

THE POLITICAL ECOLOGY OF EARTH SYSTEM LAW: OUTLINING A LEX CAPITALOCENAE

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ABSTRACT

Earth System Law (ESL) is a novel conceptual framing that seeks to overcome the underpinnings and shortcomings of international environmental law (IEL). Therefore, ESL can be broadly defined as a response from law to the socio-ecological crisis in the Anthropocene. It is an epistemic dialogue between Earth system science and social science-based governance. Law, in this context, is the normative outcome of the engagement with the spatial and temporal complexities of the Earth system. Despite ESL's necessary effort to reimagine IEL's status quo, the inchoate literature developing its contours and aspirations neglects crucial insights from critical scholars. These insights, resulting from identifying and analyzing fundamental problems with the tenets and operation of international law, could improve the current conceptualization of ESL. Scholars from the Global South and North, who critically engage with the study of international law, are using a panoply of theoretical and methodological tools to demystify a universalist, egalitarian, and rights-based international legal order. ESL, in this context, could be deemed a critical response to the global environmental regime. However, some of its theoretical building blocks reproduce certain aspects critical international law scholars are questioning. For instance, ESL heavily relies on the Anthropocene as a metaphor to highlight humanity's role in disturbing global life-support systems. In doing so, ESL obliterates the historical and geopolitical dimensions of imperial expansionism and its present continuities in power asymmetries, thus obfuscating differentiated responsibilities for the ecological crisis. Several scholars, mainly those identifying with Third World Approaches to International Law (TWAIL), have

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extensively articulated the latter critique. However, the ESL literature does not always reflect their transformative ideas and contributions.

Furthermore, arguments from scholars that roam the field of Political Economy and the Law should be more visibly spelled out in ESL literature. This gap might lead to the concealment of the role of Racial Capitalism in the making and operation of environmental law. Against this backdrop, this article aims to answer the following question: what insights from selected critical international law perspectives can inform ESL's nascent conceptualization to avoid reproducing certain questionable assumptions? This article will answer this question by drawing on a political ecology approach. That means the focus is on power relations and political economy in the context of ecological governance. This approach will avail itself of a literature review of TWAIL, Law and Political Economy, and socio-ecology. The article is therefore structured around the development of three main critiques. Firstly, it will contest the Anthropocene as a problematic socio-historical point of departure. Secondly, it will interrogate Global Constitutionalism as the plausible vehicle for ESL's implementation. And thirdly, it will explore the relevance of interrelational ontologies to understand and include subaltern knowledge to reimagine international law. The paper reinforces the conceptualization of ESL as a transformational alternative to IEL by integrating valuable critical knowledge.

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INTRODUCTION

Earth system science is a relatively novel field of transdisciplinary inquiry “aimed at understanding the structure and functioning of the Earth as a complex, adaptive system.”¹ Its current epistemological status results from integrating concepts, methods, and insights from scientists who understood Earth’s biophysical phenomena as constantly shaping and being shaped by human systems. The Earth System is “the suite of interlinked physical, chemical, biological and human processes that cycle (transport and transform) materials and energy in complex, dynamic ways within the system.”² To fully comprehend how said phenomena affect human civilization in its entirety, Earth System science developed certain concepts and frameworks “central to the global-change discourse, including the Anthropocene, tipping elements and planetary boundaries.”³

These scientific insights into interconnectedness across planetary biophysical forces have influenced how social scientists conceive and think about global governance and its implications for environmental concerns in the Anthropocene.⁴ As a response to developing new epistemological tools to understand the social dimensions of Earth system science, the Earth System Science Partnership⁵ declared an “urgent need” to create “strategies for Earth System management.”⁶ Such a call for action was taken on board by the Earth System Governance (ESG) Project, a core project of the International Human Dimensions

¹ Will Steffen, Katherine Richardson, Johan Rockström, Hans Joachim Schellnhuber, Opha Pauline Dube, Sébastien Dutreuil, Timothy M. Lenton & Jane Lubchenco, *The Emergence and Evolution of Earth System Science*, 1 NATURE REV. EARTH & ENV'T 54 (2020).

² *Id.* at 57.

³ *Id.* at 54.

⁴ See Bruno Latour, *Anthropology at the Time of the Anthropocene: A Personal View of What Is to Be Studied*, in THE ANTHROPOLOGY OF SUSTAINABILITY 35 (Marc Brightman & Jerome Lewis eds., 2017); see also Bruno Latour, *Agency at the Time of the Anthropocene*, in 45 NEW LITERARY HIST. 1 (2014).

⁵ See Frank Biermann, Michele M. Betsill, Joyeeta Gupta, Norichika Kanie, Louis Lebel, Diana Liverman, Heike Schroeder, Bernd Siebenhüner & Ruben Zondervan, *Earth System Governance: a research framework*, in 10 INT'L ENV'T AGREEMENTS: POL., L., AND ECON. 277 (2010) (The Earth System Science Partnership is a joint initiative of four international global environmental change research programmes: DIVERSITAS, Diversitas, the International Geosphere-Biosphere Programme, the World Climate Research Programme, and the International Human Dimensions Programme on Global Environmental Change. The Partnership allows for an integrated study of the Earth System, the ways that it is changing, and the implications for global and regional sustainability.).

⁶ *Id.* at 278.

Programme on Global Environmental Change.⁷ The ESG Project set for itself the task to identify, develop, and assess those “strategies for Earth System management” under the premise that “institutions, organizations and institutional arrangements by which humans currently govern their relationship with the natural environment and global biochemical systems are not only insufficient: they are also inadequately understood.”⁸ According to one of its intellectual architects, ESG is the

sum of the formal and informal rule systems and actor-networks at all levels of human society that is set up to influence the coevolution of human and natural systems in a way that secures the sustainable development of human society—that is, a development that meets the needs of present generations without compromising the ability of future generations to meet their own needs.⁹

Hence, ESG straddles two broad fields of academic inquiry: governance and earth system analysis. Despite the difficulty of pinpointing a satisfactory definition, governance could be broadly defined as an innovative approach to regulation that goes beyond traditional hierarchical state activity, thereby encompassing “self-regulation by societal actors, private-public cooperation in solving societal problems, and new forms of multilevel policy.”¹⁰ In international legal scholarship, global governance implies a more flexible approach to state consent, pluralist multi-level sites of law-making processes and institutions, and diverse actors.¹¹ Hence, the logical consequence of bridging the legal dimension of global governance with the scientific breadth of Earth system analysis is the begetting of Earth System Law (ESL).

Indeed, a juridical dimension was a vital element of the first Science and Implementation Plan of the Earth System Governance Project in 2009, where legal debates have been a critical concern under the project’s research themes of architecture and norms.¹² Therefore, it could be said that under the wing of the ESG Project, ESL found an epistemic network that possesses the institutional capacity and the

⁷ *Id.*

⁸ Biermann et al., *supra* note 5, at 278.

⁹ Frank Biermann, ‘Earth system governance’ as a crosscutting theme of global change research, in 17 *GLOB. ENV’T CHANGE* 326, 329 (2007).

¹⁰ Biermann et al., *supra* note 5, at 279.

¹¹ *Id.*

¹² Frank Bierman, *Foreword* to *EARTH SYSTEM LAW: STANDING ON THE PRECIPICE OF THE ANTHROPOCENE* xvi (Timothy Cadman, Margot Hurlbert & Andrea C. Simonelli eds., 2022).

support structure to develop original thought and new debates about the contours and content of ESL.

