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Environmental Governance in Indonesia

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Foreword: Finding Environmental Governance in Indonesia

Indonesia faces a tremendous challenge in managing its environment, especially in terms of balancing its development and sustainability agenda. In the contemporary development approaches, it is commonly found in developing countries that rely on intense pressures on land and natural resources, where increasing per-capita income (PCI) is compensated by the depletion of natural resources and environmental degradation. Following this approach, after achieving a certain level of human welfare, a turning point will occur whereby the levels of welfare will encourage more discussion, interests, and policies implemented by governing actors and sectors toward sustainability. Environmental degradation thus decreases along with increasing PCI (Nurrochmat et al., 2022).[1] To realize this scenario, however, good governance is needed.

Good governance is not a linear sum but a result of clean, democratic, and effective governance (Nurrochmat et al., 2016).[2] In addition to clean and democratic governance, effective governance ensures timely and strategic efforts to reverse negative environmental trends and anticipate irreversible damages and impacts. Indonesia has been actively participating in the global environmental governance arena, strengthening its position and commitment, and sharing its contributions to tackling environmental problems. The current governance systems, including agencies and institutions, policy instruments, actions, and implementation, have been in place to deal with environmental issues in the country. The Ministry of Environment and Forestry of the Republic of Indonesia has been on the frontline leading the environmental governance effort at the national level. However, the governance system in Indonesia is changing toward a more decentralized system which poses both challenges and opportunities at the same time.

[1] Nurrochmat, D.R., Sahide, M.A.K and Fisher, M.R. (2022). Making Sustainable Forest Development Work: Formulating an Idea for a More Appropriate Green Policy Paradigm. *J. Frontiers in Environmental Science*. April, 25th, 2022. https://doi.org/10.3389/fenvs.2022.783718

[2] Nurrochmat, D.R., Darusman, D.R., and Ekayani, M. (2016). *Kebijakan Pembangunan Kehutanan dan Lingkungan: Teori dan Implementasi* (Forest and Environment Development Policy: Theory and Implementation). IPB Press: Bogor. ISBN: 978-979-493-898-0.

Furthermore, contentious politics play at the core of environmental governance problems in Indonesia. The recent adoption of the omnibus bill perfectly illustrates this dilemma. Another important normative issue worth discussing concerning environmental governance in Indonesia is equity and justice. How can Indonesia provide and protect its diverse citizen and environment, especially the marginalized ones, including the poor, women, and the indigenous people, while continuing its agenda to develop its economy, expand its cities and industries, and boost innovation and sustainability?

This book presents the state-of-the-art environmental governance research and practices in Indonesia. It is a collaborative effort between Indonesian authors and international communities concerned about environmental governance issues in Indonesia. This book discusses the *pluriverse* of the Anthropocene toward an ontological politics of environmental governance in Indonesia and an idea of increasing prominence in the Anthropocene discourses. The discourse draws from the literature on the *pluriverse* and studies of indigenous worlds that have appeared in the past decade, highlighting, in particular, the ethical motivation that underpins calls to recognize different kinds of worlds. It considers the implications of the *pluriverse* in Indonesia, particularly concerning "*adat* revivalism" and Corporate Social Responsibility (CSR) practices.

This book's initial investigation of Indonesia's earth system governance (ESG) notes a paradigm that warrants the broader context of the Anthropocene and human-induced transformations of the entire earth system. The position of climate actions amidst the COVID-19 pandemic from a crisis management governance perspective is also discussed. Addressing climate change cannot be separated from economic and political issues, leading to an emergence of global discourses about the appropriate means for a sustainable transformation. Promoting a circular economy would accelerate the government's commitment to low-carbon development in potential opportunities. Moreover, optimizing blended finance to mobilize public and philanthropic funds can support green movements, aligning with the proliferation of green financial markets.

