.3.1. Inclusiveness

First of all, in relation with the interdependency, a legal regulation should reflect its immeasurable connections through multilevel governance in order to reduce system stress, its risks, and vulnerabilities. A holistic analytic perspective would regress the dysfunctions of fragmentation²⁴¹. Additionally, this all-encompassing point of view should trigger the transformation of economic activity in a sense of de-growth²⁴² and generate stronger interaction to avoid ‘problem shifting’²⁴³. As Biermann asserts “earth system requires integrated modes of polycentric, reflexive and multi-scalar global law and governance alongside a systems approach”²⁴⁴. Therefore, it needs a superior norm to drive the approach or a common purpose for guiding the whole scheme as in a hierarchy.

4.3.2. Adaptability

Secondly, the alterability and rapid change of the earth system requires a normative framework able to adjust to all kind of situations, flexible, dynamic and resilient²⁴⁵. The feature is related to the precepts and conceptions of the law as well as its institutional structure. It implies resilience as the ability of a system to absorb changes yet still persist and providing a function, structure and identity in a dynamic way²⁴⁶. In that respect, it may seem difficult to reconcile the desired economic growth with the limits of natural resources as well as to modify governance institutions into social-ecological terms breaking the traditional statist configuration²⁴⁷. However law is already “a complex adaptive system that evolves with other systems”, thus “a systems-based assessment methodology” can enhance human-Earth relationship²⁴⁸.

²⁴¹ Sand, P.H. and Wiener, J.B.; “[Towards a new international law of the atmosphere](#)”, Goettingen Journ. IL 7 (2016)

²⁴² Garver, G.; “[The rule of ecological law: the legal complement to degrowth economics](#)”, Sustainability 5 (2013)

²⁴³ Nilsson, M. and Persson, A.; “[Can Earth system interactions be governed? Governance functions for linking climate change mitigation with land use, freshwater and biodiversity protection](#)”, Ecological Economics, 75 (2012)

²⁴⁴ Biermann, F. “Earth system governance: world politics in the Anthropocene” (2014)

²⁴⁵ Robinson, N.A.; “[Fundamental principles of law for the Anthropocene](#)” Environmental Policy and Law, 44 (2014)

²⁴⁶ Fischman, R.L.; “[Letting go of stability: resilience and environmental law](#)”, 94, 2 (2019)

²⁴⁷ Dryzek, J.; “[Institutions for the Anthropocene: Governance in a changing earth system](#)”, B.J.Pol.S 46, 4 (2016)

²⁴⁸ Garver, G.; “[A systems-based tool for transitioning to law for a mutually enhancing human-earth relationship](#)”, Ecological Economics, Volume 157 (March 2019)

An example of this concept is strongly related to the adaptation policies and regulations to climate change²⁴⁹. Adaptation offers a lot of opportunities²⁵⁰ and earth system law should entail protocols or guidelines allowing an adjustment to the Anthropocene when dealing with global change. For instance, this is essential regarding protected areas which lack special explicit provisions on climate change²⁵¹.

Additionally, technology matters towards the ‘environmental enhancement’²⁵². It distributes risks and costs across time, space and social groups in ways that are difficult to predict but also these ‘quick-fixes’ or technological solutions are used to solve complex social-ecological problems²⁵³. The regulation of issues related with technology such as climate geoengineering is important²⁵⁴.

On the other hand, linked with the earth system law and governance ability to adapt²⁵⁵, to include all elements and processes, one should point out the traits of certainty and coherence of the scheme. A translation of the planetary boundaries science in legal orientations and socio-economic indicators may work for the purpose of offering a firm and stringent framework²⁵⁶. Some attempts in order to build a legal framework based on planetary boundaries²⁵⁷ are made. Moreover, it is important to note that “while legal certainty is an important virtue of law, it does not as such necessarily prevent adequate flexibility in administrative decision-making concerning health, the environment or the use of natural resources”²⁵⁸. Therefore this kind of stability and safety on the new legal paradigm is fundamental to contest the unpredictability and volatility of earth system.