Kim and Mackey were among the first to draw a set of aspirational foundations for ESL, which looks at an ahistorical, panoramic, and non-situated model of how International Environmental Law (IEL) should align itself better to the functioning of the Earth system.¹³ In their assessment, they posit that IEL, in its current state, should adapt faster to the dynamics of human impacts on Earth's life-support systems and be steered in its entirety by a high-level unified global norm so that it can become an Earth System Law.¹⁴ Some years after Kim and Mackey's publication, the ESG Project, in 2017, established the Taskforce on ESL to delve into new legal developments in and for the Anthropocene, which prompted a flurry of intellectual production on ESL.¹⁵

ESL presents a paradigmatic shift in understanding and acting upon global regulation of human behavior in socio-ecological interactions. It proposes a profound reform to the current state of International Law's assumptions and approaches to comprehending the biophysical metabolism of Earth's support systems. ESL thus criticizes IEL because of its "inability to achieve deep structural reforms," its overall dependence on the state as the "central source of its legitimacy and authority," its anthropocentrism, and its reductionist view because it does not follow an all-encompassing, integrated, and reflexive systems approach.¹⁶

Despite the necessity of reimagining a planetary regulatory landscape that aims at guaranteeing safe conditions for human and natural systems and thus thriving as a whole organism, this paper argues that ESL might have some blind spots, which, if accounted for, could strengthen its theoretical and normative potential. One of the earlier claims of ESL proponents is that IEL, in terms of heterogeneity of treaties, institutions, decision-making power, and learning ability, generates and selects norms that can be likened to natural selection in

¹³ See Rakhyun E. Kim & Brendan Mackey, *International Environmental Law as a Complex Adaptive System*, in 14 INT'L ENV'T AGREEMENTS: POL., L. AND ECON. 18 (2014).

¹⁴ *Id.* at 17–19.

¹⁵ See Timothy Cadman, *Introduction to EARTH SYSTEM LAW: STANDING ON THE PRECIPICE OF THE ANTHROPOCENE 2* (Timothy Cadman, Margot Hurlbert & Andrea C. Simonelli eds., 2022).

¹⁶ See Louis J. Kotzé & Rakhyun E. Kim, *Earth system law: The judicial dimensions of earth system governance*, EARTH SYS. GOVERNANCE, Mar. 12, 2019, at 1, 6.

biological evolution.¹⁷ This assessment would foreground some of the assumptions in later ESL scholarship, jeopardizing the soundness of subsequent ideas as they might be based on problematic premises. For instance, failing to factor in the findings and voices of critical legal scholars from different traditions obscures the vision that there is nothing “natural” nor “self-organizing” in how the discipline works. These scholars have unveiled the historical and power dynamics at play in the making and operation of international law, yielding a crucial diagnosis of how its design perpetuates a fundamental logic anchored in imperial and capitalist modes of expansion.¹⁸

This paper elaborates that the core aspiration of reimagining and transforming the status quo of IEL through the ideas and values of ESL is commendable; however, questions of power, history, and domination should be fully integrated into the ongoing construction of such a new paradigm. To this end, this paper will encompass the thoughts of international critical scholars under the analytical framework of political ecology to expand a critique on three aspects the ESL proposal could reflect upon. The first critique addresses ESL’s usage of the Anthropocene as a core metaphor that guides the project’s epistemological assumptions, engaging in an ahistorical narrative that effaces questions of power behind the global ecological crisis. The second critique touches upon ESL’s underlying suggestion that global constitutionalism might be an excellent path to implementing the normative aspirations of the Earth system’s regulation, thereby neglecting a description of how the politics of international law works. The third critique advances the argument that ESL’s universalist telos foregrounds a tension with territorially situated knowledge, especially from Global South polities, to which a materialist conception of knowledge generation might contribute resolving such tension.

In what follows, this paper will firstly explore the main characteristics of ESL; secondly, it will spell out the political ecology approach that is now defended as an adequate receptacle of critical ideas; thirdly, it will develop the three critiques previously mentioned; and finally, it will conclude with the proposal of forming a *Lex Capitalocenae* as the radical companion to ESL.

¹⁷ See Kim & Mackey, *supra* note 13, at 18.

¹⁸ See B.S. Chimni, *The Past, Present and Future of International Law: A Critical Third World Approach*, 8 MELB. J. INT’L. 499 (2007); see also Antony Anghie, *Imperialism and International Legal Theory*, in 1 THE OXFORD HANDBOOK OF THE THEORY OF INT’L L. 157 (Anne Orford & Florian Hoffman eds., 2016).

I. EARTH SYSTEM LAW: A NEW JURIDICAL PARADIGM FOR THE ANTHROPOCENE

Part I consists of a literature review of ESL's selected bibliography. It summarizes the main conceptual contributions of said body of literature and underscores the most salient elements according to the critiques that will ensue in other parts of this paper. The idea is to display the assumptions ESL scholars rely upon to develop their arguments and to appraise their theoretical thoroughness.

The first idea that ESL scholars put forward is that law plays an essential role vis-à-vis the shaping of the planet's life support functioning, thus suggesting that a reformulation of principles and canons of law in light of the Anthropocene's demands will continue to influence the ecology of the planet's future.¹⁹ The empirical basis upon which ESL scholars justify a drastic reform to environmental law stems from mounting evidence demonstrating that humanity has crossed several planetary boundaries,²⁰ which has, to a certain extent, eroded environmental law's trust as an appropriate regulatory technology.²¹ As a response, ESL indubitably believes that law should remain an instrument conducive to a better "planetary stewardship capacity of human societies,"²² implying a healthier relationship with non-human entities through systems thinking.²³ The law's underpinnings must be deconstructed and reassembled around a new purpose to obtain a different outcome.²⁴

As a juridical paradigm, ESL is established as a new epistemic framework that rearranges legal interventions for realignment with and

¹⁹ Kotzé & Kim, *supra* note 16, at 4.

²⁰ Will Steffen, Katherine Richardson, Johan Rockström, Sarah E. Cornell, Ingo Fetzer, Elena M. Bennett, Reinette Biggs, Stephen R. Carpenter, Wim de Vries, Cynthia A. de Wit, Carl Folke, Dieter Gerten, Jens Heinke, Georgina M. Mace, Linn M. Persson, Veerabhadran Ramanathan, Belinda Reyers & Sverker Sörlin, *Planetary Boundaries: Guiding Human Development on a Changing Planet*, 347 *SCI.* 736 (2015).

²¹ Louis Kotzé, Louise du Toit & Duncan French, *Friend or Foe? International Environmental Law and its Structural Complicity in the Anthropocene's Climate Injustices*, 11 *OÑATI SOCIO-LEGAL SER.* 180, 198 (2021).

²² Rakhyun E Kim, *Taming Gaia 2.0: Earth System Law in the Ruptured Anthropocene*, 9 *THE ANTHROPOCENE REV.* 411, 412 (2022).

²³ Louis J. Kotzé, Rakhyun E. Kim, Catherine Blanchard, Joshua C. Gellerse, Cameron Holley, Marie Petersmann, Harro van Asselt, Frank Biermann & Margot Hurlbert, *Earth system law: Exploring new frontiers in legal science*, *EARTH SYS. GOVERNANCE*, Dec. 28, 2021, at 1, 2.

²⁴ See Kim, *supra* note 22, at 412; Antonio Cardesa-Salzmann & Endrius Coccio, *Global Governance, Sustainability and the Earth System: Critical Reflections on the Role of Global Law*, 8 *TRANSNAT'L ENV'T L.* 437, 460 (2019).

embracing earth system complexity.²⁵ Regarding space-time positionality, ESL situates itself in the Anthropocene's geological presence, incumbent on the Earth system's complex dynamics.²⁶ Regarding its epistemological grounding, ESL is an invitation for transdisciplinary dialogue between Earth system governance and science, whereby law-making and implementation follow Earth's "interconnected and interacting components, which have the potential to transform in abrupt, nonlinear and irreversible ways."²⁷

In abstract terms, ESL calls for profound structural changes in global norms that enable navigating the Anthropocene and keep humanity from crossing more planetary boundaries.²⁸ One of the said changes is to "meaningfully facilitate the participation and influence of non-state actors in earth system governance";²⁹ "accommodate non-anthropocentric ontologies and ethical care";³⁰ "fully embrace all present and future earth system constituents, including humans and the non-human world";³¹ embrace "complexity, instability, and unpredictability, while it allows for forward-looking measures that also foresee harm instead of only addressing it in an ex post facto way";³² become an "adaptive system-oriented body of law" that respects planetary-scale tipping points and pay due consideration to the dynamic interconnections of Earth system components.³³

ESL scholars propose analytical, normative, and transformational dimensions to their initiative. Analytically, ESL suggests embracing a diversity of actors, laws, governance models, and international legal regimes.³⁴ Additionally, they indicate that law should accept the Earth system as its regulatory object, overcoming an epistemology of mastery over nature and a "linear, one-dimensional

²⁵ See Kotzé & Kim, *supra* note 16, at 3.