Evaluating the role of local resource governance in supporting local innovations and strategies for adaptation is crucial, for example, the local governance characteristics and interactions influencing climate change adaptation in an archipelagic nation. Many cities in Indonesia are vulnerable to disasters caused by climate change, mainly prolonged dry seasons, strong winds, and increasing greenhouse gas emissions. These disasters will significantly affect all aspects of life, such as ecosystems, properties, and infrastructures. The vulnerability of communities will also continue to be worsened by increasing urbanization. This will create additional risks for many people. The climate risk and sustainable climate mitigation strategy must be managed and evaluated simultaneously. Furthermore, it is also vital to discuss the role of civil society in shaping urban environmental governance. The revival of the civil society movement was triggered by the fall of communism in the east-bloc countries, the so-called third-wave democracy in many developing countries, and the notion of reinventing the government's role in the west. It demonstrated that civil society movements are not a single homogenous entity. The dissemination of

power among governmental structures was not merely a technical matter aiming to provide a better service but also a notion of political power contestation. The dynamic relationships within civil society organizations, the multilevel governmental institutions, and the various stakeholders in the private sector have led to a mode of governance that cannot be designed to achieve a common goal.

Another important theme is water governance. Water governance in Indonesia is greatly challenged by a misalignment of environmental sustainability and social and economic development objectives. Addressing sectoral water governance along institutional, structural, and procedural dimensions is recommended while aiming at environmental sustainability and socioeconomic development (see Agrawal et al., 2022).[3] Solar photovoltaic pumps need strong support to compete with diesel and electrical water utility pumps. Besides water, waste management is also a vital issue. The transformative solutions in the global south must be implemented despite the existing major limitations including lack of awareness, insufficient infrastructure, and lack of government engagement and capacities. Empirical research is needed to understand better the effectiveness of participation in efforts addressing waste and environmental pollution in lands and waters. Participatory schemes should be combined, for example, with suitable structures and balanced engagement of all relevant actors. The mitigation of the impacts of hydrometeorological hazards has improved transboundary river management. The findings suggest that the ecosystem's recovery supports the redevelopment of the livelihoods.

Sustainable oil palm is one of Indonesia's most important issues in environmental governance. It is necessary to understand indirect deforestation, local plantation practices, and their role in the surrounding community to implement sustainable environmental governance. Apart from that, developing second- or third-generation biofuels can also be an alternative to help the government reduce the rate of deforestation. It can help solve the unintended consequence of policies to improve environmental conditions, such as the Biofuel Program. The Indonesian Sustainable Palm Oil (ISPO) is a co-produced knowledge governing Indonesian palm oil for sustainability. The sustainability standard is not only developed for palm oil but also other products, including the energy sector. Renewable energy development is an essential issue in good environmental governance. Building a sustainable photovoltaic (PV) innovation system in Indonesia through the Perspective of Network Governance is one of Indonesia's main renewable energy sources to achieve the national electrification ratio's target. The centralized PV generator (PLTS) and dispersed PV generator (SHS) projects faced unresolved classical problems, impacting unsustaining PV projects in Indonesia. A regional innovation system (RIS) and sectoral innovation system (SIS) as the Indonesian comprehensive policy strategy are necessary to sustain national PV projects. Network Governance (NG) perspective is a lens to capture how actors of academician, business, government, and community (ABGC) interact and collaborate mutually.

[3] Agrawal, A., Brandhorst, S., Jain, M., Chuan, L., Pradhan, N., and Solomon, D. (2022). From environmental governance to governance for sustainability. *One Earth,* 2022, 5(6), pp. 615–621. https://doi.org/10.1016/j.oneear.2022.05.014

The local community plays an important role in peatland and fire management in three key areas: creating a resilient landscape, developing adaptive fire communities, and implementing a fire management strategy. The lack of affordable no-burning technology for land clearing at the broader community level and the lack of a reward and punishment system have hampered efforts to reduce fires. In addition to the participation of the local community and other stakeholders, leadership is vital in successfully implementing sustainable development. In the forestry sector, Indonesia's Forest Management Units (FMUs) were formed to lead the forest management at a site level, assist the central government as a facilitating institution, and provide a window into understanding ongoing forestry changes. Nevertheless, unfolding policy changes indicate that nongovernment actors are given increased access to permit-based forest use, thus potentially replacing FMUs as key actors at the site level. Although forest use is increasingly entrusted to nongovernment actors, the governance remains hierarchical. The central government is the dominant actor enacting regulatory mechanisms guiding actor interactions and participation. Finally, a conceptual design of sustainable governance in whole sectors has to address the concerns of urban diseconomies of scale, such as traffic congestion, social segregation, conflicts, or the digital divide.