²⁴⁹ Ruhl, J.B.; “[General design principles for resilience and adaptive capacity in legal systems – with applications to climate change adaptation](#)”, North Carolina Law Review, 89, 5 (2011)

²⁵⁰ Verschuuren, J., “[Adaptation to Climate Change: Opportunities and Barriers](#)”, Proceedings of the International Colloquium on Global Warming, Rio de Janeiro (2007)

²⁵¹ Cliquet, A. “[International and European Law on Protected Areas and Climate Change: Need for Adaptation or Implementation?](#)” Environmental Management 54, 720–731 (2014)

²⁵² Somsen, H.; “[From Improvement Towards Enhancement: a renaissance of environmental law at the dawn of the Anthropocene](#)” (2015)

²⁵³ Galaz, V., “Global Environmental Governance, Technology and Politics: The Anthropocene Gap” (2014)

²⁵⁴ Scott, K. “[IL in the Anthropocene: Responding to the Geoengineering Challenge](#)”, Mi.JIL 34(2) (2013)

²⁵⁵ Reischl, G.; “[Designing institutions for governing planetary boundaries – Lessons from global forest governance](#)”, Ecological Economics, Volume 81, pp. 33-40 (2012)

²⁵⁶ Dao, H., Peduzzi, P., Friot, D.; “[National environmental limits and footprints based on the Planetary Boundaries framework: the case of Switzerland](#)”, Global Environmental Change, Volume 52 (September 2018)

²⁵⁷ Fernández, E. and Malwé, C.; “[The emergence of the ‘planetary boundaries’ concept in IEL: A proposal for a framework convention](#)” in RECIEL 28, pp. 48-56 (2019)

²⁵⁸ Ebbesson, J.; “[The rule of law in governance of complex socio-ecological changes](#)”, Global Env. Change, 30 (2010)

4.3.3. Ambition

On the third place, a regulatory approach needs to deal with the complexity of the earth system. As the name itself imply, this feature should not have limitations. This ambition is related to the “unmentionable gaps” of IEL²⁵⁹ or perspectives that have been largely denied or not incorporated to the traditional approach of IEL. For instance it is reflected on the challenging idea of granting rights to nature and non-human beings²⁶⁰. Nevertheless, even that far-reaching hint is an “insufficient response to the current environmental emergency”²⁶¹, because of its urgency.

In sum, the examination of earth system models needs to reconnect with the humanity and to do so they must embrace “a representation of socially differentiated agency, social-economic networks and complex co-evolutionary dynamics”²⁶². In this sense, some point out the Paris Agreement and the Sustainable Development Goals (SDGs) as examples of this ambition. However, from the earth system law’ point of view these instruments would not meet the features described above. Both tools “will fail to keep human endeavor within ecological limits necessary for the human prospect in the long term”. That is because “law system is constrained to serve insistence on growth”²⁶³ and they are not “framed by key insights such as a social-ecological systems approach, do not acknowledge trade-offs between goal ambition and feasibility and they implementation is not guided by transformational change”²⁶⁴. Neither of the recent developments of IEL detach from the main weaknesses of the domain, mainly because of their human-centrism²⁶⁵ and their tendency to encourage development that is more probably to decrease the capability of the Earth’s life systems in order to maintain human and other life²⁶⁶.

²⁵⁹ French, D. Kotzé, L.J.; “[Towards a GPE: IEL’s factual, technical and \(unmentionable\) normative gaps](#)” RECIEL

²⁶⁰ Some examples are the recognition of legal personality to the river Whanganui in New Zealand, the Law of Mother Earth from the 2009 Bolivian Constitution and a chapter about Rights of Nature in the 2008 Ecuadorian Constitution.

²⁶¹ Burdon, P.D. and Williams, C., “Rights of nature: a constructive analysis” in Fisher, D. (Ed.); “Research Handbook on Fundamental Concepts of Environmental Law, Edward Elgar, Cheltenham UK (2016)

²⁶² Donges, J.F., Winkelmann, R., Lucht, W., Cornell, S.E., Dyke, J.G., Rockstrom, J., Heitzig, J., Schellnhuber, H.J.; “[Closing the loop: Reconnecting human dynamics to Earth System science](#)”, The Anthropocene Review (2017)

²⁶³ Garver, G.; “[A systems-based tool for transitioning to law for a mutually enhancing human-earth relationship](#)”, Ecological Economics, Volume 157 (2019)

²⁶⁴ Norström, A. V., A. Dannenberg, G. McCarney, M. Milkoreit, F. Diekert, G. Engström, R. Fishman, J. Gars, E. Kyriakopoulou, V. Manoussi, K. Meng, M. Metian, M. Sanctuary, M. Schlüter, M. Schoon, L. Schultz; “[Three necessary conditions for establishing effective SDGs in the Anthropocene](#)”. Ecology and Society 19(3):8 (2014)