²⁶ Kim, *supra* note 22, at 418 (quoting Louis J. Kotzé & Rakhyun E. Kim, *Planetary Boundaries at the Intersection of Earth System Law, Science and Governance: A State-of-the-Art Review*, 30 REV. OF EUR., COMPAR. & INT'L ENV'T L. 3).

²⁷ Louise du Toit & Louis J. Kotzé, *Reimagining international environmental law for the Anthropocene: An earth system law perspective*, EARTH SYS. GOVERNANCE, Feb. 3, 2022, at 1.

²⁸ See Kotzé & Kim, *supra* note 16, at 4.

²⁹ *Id.* at 5.

³⁰ *Id.*

³¹ *Id.*

³² *Id.*

³³ *Id.* at 6.

³⁴ Louis J. Kotzé & Rakhyun E. Kim, *Exploring the Analytical, Normative and Transformative Dimensions of Earth System Law*, 50 ENV'T POL'Y & L. 457, 460 (2020).

understanding of the environment as its regulatory object.”³⁵ Normatively speaking, ESL addresses and critiques the limits of current IEL’s long-standing, entrenched principles, such as precaution, prevention, polluter pays, and sustainable development.³⁶ The transformative dimension of ESL involves infusing IEL with epistemologies of complexity surrounding Earth system thinking, so it can “trigger and steer societal transformation towards planetary integrity and justice.”³⁷

Furthermore, ESL aims to become Earth-centered, meaning that the object of law is neither nature nor humanity but the entire community of life, thus jettisoning the ecocentric and anthropocentric dualism.³⁸ This implies that human and geological timescales need to be reconciled.³⁹ Additionally, ESL proposes reframing the notions of the geographical scope of application of law beyond the confines of states, implying exploring what lies yonder, the international and the transnational. In that vein, ESL suggests adopting a “planetary law” geographical scope to acknowledge the notion of planetary boundaries beyond jurisdictions, whereby Earth’s ecosystems are safeguarded, and questions of social justice are also addressed.⁴⁰

Recent scholarship is starting to delineate potential avenues to flesh out the practical aspects of ESL theoretical contribution. Mai and Boulot, for instance, propose five agenda items that future ESL thinking should consider. Firstly, ESL should address structural challenges by “articulating relevance, probing inadequacies, and enhancing collaboration.”⁴¹ Secondly, ESL should address normative challenges by “fostering constructive dialogue and critical self-reflection.”⁴² Thirdly, ESL should address ontological challenges by “persisting in pursuing change, decolonizing and rehearsing hopeful futures.”⁴³ Fourthly, ESL should address epistemological-conceptual challenges by “stepping out of the comfort zone, taking risks, and becoming intellectually flexible.”⁴⁴

³⁵ *Id.*

³⁶ *Id.* at 462.

³⁷ *Id.* at 466.

³⁸ Kotzé & Kim, *supra* note 16, at 7; Kim, *supra* note 22, at 418.

³⁹ Kotzé & Kim, *supra* note 34, at 465.

⁴⁰ Kotzé & Kim, *supra* note 16, at 7–8.

⁴¹ Laura Mai & Emille Boulot, *Harnessing the transformative potential of Earth System Law: From theory to practice*, EARTH SYS. GOVERNANCE, Mar. 9, 2021, at 1, 6.

⁴² *Id.* at 7.

⁴³ *Id.*

⁴⁴ *Id.* at 8.

Finally, ESL should address methodological challenges by “expanding the legal research toolbox, acknowledging diversity, and collaborating across disciplines.”⁴⁵

In a similar attempt to narrow down some of ESL scholars’ overarching principles and grand proposals, Pope et al. developed a model to deepen the notion of planetary justice.⁴⁶ Their “socio-ecological justice” model encompasses three axes of justice, the “what,” the “who,” and the “how” of justice. The “what” is an open-ended taxonomy of different justice perspectives, which includes the distributive, recognitional, and representative dimensions of justice.⁴⁷ The “who” includes human and non-human entities of present and future generations, seen in a spatial, temporal, and subjective light.⁴⁸ Finally, the third axis is the “how” of justice or the socio-ecological justice model.⁴⁹ Such a model includes justice perspectives, promotes ecological integrity and dignity of life, adopts unified ecocentric ethics, and prioritizes oppressed voices and epistemologies.⁵⁰ It is a procedural proposal in which organized civil society, and formal institutions can engage in permanent dialogues to foster the implementation of justice issues.

Scholars have applied ESL in recent literature as a broad theoretical and policy framework to imagine new regulatory designs for global natural cycles. For instance, Ahlström et al. juxtaposed current governance initiatives of global hydrological processes with ESL’s ideas. They considered freshwater resources, which account for less than 3 percent of all water found on Earth, and the associated governance arrangements.⁵¹ Firstly, the authors identified five core hydrological problems and their social impacts that a comprehensive governance proposal should address. According to them, hydrological processes can be delayed, water resources can be unpredictably redistributed, different socio-ecological systems intertwine with water cycle dynamics, and

⁴⁵ *Id.* at 9.

⁴⁶ See Kamila Pope, Michelle Bonatti & Stevan Sieber, *The what, who and how of socio-ecological justice: Tailoring a new justice model for earth system law*, EARTH SYS. GOVERNANCE, Dec. 1, 2021, at 1, 2.

⁴⁷ *Id.* at 6–7.

⁴⁸ *Id.* at 7–8.

⁴⁹ *Id.* at 8–9.

⁵⁰ *Id.* at 10.

⁵¹ Hanna Ahlström et al., *An Earth System Law Perspective on Governing Social-Hydrological Systems in the Anthropocene*, EARTH SYS. GOVERNANCE, Nov. 23, 2021, at 1, 2.

water resources can have varying degrees of permanence and multi-scalar disturbances.⁵²

Similarly, some authors apply the ESL perspective to localized environmental degradation, such as dryland desertification in Mexico. Lopez Porras sheds light on how anti-desertification policies in Mexico have yet to achieve their goals due to disregarding highly relevant Earth system aspects, such as the interaction of slow and irregular desertification variables.⁵³ Against this, he proposes an ESL approach whereby policies should be designed to include adaptiveness, system regulation, and justice provision.⁵⁴ He further suggests that policies suitable to address global problems should foster collaboration and participation in local decision-making and management processes, enable economic activities without compromising the sustainability of local livelihoods, and ensure an equitable distribution of natural resources between humans and nature.⁵⁵

Another strand of the ESL literature is to evince some forms of the tenets of ESL in current practice. Gellers, in that sense, analyses rights of nature cases in Ecuador, Colombia, and India to argue that this practice and the theory of ESL support broadening the recognition of subjects “eligible for legal rights to include both natural and artefactual non-humans.”⁵⁶ For Gellers, the inquiry of expanding the boundaries of legal personhood to include artefactual non-human entities, like robots, belongs to the concern of who belongs to communities of justice in the Anthropocene.⁵⁷

These accounts evince the richness of an emerging field of inquiry, which concerns a critique of the contemporary environmental legal mosaic in tandem with sowing seeds of reform proposals. Most of the authors cited in this review discuss main ideas, problematize general principles, deconstruct ethical discourses, and sometimes situate overarching ESL precepts to specific places and subjects. What all these academic interventions have in common is not only that they stay away from traditional doctrinal analyses of the law, but they also construct

⁵² *Id.* at 3.

⁵³ Gabriel Lopez Porras, *Dryland Degradation and Expansion: Implications for Mexican Policies from the Earth System Perspective*, 51 ENV'T POL'Y & L. 197, 198 (2021).

⁵⁴ *Id.* at 199.

⁵⁵ *Id.*

⁵⁶ Joshua C. Gellers, *Earth system law and the legal status of non-humans in the Anthropocene*, EARTH SYS. GOVERNANCE. Nov. 13, 2020, at 1, 2.