It is the first edited book that attempts to compile diverse research and perspectives on environmental governance issues in Indonesia. Some of the abovementioned perspectives will be discussed, among other important topics. We hope this book can be useful to trigger more collaborations and efforts to bridge sciences, practices, and policies in environmental governance in general and Indonesia in particular.

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Contents

Chapter 1
Introduction

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Abstract Indonesia is one of the countries with the fastest-growing economies in Asia and one of the most biologically diverse countries in the world. With ecosystems ranging from terrestrial to marine and teemed with unique life forms, Indonesia is rich in natural resources. Unfortunately, Indonesia also suffers from overexploitation and environmental threats exacerbated by climate and human pressures. Along with the growing global ambitions for achieving sustainable development and increasing its capacity to adapt to climate change and extreme events, Indonesia is also increasing its commitments to balance development while safeguarding environmental and social sustainability. However, challenges remain, especially on how to effectively govern the responses to environmental issues. Against this background, this book will present state-of-the-art environmental governance research and practices in Indonesia. It offers a wide scope, covering different themes and sectors (e.g., climate change, disaster risk, forestry, mining, etc.), diverse physical and societal landscapes (e.g., urban, rural, deltas, coastal areas, etc.), and multiscalar perspectives (from national to local level). This book has the ambition to incorporate more knowledge to indicate research gaps and future directions for

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environmental governance research. Our intention is also to reflect a vision to make the national and global environmental governance research agenda to be more diverse, inclusive, interdisciplinary, and transdisciplinary. We hope that this book will be useful for researchers, students, practitioners, and policymakers who are interested in the field of environmental governance, especially in Indonesia as a megadiversity country that encompasses the world's largest archipelago.

Keywords Environmental · Earth · System · Governance · Indonesia

1.1 Environmental Governance in Indonesia

As in many parts of the world, degradation of the environment is a wicked problem for Indonesia. Indonesia is one of the fastest-growing economies in the world and is experiencing an ongoing dilemma in balancing development and the conservation of its environment. Indonesian citizens are dependent on natural resources that were once abundant but continuously degraded due to mostly unsustainable management and ineffective governance. The 2022 World Economic Forum in its latest global risk report (2022) has stated environmental risk as the top three most severe environmental risks: climate action failure, extreme weather, and biodiversity loss. These, too, are the factual major environmental risks in Indonesia.

Environmental issues in Indonesia range from deforestation, forest degradation, unsustainable agriculture, and unsustainable energy sources, to pollution, emission, mining, and climate change. The increasing intensity and frequency of disasters are also alarming, including flooding, erosion, drought, and wildfires. These disasters are both the cause and effects of environmental degradation. These issues urged Indonesia to better govern its environment and act swiftly to avoid heavier consequences to humans and the ecosystem.

Among the prominent threats in Indonesia is the destruction of carbon storage and biodiversity loss. Indonesia's natural ecosystems such as the unique peat swamps forests on Sumatra and Kalimantan islands store huge amounts of carbon that is threatened by agricultural land conversion (including palm oil) and resulting forest fires. At the same time, biodiversity is lost through climate change, habitat change, invasive alien species, overexploitation, pollution, and poverty as key drivers (ACB, 2010), not to mention capitalism greed.