²⁶⁵ Cardesa-Salzmann, A., and Cocciolo, E.; “[Global Governance, Sustainability and the Earth System: Critical Reflections on the role of Global Law](#)”, Transnational Environmental Law, 8:3 (2019)

²⁶⁶ Wackernagel, M., Hanscom, L., Lin, D., “[Making the SDGs consistent with sustainability](#)” (2017)

4.4. Conclusion

Environmental law was designed as a human institution to ensure the nature protection. However it has neither solve the challenges for which it was initially configured nor is known for its effective enforcement and compliance. Furthermore, some principal flaws and reasons for which IEL is perceived as a failure are identified. These comprise its fragmentation because of a sectoral regulatory approach, its stagnation given the inability to attain profound operational restructurings and adapt to changes as well as its focus on the state actors and in human beings. The last is especially criticized as a result of the concept of sustainable development and its implications about socio-economic growth in detriment of the natural resources.

This ‘Anthropocene gap’ has to be solved with an innovative legal paradigm. Therefore, earth system-related body of law is suggested as a juridical response and a more appropriate paradigm by underlying some features that a legal instrument would be desirable to contain. The first feature is the inclusiveness in the sense of encircling each and every element that builds the earth as a system, through a polycentric and all-encompassing perspective dominated by a superior norm. Moreover, it should reflect the social and normative institutions’ adaptability or the ability to evolve and acclimatize resiliently when there is a change of considerable entity. Finally, in order to overcome and not to fall back on the business-as-usual regulatory approach known as IEL whose failures have been delineated earth system law should be ambitious. That is possible if earth system law includes new perspectives, the participation of non-state actors as well as a care for natural elements.

5. A RELATIONSHIP BETWEEN THE GPE AND EARTH SYSTEM LAW

5.1. Introduction

The GPE is purported to be an overarching framework for environmental law by encompassing its principles and proclaiming the right to a healthy environment, either as hard or soft law instrument²⁶⁷. However, the anthropogenic conditions that reshape biophysical processes of the earth system claims a different regulatory and institutional paradigm where a standstill perspective of environmental law may not be enough to confront the degradation and human damages to nature.

Given the need for a more prominent role for law, its inability to respond to the Anthropocene as well as the disconnection between law and earth system science, a new conceptual framework so-called earth system law arises at a planetary level. In order to examine whether the GPE include the features and elements of earth system law, the assessment is based following its denomination or title. Therefore, a relationship between the characteristics of the Anthropocene and earth system science, the factors that make IEL ineffective and the features of earth system law is established.

5.2. Analysis

5.2.1. “Global” → Interdependency: inclusiveness against the fragmentation

Taking into account a geographical or jurisdictional scope of the law, international law has evolved to a global or transnational standpoint. Global law is “the management of the systematization of a loosely intertwined universe of autonomous frameworks operating dynamically across borders grounded in functional differentiation among governance communities”²⁶⁸. Despite of that, global environmental law has been largely criticized by its gaps, its fragmented character and the sectoral methodology that provokes the ‘problem shifting’²⁶⁹. Even though at a macro-level environmental law still has an underlying structure through a logical organization with the maze of MEAs, without a supreme goal it is “dysfunctional at the expense of ecological integrity”²⁷⁰. Consequently, a

²⁶⁷ Parejo, T. and Lobel, N.; “[Framing the GPE: Why It’s Needed, What It Does, and How It Does It](#)” in FELR (2018)

²⁶⁸ Backer L.C., “[The structural Characteristics of Global Law for the 21st Century: Fracture, Fluidity, Permeability, and Polycentricity](#)”, Tilburg Law Review, 17 (2012)

²⁶⁹ Kim, R.E., van Hasselt, H.; “Global governance: problem shifting in the Anthropocene and limits of international law” in Morgera, E. and Kulovesi, K.; “Research Handbook on International Law and Natural Resources” (2016)

²⁷⁰ Cardesa-Salzmänn, A. and Cocciolo, E.; “[Global Governance, Sustainability and the Earth System: Critical Reflections on the Role of Global Law](#)”, Transnational Environmental Law, 8:3, pp. 437-461 (2019)

common legally binding purpose for the whole field will ensure coherence across earth's subsystems such as the protection of the integrity of earth's life-support systems²⁷¹.