⁵⁷ *Id.*

their theoretical underpinnings under the assumption that IEL is somehow responsible for the ecological hecatomb instead of something more profound that binds all legal systems, past and present. Against this presumption, the following sections will examine how critical international legal scholars identified racial capitalism as fueling the creation of simultaneous legal orders for labor and nature extraction. This core analytical factor is rarely underscored in the ESL literature, thus insulating its discussion from historical, political, economic, and decolonial perspectives, which otherwise have informed critical legal scholarship.

II. A POLITICAL ECOLOGY LENS TO EARTH SYSTEM LAW

Peruvian intellectual Anibal Quijano spent decades interrogating the dialectics of modernity.⁵⁸ In so doing, he looked at the history of Latin America after the European conquest to unearth the notion of coloniality of power, which describes how Europe strategically manufactured the concept of race to subjugate non-white people for labor exploitation and capitalist accumulation.⁵⁹ The result is the appropriation of vast portions of land into a few hands and deep transformations over the continental landscape,⁶⁰ thereby begetting thousands of mineral extraction sites and nature commodification.⁶¹ What were once territorial sources of knowledge for non-capitalist production and ecosystem equilibria slowly but steadily became raw materials sources for colonial economic prosperity.⁶² Racialized territories and nature in what is now the Global South were, in other words, fueling the advent of European industrial capitalism.⁶³

Coloniality of power is thus a concept that lends itself to understanding how the colonial ravaging of indigenous and black lives,

⁵⁸ See Anibal Quijano, *Coloniality of Power and Eurocentrism in Latin America*, 15 INT'L SOCIO. 215, 220–21 (2000).

⁵⁹ *Id.* at 216–18.

⁶⁰ Brett Clark & John Bellamy Foster, *Ecological Imperialism and the Global Metabolic Rift: Unequal Exchange and the Guano/Nitrates Trade*, 50 INT'L J. OF COMP. SOCIO. 311, 311 (2009).

⁶¹ Héctor Alimonda, *Mining in Latin America: Coloniality and Degradation*, in THE INTERNATIONAL HANDBOOK OF POLITICAL ECOLOGY 149, 150 (Raymond Bryant ed., 2015).

⁶² See Sharae Deckard, *Latin America in the World-Ecology: Origins and Crisis*, in ECOLOGICAL CRISIS AND CULTURAL REPRESENTATION IN LATIN AMERICA: ECOCRITICAL PERSPECTIVES ON ART, FILM, AND LITERATURE 3, 3 (Mark Anderson & Zélia Bora eds., 2016).

⁶³ See Farhana Sultana, *The Unbearable Heaviness of Climate Coloniality*, 99 POL. GEOGRAPHY 1, 5 (2022).

lands, and knowledge still plays a role in how Global South societies currently function.⁶⁴ However, the picture of what Quijano was describing would only be complete by seriously accounting for the relationship between power, governance structures, and ecosystems, which is what political ecology, as a theoretical lens, does.⁶⁵ Indeed, despite its progressive ecological ruin, the Global South still harbors the world's most biologically diverse species and ecosystems,⁶⁶ organic elements that constitute the livelihoods of thousands of indigenous and rural communities across the planet.⁶⁷ This socio-natural metabolism is constantly disrupted by an extractivist mode of exploitation,⁶⁸ a local precondition for global unequal ecological exchange, and the consolidation of the "Capitalocene."⁶⁹ Thus, political ecology unveils how, for example, neoliberal legal frameworks imposed in some Global South nations in the 1980s intensified existing inequality levels due to structural adjustment programs.⁷⁰ They also accelerated environmental degradation due to incentives for nature extraction.⁷¹

Against this background and in the context of the Earth systems' possible incapacity to sustain life, political ecology is helpful in critically appraising how law, as a manifestation of formal power, dictates the allocation of property rights and financial resources in specific communities.⁷² Historically marginalized and racialized populations in

⁶⁴ See Enrique Leff, *The Power-Full Distribution of Knowledge in Political Ecology: A View from the South*, in *THE ROUTLEDGE HANDBOOK OF POLITICAL ECOLOGY* 64, 72 (Tom Perreault, Gavin Bridge & James McCarthy eds., 2015).

⁶⁵ Tor A. Benjaminsen & Hanne Svarstad, *Political Ecology*, 4 *ENCYCLOPEDIA OF ECOLOGY* 391 (2019); Enrique Leff, *Encountering Political Ecology: Epistemology and Emancipation*, in *THE INTERNATIONAL HANDBOOK OF POLITICAL ECOLOGY* 44, 46 (Raymond Bryant ed., 2015).

⁶⁶ Wolfgang Kiessling et al., *Cross Chapter 1: Biodiversity Hotspots*, in *CLIMATE CHANGE 2022: IMPACTS, ADAPTATION AND VULNERABILITY* 2123, 2138 (Hans-Otto Portner et al. eds., 2022).

⁶⁷ See Claire Charters, *A Self-Determination Approach to Justifying Indigenous Peoples' Participation in International Law and Policy Making*, 17 *INT'L J. ON MINORITY & GRP. RTS.*, 215 (2010).

⁶⁸ See generally MARTÍN ARBOLEDA, *PLANETARY MINE: TERRITORIES OF EXTRACTION UNDER LATE CAPITALISM* (2020).

⁶⁹ See Jason W. Moore, *The Capitalocene, Part I: On the Nature and Origins of Our Ecological Crisis*, 44 *THE J. OF PEASANT STUDS.* 594, 606 (2017).

⁷⁰ See Isabella Radhuber, *Extractive Processes, Global Production Networks and Inequalities* (desiguALdades.net Int'l Rsch. Network on Interdependent Inequalities in Latin America, Working Paper No. 89, 2015).

⁷¹ See Daniel P. Costie, Federico Holm & Ramiro Berardo, *Hydraulic Fracturing, Coalition Activity and Shock: Assessing the Potential for Coalition-Based Collective Action in Argentina's Vaca Muerta Formation*, 5 *EXTRACTIVE INDUS. & SOC'Y* 499 (2018).

⁷² See Sundhya Pahuja, *Conserving the World's Resources?*, in *THE CAMBRIDGE COMPANION TO INTERNATIONAL LAW* 398, 398–99 (James Crawford & Martti Koskeniemi eds., 2012).

the Global South have meagerly benefitted from such material and rights distribution, thus prompting an infrastructure deficit that renders them more vulnerable to anthropogenic meteorological disasters and environmental pollution.⁷³ According to the IPCC, low-income populations in the Global South are far more likely to be at risk from climate-related impacts, especially those relying on climate-sensitive resources like forests, crops, fisheries, and aquaculture.⁷⁴ In that vein, even though several Global South countries have adopted climate change legislation that includes provisions on climate adaptation, these have not been fully integrated within a broader vision for poverty alleviation and financial redistribution,⁷⁵ thus perpetuating the material insecurity that makes these populations vulnerable to climate impacts and environmental disasters in the first place. This is even more difficult given that the Global South has contributed less than 10 percent of total greenhouse gas (GHG) emissions and less than 8 percent of global excess material use.⁷⁶

Applying political ecology to legal dimensions is an extension of using a political economy perspective to analyze the legal order. When a political economy lens is applied to legal issues, it immediately challenges dominant legal thought and scholarship paradigms, some of which have been formed by a fundamental misunderstanding that there is a dichotomy between politics and the economy.⁷⁷ This fabricated belief prevents us from addressing how the law is enmeshed in critical issues like distribution, democracy, racialized and gendered inequity, subordination, and sustainability. In fact, by acting as a powerful authorizing ground for several “neoliberal” political programs that have fueled and consolidated benefits for the few at the expense of the many, the legal discourse has contributed to solidifying a system in permanent

⁷³ Sumudu Atapattu & Carmen G. Gonzalez, *The North–South Divide in International Environmental Law: Framing the Issues*, in INTERNATIONAL ENVIRONMENTAL LAW AND THE GLOBAL SOUTH 1 (Carmen G. Gonzalez et al., eds., 2015).

⁷⁴ Emily Boyd et al., *Poverty, Livelihoods and Sustainable Development*, in CLIMATE CHANGE 2022: IMPACTS, ADAPTATION AND VULNERABILITY 1171, 1196 (Hans-Otto Portner et al. eds., 2022).

⁷⁵ Jan McDonald & Phillipa C. McCormack, *Rethinking the role of law in adapting to climate change*, 12 WIREs CLIMATE CHANGE 1, 16 (2021).