Following the political reformation era in 1998, Indonesia is struggling to adjust its position from a centralized, power-based, and market-based paradigm (Nguitragool, 2012), to decentralized governance that values autonomy and self-expression at present. Despite the tug of war and resulting pendulum-like power balance between centralized and decentralized movements, the nation is moving toward the goal to achieve sustainable development (see Li & de Oliveira, 2021; Morita et al., 2020; Kurniawan & Managi, 2018). Participation, legitimacy, and accountability became the accepted norms, especially in the race to achieve good status in environmental governance (see Panjaitan et al., 2019; Handayani & Rachmi, 2013).

The ambition to achieve good environmental governance, however, is challenged by the complex social and natural systems and their interactions. Indonesia, as a large archipelagic country, is vastly diverse both in terms of geographical features and sociocultural systems. Indonesia consists of more than 17,500 islands with over 81,000 kilometers (km) of coastline with approximately 273 million population from more than 500 tribes (Purbasari & Sumadji, 2017). Each group has its own culture and beliefs, which includes ways to interact with and manage its environment. The system is also truly dynamic, and environmental problems are transboundary. These features posed a challenge in governing the commons (Ostrom, 1990), especially in terms of achieving inclusive governance with an equal share of resources and benefits (Holzhacker et al., 2016; Triyanti et al., 2017).

The dominant instrument of governing environmental issues in Indonesia is dispositive through institutional and administrative apparatus (Dwiartama, 2018). As a newly democratized country, this approach seems to be logical, which is still preserving the power of the national government to manage the environment. The newly adopted Omnibus law is living proof of this statement. This law has merged different national regulations, including the law 32/2009 in environmental protection and management and the central government gained ultimate power over most of the environmental aspects, which turned out to be beneficial for the extractive companies. An example is an implementing regulation for an environmental impact assessment that weakens the involvement of local authorities and communities, environmental activists, and experts in its process. Despite the power of national regulations to rule the overall environmental governance directive, customary laws are operational on the ground. The uptake of these customary laws into national and subnational law, however, needs significant improvement, particularly the involvement of local and indigenous people in policymaking (Rola & Coxhead, 2005; Syarif, 2010; Bettinger, 2015).

1.2 Dealing with Systemic and Future Challenges: Way Forward

It is clear that the environmental governance in Indonesia needs reforming. To adapt to ever-changing environmental challenges, there is a need to reconceptualize human–nature interactions and ways of managing and governing such complex, dynamic, diverse, and inter-scale problems. Politics and power dynamics are important to explore as it defines the overall governance profile, starting from inherited governance modes (top-down, hybrid, bottom-up governance), problem framing, actors and interactions and actions through regulatory and financial instruments, the consideration of norms and values including social justice, human rights, legitimacy and accountability, and how it all manifested in the implementation on the ground. The question regarding how knowledge is governed and helps inform the decision-making process and efforts to increase human and governance capacity become increasingly relevant.

A major environmental challenge ahead for Indonesia is to meet the Paris Agreement (UNFCCC, 2015) and to ensure that its 1.5-degree pathways can be successful. Indonesia has a strong commitment to limiting global warming to 1.5-degree to meet the Paris Agreement. It is shown by the development of a long-term strategy to potentially achieve net zero in 2060 (Indonesia LTS-LCCR 2050, 2021). However, there is still an ambition gap to fill, especially in order to achieve the national target. Even with the current climate policy in place, Indonesia still needs to decline its greenhouse gas (GHG) emissions immediately to reach 30–48% reductions by 2030 (Climate Action Tracker, 2019). The success of the Paris Agreement among other inter-related global commitments, including reducing disaster risk through the Sendai Framework for Disaster Risk Reduction (UNISDR, 2005), will be crucial in achieving the 2030 Agenda for Sustainable Development through Sustainable Development Goals (SDGs) (UN, 2015).