To re-conceptualize IEL and governance, since an international environmental constitution²⁷² does not exist, interest on 'constitutionalism' emerged. It "examines the development, implementation and effectiveness of incorporating environmental rights, procedures, and policies into constitutions around the globe"²⁷³. Similarly to what happened after the Second World War²⁷⁴ the circumstances of the Anthropocene incite to consider the GPE as a 'momentum' to potentially become in a global environmental constitution. A "constitutionalized form of IEL" prioritizing earth system integrity and care, maybe through 'ecological integrity', could respond better to these challenges²⁷⁵. This call comes from a need to agree on an environmental *grundnorm* or common goal. As Verschuuren shows "I envision an imaginary state in which environmental care is one of its foundations, without a loss of democratic and constitutional guarantees: the environmental constitutional democracy"²⁷⁶.

Very few higher-order IEL constitutional norms are identified²⁷⁷. The no-harm principle is the only generally accepted norm of customary international law but it is absent in the literacy of the GPE draft. The precautionary, polluter-pays and the principle of sustainable development are reflected on it thus they could enhance the normative force of the environmental law principles. Nonetheless, "the Anthropocene and its associated imagery of planetary boundaries require far more drastic universal non-derogable norms", regardless of whether States have agreed on these.

Due to the failure of global environmental governance in leading for climate action, reorganization of the chaos from the multiplicity of different and often contradictory norms is necessary. Contrary, others assert that the GPE links with national constitutions indeed and it "emerges as a conclusive element of a worldwide constitutional evolution" by strengthening and guaranteeing the status of principles in domestic law as well as facilitating its global implementation through enforceable obligations – noting that it would not be possible if the GPE is "merely reduced to soft law"²⁷⁸.

²⁷¹ Kim, R.E; "[Unravelling the Maze of MEAs: Macroscopic Analysis of IEL and Governance for the Anthropocene](#)"

²⁷² Bodansky, D.; "[Is There an Intern. Environmental Constitution?](#)" Indiana Journ. Global Legal Studies, 16, 2, (2009)

²⁷³ UNEP; "[New frontiers in environmental constitutionalism](#)" (2017)

²⁷⁴ Kotzé, L.J.; p. 209 "Global Environmental Constitutionalism in the Anthropocene", Bloomsbury (2016)

²⁷⁵ Kotzé, L.J.; "[A Global Environmental Constitution for the Anthropocene?](#)" in Transnational Environ, Law (2019)

²⁷⁶ Verschuuren, J.; "The constitutional right to environmental protection" (1994) and [Thesis dissertation](#) (1993)

²⁷⁷ Kotzé, L.J and Muzangaza, W.; "[Constitutional international environmental law for the Anthropocene?](#)" RECIEL

²⁷⁸ Almirante, D.; "[The Global Pact for the environment: a general instrument to face climate change](#)", (2019)

5.2.2. “Pact”→ Alterability: adaptability against the stagnation

Humans will be able to respond to the Anthropocene “only if we adapt to the significant changes in oceans, climate, biodiversity, and other critical functions upon which society depends”. Still, humankind response “will ineluctably lead to greater government involvement in a wide range of human activities and the constant updating of laws and regulations to respond to challenges”. Legal doctrinal changes are relevant, but eventually that response “will ultimately be a political one”²⁷⁹.

That could be the reason why the GPE is “committed to the SDGs” in its preamble. These are policy objectives but “within them they contain measures that can be promoted by the adoption of laws and regulations”. The SDGs may further develop the law itself through a promotion of support between regimes and closing its gaps creating a coherent framework²⁸⁰.

The implementation of the SDGs is deeply embedded on governance institutions. It is believed that “the endorsement of a Global Pact will set the stage for making agreement on giving priority to the 2030 Agenda”²⁸¹. But nothing beyond reality: if the pact is not binding and it cannot be enforced through adjudication, the ‘defragging’ of the institutional system seems difficult²⁸².

In relation with fundamental human environmental rights some say the GPE “offers a framework for that generation of rights”, while at the same time it incorporates the environment to the previous conventions as a third pillar of the sustainable development. In theory, that will “give more consistency to the SDGs”, “making it more robust and coherent in order to guide public policies”²⁸³.

However, because of the alterability of the Anthropocene, they need to go “beyond the traditional approach to development that assumes stability and linear changes in social, ecological, and economic systems”²⁸⁴ and be flexible and resilient. Earth system integrity demands more radical change than the SDGs. The GPE should accommodate to it by changing socio-political structures instead of remaining reluctant in the creation of global environmental authority for instance²⁸⁵.