⁷⁶ Jason Hickel, *Quantifying National Responsibility for Climate Breakdown: An Equality-Based Attribution Approach for Carbon Dioxide Emissions in Excess of the Planetary Boundary*, 4 LANCET PLANETARY HEALTH, e399, e403 (2020).

⁷⁷ Jebediah Britton-Purdy et al., *Building a Law-and-Political-Economy Framework: Beyond the Twentieth-Century Synthesis*, 129 YALE L.J. 1784, 1789 (2020).

crisis.⁷⁸ In response to the tendency of law to shape the “depoliticization and naturalization of market-mediated inequalities,”⁷⁹ a critique of law and political economy focuses on questions about the dialectics of power and law. For instance, the examination could be reoriented towards the “constitutive power of law” that co-creates capabilities that mold all transactions, ‘the market power’ that legal structures enable, and the “political power” that may arise from legal rules insulating economic power from democratic accountability.⁸⁰

International law has also become a fecund site of political economy analysis. The central premise is that international law results from political decisions made unequally with unequal distributive impact while also being a tool for dismantling oppressive patterns.⁸¹ Inspired by dialectical materialism, the perspective of international law and political economy lays bare how a distinct historical configuration determines economic and societal norms and institutions, including international law.⁸² It problematizes the ostensible weakness of areas of international law, like human rights, or principles, like the precautionary principle, as they seek only to limit the destructive excess of capitalism instead of seeing international law as a whole manifestation of capitalism itself.⁸³

Building from the insights of the intersections of law and political economy, a more situated critique that brings to the fore the ecological material reality is arguably articulated by political ecology. In this sense, ESL could be further strengthened as a site of legal imagination if it explicitly engages with the power dimensions that connect the ravaging of racialized territories for capital accumulation, the legal forms that enabled those campaigns, and the spatiotemporal ecological implications. After all, reflecting on the power structures that originated and increased the disruption of life-support systems is pertinent. This relational mode of thinking centers on the incongruity of visualizing the overshoot of planetary boundaries without the material

⁷⁸ *Id.*

⁷⁹ *Id.* at 1790.

⁸⁰ *Id.* at 1820.

⁸¹ John Haskell & Akbar Rasulov, *International Law and the Turn to Political Economy*, 31 LEIDEN J. INT’L L. 243, 248 (2018).

⁸² See CHINA MIÉVILLE, BETWEEN EQUAL RIGHTS: A MARXIST THEORY OF INTERNATIONAL LAW 4-5 (2005).

⁸³ David Kennedy, *Law in Global Political Economy: Now You See It, Now You Don’t*, in LAW OF POLITICAL ECONOMY 127 (Poul F. Kjaer ed., 2020); see Ntina Tzouvala, *International Law and (the Critique of) Political Economy*, 121 S. ATL. Q. 297 (2022).

advantages of former empires, many of which persist thanks to international legal arrangements.

This is not to suggest that ESL scholars completely overlook issues of power and justice in the distribution of ecologic benefits and harms when sketching their normative stances; however, expanding on political ecologists' insights and integrating them into the realm of law, ESL could benefit in calibrating their assessments and prescriptions. ESL scholarship, for instance, could keep constructing its epistemological edifice to prioritize the needs and interests of the "marginalized and vulnerable within a paradigm of planetary stewardship," going beyond the "short-term, anthropocentric dimension to include those between the current and future generations and between humans and non-humans."⁸⁴

A. THE ANTHROPOCENE AS A HOMOGENIZER MARKER: A TWAIL PERSPECTIVE

ESL scholars defend that law is an ideal social technology to "determine and set enforceable limits on human behavior within the broader environmental governance effort."⁸⁵ Without much critical reflection, they transpose that premise to the context of the Anthropocene by suggesting that humans, as a geological force capable of modifying Earth's ecosystems, must be restrained by law so that the planet can operate within a safe space.⁸⁶

Some ESL scholars have coined and defined alternatives to the IEL's status quo. In tandem with ESL as an aspirational body of normativity, they have argued that living in the Anthropocene requires a more ambitious normative framework called *Lex Anthropocenae*, which will address systemic challenges, increase the normative power of ecological norms, and would provide the tools to imagine reforms beyond that which our present normative restrictions ordinarily permit.⁸⁷

⁸⁴ Kotzé & Kim, *supra* note 34, at 465.

⁸⁵ Rakhyun E. Kim & Louis J. Kotzé, *Planetary Boundaries at the Intersection of Earth System Law, Science and Governance: A State-of-the-Art Review*, 30 REV. EUR., COMPAR. & INT'L ENV'T L. 3, 12 (2021).

⁸⁶ *Id.*

⁸⁷ Louis J. Kotzé & Duncan French, *A Critique of the Global Pact for the Environment: A Stillborn Initiative or the Foundation for Lex Anthropocenae?*, 18 INT'L ENV'T AGREEMENTS: POL., L. & ECON. 811, 835 (2018).

A Lex Anthropocenae would aim to maintain and improve Earth system integrity.⁸⁸

Deciding to use the Anthropocene as a geopolitical and historical marker to establish a set of normative aspirations for ESL already constitutes an intervention that could determine the outcome of the transformational endeavor, not necessarily in the desired direction. The idea of the Anthropocene as the result of global human intervention in the Earth system tends to homogenize agency and history, at least if the Anthropocene is characterized as a geopolitical concept.⁸⁹ In this view, the blame for trespassing some planetary boundaries lies on all individuals as members of the “Anthropos” and all nations as social manifestations of those individuals.⁹⁰ If one abides by that premise, the problem of recognizing that some actors contributed more to and benefitted from the global ecological crisis emerges. As an analytical and normative proposal for juridical governance, ESL is arguably inadvertently adopting the premise of the Anthropocene as monolithic humanity, thereby prompting geopolitical implications and not just geological ones. Indeed, the consequences of embracing the Anthropocene as a geopolitical descriptor include redistributing burdens and benefits across global polities for Earth systems stewardship. Arguably, viewing humanity as a historical monolith that produced the Anthropocene entails that designing the specific rules for planetary stewardship will not be informed by differentiated impacts of past legal interventions. In other words, laws like the General Act of the Berlin Conference on West Africa of 1885, which regulated the European plunder of natural resources in the river Congo basin and has influenced today’s socio-ecological local disturbances,⁹¹ would not be relevant for informing future specific stewardship duties. Additionally, the infamous *terra nullius* doctrine or the doctrine of discovery—fundamental notions of international law for colonial expansion,⁹² would not be pertinent when assessing stewardship differentiation. This would raise some

⁸⁸ *Id.* at 814.

⁸⁹ See Eva Lövbrand, et al., *The Anthropocene and the geo-political imagination: Re-writing earth as political space*, EARTH SYS. GOVERNANCE, June 11, 2020, at 1.

⁹⁰ *Id.* at 3.

⁹¹ SARA LOWES & EDUARDO MONTERO, *Concessions, Violence, and Indirect Rule: Evidence from the Congo Free State*, w27893 (2020), <https://www.nber.org/papers/w27893> (last visited Oct. 11, 2022); Matthew Craven, *Between Law and History: The Berlin Conference of 1884-1885 and the Logic of Free Trade*, 3 LONDON REV. OF INT’L L. 31, 31–32 (2015).

⁹² Andrew Fitzmaurice, *The Genealogy of Terra Nullius*, 38 AUSTRALIAN HIST. STUD. 1, 2 (2007).

justice considerations because these doctrines were deployed as the normative basis to occupy indigenous lands for imperial extraction of labor and nature. This endeavor still resonates today through an unequal ecological exchange.⁹³

Neglecting the ecological consequences of specific legal interventions is an unintended outcome of using the Anthropocene as a geopolitical marker. However, if not critically assessed, building a new ethos for regulating ecological complexity could obfuscate spatiotemporal instances of exclusion and exploitation. Just as the Anthropocene is a seemingly neutrally charged notion, the concept of International Law was long seen as devoid of politics and hegemonic biases.⁹⁴ This changed when Third World international legal scholars started to shed new light on the multidimensional and intricate Third World interaction with international law through Third World Approaches to International Law (TWAIL).⁹⁵ TWAIL is a critical perspective on international law and politics that challenges and questions the preponderant,⁹⁶ historically Eurocentric explanations of the emergence of international law and its claims of universalism,⁹⁷ fairness,⁹⁸ and equity through the work of scholars from a variety of nations.⁹⁹ TWAIL scholars represent a broad spectrum of theoretical philosophies, including postcolonial, Marxist, post-structuralist, and feminist, to name just a few.¹⁰⁰ This intellectual movement's political, ethical, and philosophical dedication to examining the Third World's history, structure, and processes of international law and institutions render them cohesive.

⁹³ Karin Mickelson, *The Maps of International Law: Perceptions of Nature in the Classification of Territory*, 27 LEIDEN J. OF INT'L L. 621, 624 (2014).

⁹⁴ Martti Koskenniemi, *The Politics of International Law - 20 Years Later*, 20 EUROPEAN J. OF INT'L L., 7, 9 (2009).

⁹⁵ Luis Eslava & Sundhya Pahuja, *Between Resistance and Reform: TWAIL and the Universality of International Law*, 3 TRADE L. & DEV. 103, 104 (2011).

⁹⁶ Rémi Bachand, *Les Third World Approaches to International Law: Perspectives Pour Une Approche Subalterniste Du Droit International*, in DROIT INTERNATIONAL ET NOUVELLES APPROCHES SUR LE TIERS-MONDE: ENTRE REPETITION ET RENOUVEAU, 6 (Marc Toufavan et al. eds., 2013).

⁹⁷ Makau Mutua, *Savages, Victims, and Saviors: The Metaphor of Human Rights*, 42 UNIV. AT BUFF. SCH. OF L. 201, 234 (2001).

⁹⁸ Usha Natarajan et al., *Introduction: TWAIL - on praxis and the intellectual*, 37 THIRD WORLD QUARTERLY 1946, 1948 (2016).

⁹⁹ Mohsen al Attar, *TWAIL: A Paradox within a Paradox*, 22 INT'L CMTY. L. REV. 163 (2020).

¹⁰⁰ Juan Auz, *Situating the Inter-American Human Rights System in the Oscillation of International Law*, 2 J. OF L. & POL. ECON. 94, 96 (2021).

Analyzing ESL from a TWAIL perspective implies aiming for the apparent neutrality of a term like the Anthropocene because it is already charged with assumptions with geopolitical effects. For example, ESL scholar Rakhyun Kim borrows from philosopher Bruno Latour the term Gaia 2.0 to claim that global ecological regulation in the ruptured Anthropocene should be forward-looking, luring us to accept that there will be winners and losers in the distribution of Earth systems stewardship duties.¹⁰¹ The problem with this view is that just as mainstream international law had concealed its imperial origins,¹⁰² ESL might overlook potential imperial guises when it normalizes a term like the Anthropocene to construe legal imaginaries. If we look forward without taking a critical and restorative gaze at our past, we might keep committing the same mistakes of allowing forms of domination in Gaia 2.0. Eventually, let us take the metaphor of Gaia 2.0 to the extreme and accept the defeat of falling into the abyss of feedback loops. Humanity might need to migrate to another planet. Do we want to build a space campaign agenda with imperial blueprints? Following Mark Fisher's timeless dictum,¹⁰³ is it easier to imagine laws for the end of the world than the end of imperial capitalist law?

TWAIL can illuminate a new path by deploying two strategies to avoid an incomplete description and problematic normative prescription by ESL. The descriptive strategy is to acknowledge that ESL's usage of the Anthropocene is akin to reaffirming international law's value-neutrality and divisive universalism.¹⁰⁴ This means, in practical terms, that ESL should spell out that specific racial capitalist geographies were the ones that deployed their civilizing legal forms to legitimize the exploitation and domination of racialized people and nature,¹⁰⁵ thus accelerating global ecological degradation and thus everlastingly perturbing the biosphere.¹⁰⁶ Accompanying this description, the TWAIL-inspired normative prescription would be to rename the geopolitical marker into something that accurately depicts the root cause of the global

¹⁰¹ Kim, *supra* note 22, at 411.

¹⁰² B.S. Chimni, *Third World Approaches to International Law: A Manifesto*, 8 INT'L CMTY. L. REV. 3, 16 (2006).

¹⁰³ See MARK FISHER, CAPITALISM REALISM: IS THERE NO ALTERNATIVE?, 4 (2009).

¹⁰⁴ Chimni, *supra* note 18, at 501.

¹⁰⁵ See NTINA TZOUVALA, CAPITALISM AS CIVILISATION: A HISTORY OF INTERNATIONAL LAW (2020).

¹⁰⁶ Andreas Malm & Alf Homborg, *The Geology of Mankind? A Critique of the Anthropocene Narrative*, THE ANTHROPOCENE REV. 62, 64–65 (2014).

crisis.¹⁰⁷ If one is serious about acknowledging the significant correlation between the rise and expansion of capitalism with global ecological degradation, then the more accurate marker to define humanity's contemporary geopolitical age could be the Capitalocene.¹⁰⁸ The juridical proposal to regulate and dismantle the conditions that originated the Capitalocene could be a *Lex Capitalocenae*. This paradigm reaffirms that the trespassing of planetary boundaries is intimately related to the trespassing of racialized sovereignties for colonial capital accumulation.¹⁰⁹ A *Lex Capitalocenae* should limit the global ecological exchange in line with Earth System non-linearities, which could entail the adoption of radical healing as an approach for reparations for nature and the Global South.

Suppose one dares to imagine a new legal paradigm informed by critical views of international law's past and recurring legacies. In that case, inevitably, the Anthropocene as a geopolitical marker will at least raise an eyebrow. Probably, the reason why we struggle with giving birth to a global regulatory framework that opens hopeful Earth stewardship rules is that the old legal paradigm refuses to die. The old legal paradigm seems to abhor limiting rights and privileges for those most benefitted from racial capitalism. Still, suppose we want to steer our "Spaceship Earth" toward a safe operating space with social justice. In that case, we should design laws that curtail the incentives for capital expansion at the expense of decent and just homeostasis. At least, from a TWAIL perspective, that could be the goal of a *Lex Capitalocenae*.

B. THE LIMITS OF GLOBAL CONSTITUTIONALISM FOR EARTH SYSTEM LAW'S IMPLEMENTATION

ESL scholars tacitly suggest that some proposals to render IEL more ecological could be conducive to achieving significant legal reforms closer to their transformational aspirations. These proposals include the development of a global environmental constitution and a higher-order framework treaty that entrenches the principle of ecological

¹⁰⁷ Susan Marks, *Human Rights and Root Causes*, 74 THE MOD. L. REV. 57, 61 (2011).

¹⁰⁸ Moore, *supra* note 69, at 606; see JASON W. MOORE, CAPITALISM IN THE WEB OF LIFE: ECOLOGY AND THE ACCUMULATION OF CAPITAL (1st ed. 2015); see also DIPESH CHAKRABARTY, THE CLIMATE OF HISTORY IN A PLANETARY AGE 16 (1st ed. 2021).

¹⁰⁹ See David Harvey, *THE 'NEW' IMPERIALISM: ACCUMULATION BY DISPOSSESSION*, 40 SOCIALIST REG. 63, 74 (2004).

integrity as a *Grundnorm*.¹¹⁰ ESL scholars suggest that law institutionalizes the “planetary boundaries through the creation and enforcement of non-negotiable, and above all ambitious, legally binding environmental limits.”¹¹¹ The idea of a planetary framework of cosmopolitan legal principles that understand the Earth’s sensibilities is very similar to some perspectives on global constitutionalism.¹¹² This section unveils some possible tensions in how ESL scholars might approach the terrain of global constitutionalism without considering some critical shortcomings. Global constitutionalism, apart from the apparent critique of in-existent favorable conditions for enforcing principles, sees the entirety of the global legal order as something that resembles a constitution in the domestic sense.¹¹³ ESL, however, extrapolates the totalizing diagnosis of global constitutionalism only from the vantage point of one international legal regime, namely IEL.¹¹⁴ Another tension that arises from global constitutionalism is the legitimacy of actors in democratic decision-making, specifically in how the outcome of a norm is predicated on how powerful an actor is and how that agency is functional to the reproduction of a global capitalist order.