²⁷⁹ Biber, E.; “[Law in the Anthropocene Epoch](#)”, Georgetown Law Journal, vol. 106, 1 (2017)

²⁸⁰ French, D. and Kotze, L.J.; “[The Sustainable Development Goals: An existential critique](#)”, Elgar Publishing (2018)

²⁸¹ Robinson, N.A.; “[Essential Principles of International Law, the Pact and the UN 2030 Agenda](#)”, ICEL (2018)

²⁸² Young, M.; “[Global Pact for the Environment: defragging international law?](#)”, EJIL Talk (2018)

²⁸³ Parejo, T.; “[The GPE: A Framework for Consistent Realization of the SDGs](#)”, Environ, Policy and Law, 48, 5 (2018)

²⁸⁴ Norström, A. V., et al.; “[Three necessary conditions for establishing effective SDGs in the Anthropocene](#)”. Ecology and Society 19(3):8 (2014)

²⁸⁵ Kotzé, L.J.; “[IEL’s Lack of Normative Ambition: an Opportunity for the GPE?](#)” JEE&PL, 16, 3, pp. 213-236 (2019)

5.2.3. “For the environment” → Complexity: ambition against state and anthropocentrism

Even though the environment represents the regulatory object of law, IEL is characterized by being centered on the human aspects. Moreover, as a sociopolitical construction of humans, IEL also is focused in the nation-states so its development depends on the authorities’ will.

In order to deliver an ambitious outcome, a “global interdisciplinary discussion on universal principles” thorough a process open to governments and a whole range of international actors is required. It should involve scientific communities, engage NGOs, bind multinational corporations and enable access of developing countries to the negotiations. Without non-state entities and stakeholders groups’ commitment, there is no room for the GPE to become an ambitious instrument²⁸⁶. It is true that its creation process by a civil organization and legal independent experts is a novelty. Nonetheless, its final approval as a declaration or MEAs, as well as its enforcement and compliance will depend upon states because of the structure of the world order.

Additionally, both elements, i.e. the state-centrism and anthropocentrism, are the cause that the whole IEL and governance’ configuration is guided by the notion of sustainable development²⁸⁷. Whereas the GPE “provides an excellent template for sustainable development”²⁸⁸, the truth is that “ambitious environmental norms are seen to restrict the short term-focused, neoliberal, capitalist, growth-without-limits agenda”²⁸⁹.

Consequently, it is important to note that the “GPE should recognize the ‘general obligation’ and responsibility of all states to preserve, protect and perpetuate the ecological balance that is necessary to support and sustain life on this planet”. In order to do this, that collective and essential interest “must become fully explicit in the drafting and acceptance of the GPE”²⁹⁰. The GPE does mention of a care for the ecosystems in its preamble and articles 2, 12, 13, 16 and 18 but it is not operationalized and its ‘integrity’ remains an empty concept.

²⁸⁶ Barchiche, D. et al.; “[What to expect from a Global Pact for the Environment?](#)” IDDRI, Issue Brief N°01/19 (2019)

²⁸⁷ Verschuuren, J. “The growing significance of the principle of sustainable development as a legal norm” in Fisher, D.; “Research Handbook on fundamental Concepts of Environmental Law”, Edward Elgar (2016)

²⁸⁸ Kenig-Witkowska M; “[The draft Global Pact for the Environment](#)”, ClientEarth Foundation, Warsaw (2018)

²⁸⁹ Kotzé, L.J; “[IEL’s Lack of Normative Ambition: an Opportunity for the GPE?](#)” JEE&PL, 16, 3, pp. 213-236 (2019)

²⁹⁰ Boudreau, T.; “[Promoting the rule of law in the global environment: a legal precis for the March Nairobi Conference, GPE](#)” (2019)

Furthermore, a debate beyond traditional notions which the GPE does not indicate, would enshrine novel principles, rights and doctrinal developments such as the grating rights to nature, recognizing rights of environmentally displaced persons and indigenous peoples, a reference to planetary boundaries as a scientific limitation for human action²⁹¹, an international liability arrangement for environmental damage or the ecosystem integrity viewpoint.

5.3. Conclusion

While the detrimental impact of human activities on the earth system is widely acknowledged and action toward a materialization of the earth system law approach is encouraged, in general the current draft of the GPE “does not constitute a firm foundation for inaugurating or embedding the type of paradigm-shifting global juridical regime that we critically need in the Anthropocene”²⁹².