When ESL scholars elaborate their analytical, normative, and transformational arguments about the need to establish a new legal paradigm to respond to the challenges of the Anthropocene, they expose IEL’s shortcomings. In doing so, ESL scholarship describes such a body of law as self-referential and reductionist, unable or unwilling to grasp the complexities of an Earth system analysis, which is holistic and interconnected. Suppose that holistic thinking is reflected in the global governance realm. In that case, it is expected that all regimes of the international legal order should be in a permanent dialogue between them to avoid problem-shifting.¹¹⁵ A flawed aspect in constructing the critique

¹¹⁰ Kotzé & Kim, *supra* note 34, at 463.

¹¹¹ Kim & Kotzé, *supra* note 85, at 13.

¹¹² Anne Peters, *Global Constitutionalism: The Social Dimension*, in GLOBAL CONSTITUTIONALISM FROM EUROPEAN AND EAST ASIAN PERSPECTIVES 277 (Anne Peters et al. eds., 2018)

¹¹³ Anne Peters, *Global Constitutionalism*, in THE ENCYCLOPEDIA OF POLITICAL THOUGHT 1484, 1484 (2014).

¹¹⁴ Louis J. Kotzé, *A global environmental constitution for the Anthropocenes climate crisis*, in RESEARCH HANDBOOK ON GLOBAL CLIMATE CONSTITUTIONALISM 50 (Jordi Jaria i Manzano & Susana Borrás eds., 2019).

¹¹⁵ Rakhyun E. Kim & Harro van Asselt, *Global governance: Problem shifting in the Anthropocene and the limits of international law*, in RESEARCH HANDBOOK ON INTERNATIONAL LAW AND NATURAL RESOURCES 473, 480 (Elisa Morgera & Kati Kulovesi eds., 2016).

could be smoothed in that connection. Essentially, the basis of the argument only considers the developments of IEL, thus overlooking the nuances of interactions of different international legal regimes. ESL, in a nutshell, professes a law that unifies all phenomena on Earth, a prescription that arises from evaluating one international legal order—IEL. It is arguably the case that the diagnosis ESL develops about international law not being holistic enough could have a slightly different outcome if it considers the functioning of the international legal order as a whole. ESL critiques the silos manifestation of international law's fragmentation but says little about drawing a holistic alternative that can capture the granular aspects of regulation that any complex system requires. It seems tautological that ESL keeps referring to the necessity of adopting a holistic understanding of law based on the mechanics of Earth system science; however, to some extent, even planetary boundaries compartmentalize the main Earth system processes. This demonstrates the tendency to categorize biophysical phenomena under specific criteria to facilitate human cognition, which arguably could limit the ambitious aspiration of seeing things holistically for regulatory purposes.

Additionally, ESL proposes that non-state actors should have more room and participation opportunities to contribute to a more democratic planetary law.¹¹⁶ ESL scholars inadvertently make a moral claim on who should participate and who should not participate based on the intentions they might have. However, this neglects that some non-state actors, such as multinational corporations, are primarily responsible for today's ravaging ecological disasters.¹¹⁷ Carbon majors are allegedly responsible for a third of GHG emissions in the atmosphere.¹¹⁸ Nothing transformative could be achieved if they have a legitimate say at the table in making a global constitution from an ESL perspective. The main problem is that no coherent filter could justify why certain non-state actors can be in deliberative politics and not others. What should be the rationale for selecting some voices and discarding others? This is the risk if the so-called state-centric approach is cast off of global environmental constitutionalism.

¹¹⁶ Mai & Boulot, *supra* note 41, at 4.

¹¹⁷ Kerma Irogbe, *Global Political Economy and The Power of Multinational Corporations*, 30 J. OF THIRD WORLD STUD. 223, 243 (2013).

¹¹⁸ Julia Dehm, *Legally Constituting the Value of Nature: The Green Economy and Stranded Assets*, in CONSTITUTIONS OF VALUE: LAW, GOVERNANCE, AND POLITICAL ECOLOGY 255, 275 (Isabel Feichtner & Geoff Gordon eds., 2023).

The contradiction also arises, as ESL scholarship admits that “much of IEL’s failures also must do with lack of implementation, political will, and structurally vested neoliberal pro-growth corporate interests.”¹¹⁹ Another contradiction is that even if state-centric is not ideal, a global call for a planetary-scale reform must necessarily be driven by states.¹²⁰

For instance, for ESL scholars, UNFCCC COP26 has been deemed an example of a failure of a state-centric forum for international decision-making because it needed to prove an effective forum for the full participation of non-state actors. COP26 was a lost opportunity for more meaningful civil society participation. However, lobbyists for the fossil fuel industry were given more space. This resulted in a disappointingly unambitious pledge that will define the future of climate law and governance.¹²¹

On the one hand, authors advocate for more room for participation in decision-making as a manifestation of post-state-centrism but need to define who should exercise their right to speak. Suppose only civil society, meaning NGOs and grassroots movements with an agenda on protecting nature, should be the only ones who should participate, not fossil fuel lobbyists. In that case, they should justify, from a political, moral stance, the reasons for this normativity. This has implications for decision-making processes and potentially redefines what is democratic about curtailing certain voices based on moral claims. Defining the legitimacy and weight of the discourse of certain non-state actors is something that the ESL research agenda could expand on.

The current state of all legal regimes, operating simultaneously with diverging and converging norms, is, after all, a true mirror of entropy and complexity the Earth system expresses. How can we know that the paradigm of ESL will not become what we have now as the status quo? The system we have is indeed one that has evolved and has adapted to multiple contingencies over the course of centuries. It reflects a panoply of forces at play, constantly shaping and molding what rules are. These forces, of course, are predicated on dynamics of power that are sometimes evident in the discussions on global constitutionalism.¹²²

¹¹⁹ du Toit & Kotzé, *supra* note 27, at 2.

¹²⁰ *Id.* at 3.

¹²¹ *Id.*

¹²² See Christine Schwöbel-Patel, (*Global Constitutionalism and the Geopolitics of Knowledge*, in *THE GLOBAL SOUTH AND COMPARATIVE CONSTITUTIONAL LAW* 67, 72 (Philipp Dann et al. eds., 2020).

In that sense, one contribution to the debate on the legitimacy of voices for emancipatory and ecological purposes is to think in ways that transnational constitutionalism reflects Global South solidarity and decoloniality.¹²³ Perhaps, one decolonial pact bringing together nations and communities that the Global North's extractivism has historically exploited could reinvigorate the principles of sovereignty over resources and self-determination in a solidaristic fashion. By declaring that Global South's nature and labor force no longer serve the quincenary purpose of fueling the capitalist expansion in the North but instead fulfill the needs of the people while maintaining life-support systems, subaltern constitutionalism emerges for the *Lex Capitalocena*.

C. A MATERIALIST APPROACH TO SUBALTERN KNOWLEDGE FOR EARTH SYSTEM LAW

ESL scholars maintain that one of the paradigm shifts that distinguish it from IEL is the inclusion of provisions in treaties that fully embrace "onto-epistemologies of care," such as rights of nature,¹²⁴ only made possible by reconciling the legal system with traditional knowledge of communities that live in deep and long connection with their environment.¹²⁵ Indeed, the literature on the emergence and inclusion of legal and constitutional provisions concerning rights of nature, namely in Ecuador and Bolivia, claims that the knowledge of subaltern polities like indigenous peoples is considered the primary theoretical source for norm crafting.¹²⁶ When ESL proposes to overcome the putatively Euro-centric perspective of instrumental care for the environment and to embrace a type of knowledge associated with holistic care that falls outside the status quo, it fails to recognize and acknowledge the agency behind that knowledge.

¹²³ Jason Hickel, *The Anti-Colonial Politics of Degrowth*, POL. GEOGRAPHY, Apr. 28, 2021, at 102404.

¹²⁴ du Toit & Kotzé, *supra* note 27, at 6.

¹²⁵ Pope et al., *supra* note 46, at 4.