First of all, that is because the ‘Global’ word of the GPE title does not comprise the foundations of a global environmental constitutionalism headed by a supreme norm respectful with the systems of the earth. While the ‘Pact’ may declare a human right to an ecologically sound environment, it will still show the vulnerabilities and the injustice that socio-economic institutional structures entail. Although it may help to ensure the SDGs, it does not represent the type of structural changes necessary since the human component is predominant in the concept of sustainable development that leads all the governance institutions. If humankind can genetically modify crops, reintroduce extinct species or alter climate, a revision of the regulatory system is possible too.

To sum up, whereas the GPE is ‘For the environment’ the truth is that “is devoid of an ecocentric ethic of socio-ecological care, and insufficiently focused on maintaining Earth system integrity. It therefore does not represent anything dramatically different from that which already exists, and its potential as a global environmental constitution for the Anthropocene is decidedly muted”²⁹³

²⁹¹ Steffen, W., Smith, M.S.; [“Planetary boundaries, equity and global sustainability: why wealthy countries could benefit from more equity”](#), Volume 5 (2013)

²⁹² Kotzé, L.J. and Kim, R.E.; [“Earth system law: the juridical dimensions of earth system governance”](#), Earth System Governance 1 (2019) and French, D., and Kotzé, L.J.; [“Towards a Global Pact for the Environment’: International Environmental Law’s Factual, Technical and \(Unmentionable\) normative Gaps”](#), RECIEL, pp. 1-8 (2019)

²⁹³ Kotzé, L.; [“A Global Environmental Constitution for the Anthropocene?”](#), Transnational Environmental Law (2018)

6. CONCLUSION

Is the ‘Global Pact for the Environment’ suitable to ‘navigate in the Anthropocene’?

The main research question of this thesis was whether the Global Pact for the Environment (GPE) is an appropriate legal instrument towards enhancing environmental law when addressing anthropogenic challenges that arise from the earth system science. The process, objectives and main principles of the GPE are explained in the first relevant chapter. After examining the characteristics of the Anthropocene alongside the features of the consideration of the earth as a system, desirable elements for a comprehensive legal and institutional paradigm are outlined. Finally, a brief comparison between the elements of earth system law and the GPE responds to the research question. Notwithstanding, it should be noted that the topic is too broad and dense thus there are some deficiencies of environmental law as well as aspects of the earth system science or the GPE which have not been extensively addressed in this dissertation.

The GPE is a feasible, powerful and significant initiative that may address some flaws in the current paradigm of environmental law. Its consideration as a compilation of international environmental law (IEL) principles, even in the case when its binding potential is minimized to a declaration, may perhaps evolve into a relevant document such as the Stockholm and Rio Declarations or in a third convention of human rights. Furthermore, most of the GPE’s principles are already widely accepted and recognized by the international community hence there is a great deal of political engagement to the GPE.

On the other hand, the impacts of human action and our socio-economic institutions seriously jeopardize the ‘planetary boundaries’ of the natural state of the world. This is intensified by the characteristics derived from the functioning of the earth as a system in the Anthropocene, which are interdependency, alterability and complexity. Environmental law and governance institutions are designed to face environmental degradation. However, the foundations of IEL entail some deficiencies such as fragmentation, stagnation, state-centrism and anthropocentrism.

The characteristics of the earth system and the Anthropocene, alongside the deficiencies of environmental law call for a revision of the structure of IEL. ‘Earth system law’ could be a new foundation for IEL. It is a regulatory approach that tries to overcome the deficiencies related to the current IEL paradigm. Therefore, earth system law is based on the features of inclusiveness, adaptability and ambition, which are proved to be successful to face anthropogenic challenges.

Unfortunately, the GPE does not include any of the features of earth system law. It does include features such as its drafting by non-state actors, the inclusion of the right to an ecologically sound environment as a core element, the materialization of the principles of non-regression and resilience alongside its modest aim to respect the “integrity of the earth ecosystem”. Even though the GPE may merely work out as a framework for the IEL principles, in general, its structure is not detached from the business-as-usual approach of environmental law.

That is a consequence of its lack of environmental constitutional elements such as a real all-encompassing primary goal or a superior norm. Furthermore, the inability to propose institutional reforms regarding the operationalization of resilient Sustainable Development Goals (SDGs) towards the integrity of the earth systems is another flaw. Lastly, a solid focus on nature, on the earth systems or in the ‘planetary boundaries’, instead of in human beings and its socio-economic development, is absent too.

The good thing is that the GPE is still a draft thus another configuration suitable to ‘navigate the Anthropocene’ is still conceivable. Although it seems that this thesis’s earth system view may be difficult put into practice and it surely looks more like a kind of utopia, one should remind Hippocrates’ saying that “drastic times call for drastic measures”.

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