¹²⁶ Maria Akchurin, *Constructing the Rights of Nature: Constitutional Reform, Mobilization, and Environmental Protection in Ecuador*, 40 L. & SOC. INQUIRY 937, 940 (2015); see also Elaine C. Hsiao, *Whanganui River Agreement: Indigenous Rights and Rights of Nature*, 42 ENV'T POL'Y & L. 371, 374 (2012); Craig M. Kauffman & Pamela L. Martin, *Can Rights of Nature make Development More Sustainable? Why some Ecuadorian lawsuits Succeed and Others Fail*, 92 WORLD DEV. 130, 131 (2017).

Materialist ecology is a framework for understanding subaltern knowledge.¹²⁷ It suggests that our cognitive abilities are not simply a function of our minds but are also co-constitutive of the material conditions of the natural world and socio-economic relations.¹²⁸ This framework can help us to understand how knowledge is produced and how subaltern groups use it to challenge dominant power structures.¹²⁹ Materialist ecology suggests that knowledge is not static or timeless.¹³⁰ It is dynamic and responsive to the climate, the territory, and the availability of resources.¹³¹ Ecological knowledge that subaltern groups produce—particularly in resource-rich Global South countries—is not a spontaneous metaphysical phenomenon but the result of complex interrelational events that permeate at a multi-scalar level.¹³² In other words, for analytical and normative purposes, it is arguably relevant for ESL to situate the non-capitalist ways of interacting with the natural world these groups engage within a historical process of global extractivist capitalism.¹³³ Historically, the law has enabled and perpetuated property regimes that legitimize the appropriation of resource-rich territories for extractive purposes. These property regimes were created in postcolonial times and then sophisticated in the context of neoliberalism, thereby revealing power asymmetries in how the law is made and the knowledge of the world it deliberately constricts. Those communities in exploited territories have had limited prospects to infuse law-making processes with their epistemologies because that would compromise the indispensable stipulation for expedited nature exploitation. After all, contractual obligations between states and investors, whose knowledge of the teleology of nature is determined by the logic of the capitalist mode of production, had to be met to secure

¹²⁷ See Juanita Sundberg, *Ethics, Entanglement and Political Ecology*, in *THE ROUTLEDGE HANDBOOK OF POLITICAL ECOLOGY* 117 (Tom Perreault et al. eds., 2015).

¹²⁸ Richard York & Philip Mancus, *Critical Human Ecology: Historical Materialism and Natural Laws*, 27 *SOCIO. THEORY* 122, 130 (2009).

¹²⁹ Jerry Lee Rosiek, Jimmy Snyder & Scott L. Pratt, *The New Materialisms and Indigenous Theories of Non-Human Agency: Making the Case for Respectful Anti-Colonial Engagement*, 26 *QUALITATIVE INQUIRY* 331, 337–338 (2020).

¹³⁰ KUAN-HSING CHEN, *ASIA AS METHOD: TOWARD DEIMPERIALIZATION* 100–107 (Duke Univ. Press 2010).

¹³¹ JOHN BELLAMY FOSTER, *MARX'S ECOLOGY: MATERIALISM AND NATURE* 158–60 (Monthly Rev. Press 2000).

¹³² DONALD S. MOORE, *SUFFERING FOR TERRITORY: RACE, PLACE, AND POWER IN ZIMBABWE* 23–24 (Duke Univ. Press 2005).

¹³³ See Verónica Gago & Sandro Mezzadra, *A Critique of the Extractive Operation of Capital: Toward an Expanded Concept of Extractivism*, 29 *RETHINKING MARXISM* 574, 576 (2017).

their worth in the global capitalist project.¹³⁴ This multi-scalar interaction between global extractive capital, national laws that foment the extraction of natural resources, and local impacts shape how subaltern polities affected by these intertwined governance structures develop their knowledge and practices vis-à-vis ecology. For instance, some subaltern groups, such as indigenous communities in the Amazon, after years of resisting the expansion of extractive frontiers and developing a concomitant practice of territorial defense, are shifting to practices of small-scale extractivism precisely because of the abandonment of well-fare state policies.¹³⁵ The adoption of neoliberal policies explains such abandonment, a process that local elites reproduce to both attract foreign investment and accumulate capital at the expense of a logic of redistribution and economic equality.

When the material conditions of a territory shift, even ancestral practices of care in local communities also tend to follow, making it challenging to preserve ontologies aligned with a vision of stewardship for the Capitalocene. So far, ESL has advanced some of its ideas by relying on a reified abstraction of nebulous indigenous care practices without adequately engaging with concrete ethnographies that can also demonstrate how global capitalism erodes them and their legal frameworks. Consequently, ESL might be unable to formulate applicable prescriptions because they would not be anchored to reality, and its analytical and transformational dimensions may result in misconceptions. ESL should therefore be rigorous in its efforts to zoom in on the contemporary knowledge production of subaltern polities, which in many cases rests upon structures of precariousness and dispossession. This knowledge and practices are not the idyllic tropes one imagines when thinking about indigenous knowledge but the adaptation to a global system of exploitation. Sites of epistemic resistance abound in the Global South. ESL should pay attention to the reasons behind these epistemic reactions and the locations of dialectical struggles when it frames its diagnosis. These sites represent the relentless march of the global capitalist machinery onto new spaces for value reaping. This venture inevitably leads to the imposition of an unconsented identity on their inhabitants, an identity based on continuous extractivist resistance.

¹³⁴ Pope et al., *supra* note 46, at 3.

¹³⁵ See Bryan Garcés et al., *Fiebre, madera de balsa y pandemia en territorio achuar*, EL PAÍS (Feb. 12, 2021), <https://elpais.com/planeta-futuro/2021-02-12/fiebre-madera-de-balsa-y-pandemia-en-territorio-achuar.html> [<https://perma.cc/ASY4-KFDQ>].

Hence, idealized narratives of indigenous peoples' absolute ecological protection and its associated knowledge should be overcome in favor of understanding these communities' strategies to cope with an oppressive global reality.¹³⁶

III. CONCLUSIONS: OUTLINING A *LEX CAPITALOCENAE*

The fundamental premise of ESL is that law should acclimate to Earth systems' complex dynamics if it wants to transform global normative frameworks to keep humans and non-humans in a safe operating space. However, under a political ecology lens, international law should merely decouple from its capitalist and imperial modes of regulation if it wants to achieve the goal of protecting Earth's life support systems. After all, it would not be very fruitful for the law to align itself to an erratic set of protean ontologies as mirrored by the behavior of non-linear feedback loops found in Earth systems if it cannot aim at controlling and limiting the power of those who have historically produced and perpetuated the causes for Earth's biosphere ruin.

The levels of ambition for the law's transformation that ESL portends are well-intentioned and necessary; however, maybe the aspiration could be better used if it is placed on tackling the root causes of the material ecological deterioration. The conceptual framework this paper advances to capture the law needed for the Capitalocene is *Lex Capitalocenae*, which outlines some proposals for the discussions on ESL. One of the proposals is to take the relationship between international law and racial capitalism seriously as the baseline for legal imagination in conversations about ESL. This means the literature on TWAIL, and political ecology could dialogue more with ESL. Another suggestion is to decolonize global constitutionalism in a way that critiques the history of universal norms but also envisages Global South solidaristic approaches to eradicate unequal ecological exchange. Finally, this paper defended the position that it is time for ESL to explore in-depth indigenous and local communities' contributions to legal paradigm-shifting. Such endeavor, however, should avoid romanticization, essentialism, and condescension and instead consider how subaltern knowledge and ontologies constantly interact with a

¹³⁶ Joe McCarter et al., *The Challenges of Maintaining Indigenous Ecological Knowledge*, 19 *ECOLOGY & SOC'Y* 39 (2014); John Briggs, *The use of indigenous knowledge in development: problems and challenges*, 5 *PROGRESS IN DEV. STUD.* 99 (2005).

global extractivist dynamic. These insights could influence other vital aspects of emancipation, like redefining the concept of property in a world of constant socio-ecological metabolism. Suppose the ESL agenda considers these fundamental insights. In that scenario, its analytic and normative dimensions could lend themselves to a radical exercise of daring to imagine a healthier nature-society relationship that goes beyond post-anthropocentric moral views of the world.