Against these backgrounds, a new way of thinking is needed, both regarding the development of scientific concepts on environmental governance that fits with the unique context of Indonesia and regular updating of the inventory of good practices in governing the environment. These include how to increase the governability of the emerging environmental issues for sustainability and transformation through innovation, such as energy transition, nature-based solutions, and agricultural and social innovation, among others. Considering that environmental governance is shaped by a diversity of contexts, worldviews, agencies, instruments, and actions, the ideal process to gather usable knowledge is through interdisciplinary and transdisciplinary knowledge. The role of private sectors in environmental governance in Indonesia should also be explored further, especially in increasing their environmental, social, and governance (ESG), focusing on measurable outcomes such as sustainability reporting. In this book, over 90 authors have joined forces to share their research and perspectives. This edited book is presented as our first attempt to compile existing knowledge on environmental governance in Indonesia, unfold the complex and systemic nature of environmental problems, and to trigger more debate and collaboration between different scientific disciplines and societal stakeholders.

1.3 Structure of This Book

This book is divided into six parts: (1) Emerging concepts and perspectives; (2) Marine, coastal, and wetland; (3) Forest; (4) Urban; (5) Climate; and (6) Social and technological intervention.

1.3.1 Part I: Emerging Concepts and Perspectives

Mahaswa and Kim discuss the idea of the Anthropocene and the pluriverse as an opportunity to give serious consideration to the ontological thesis that "social" relations are constituted by "more-than-human" beings. They suggest that an "ontological politics" toward the recognition and preservation of many kinds of worlds can

be understood in Indonesia as a struggle to deepen Bhinneka Tunggal Ika (Unity in Diversity), which is the modern Indonesian state that has long professed to be one of its foundational principles. This chapter is followed by **Nugraha et al.** discussing the emerging earth system governance (ESG) and the state-of-the-art how the notion interacts in and with Indonesian academia. The chapter elaborates on the potential of the ESG framework to inform the corpus theory of sustainable futures in the Indonesian context. The third chapter by **Permana et al.** discusses the idea of post-politicization of the environment. It starts with an exploration of the current intensifying threat of ecological disaster due to excessive natural resource exploitation and environmental damage in Indonesia and the importance of the existing tools to evaluate local government performance on natural resource and environmental management. This chapter highlights the critics of the technocratic mode character as a disguise to facilitate politico-business linkages and oligarchical interests that damage the environment.

1.3.2 Part II: Marine, Coastal, and Wetland

Saputro and Kurian investigate the implications of climate change impacts on the lives of women and men in a small and vulnerable coastal community on Pramuka Island, a part of the group of Seribu Islands, Jakarta, Indonesia. This study examines how changes in women's and men's employment, income, and time management reflect how environmental changes, including climate change, shape the everyday lived experiences of vulnerable local communities of small islands. **Adhuri et al.** highlight the issue of land and coastal grabbing as a global concern. They argue that while most studies focus on grabbing and their socioenvironmental impacts, their chapter demonstrates the process of "re-grabbing" where the local community, supported by NGOs and other agencies, took back control over the coastal mangrove forest taken and converted by a private company for palm oil plantation. This chapter further explains the process and strategies employed by coastal communities in Langkat, North Sumatra in resisting the palm oil plantation's presence that had impacted their fishing and coastal livelihoods seriously. **Yuniarti et al.** analyze current management performance to achieve a sustainable lake ecosystem-based management. The chapter focuses on the goals of reduced cage aquaculture and improved water quality in the lake, despite the presence of formal regulations for reaching these goals. It provides lessons learned through interdisciplinary research (environmental–social science, ecology, and ecological economics), evaluating cage aquaculture management scenarios to facilitate sustainable cage aquaculture management in Lake Maninjau, Indonesia.

1.3.3 Part III: Land and Forest

Nurhidayah et al. explicate the role and challenges of community-based fire management and peatland restoration based on the Community Fire Brigades or Masyarakat Peduli Api (MPA) through case studies of six villages situated in two fire-prone provinces in Riau and Central Kalimantan. A cohesive fire management strategy model has been employed as a lens to understand the challenges and effectiveness of a community-based fire management strategy in Indonesia. The result has shown diverse challenges that reduce their capacity to prevent and control forest and land fires and proposed a suggestion for the Indonesian government to prioritize funding support for MPAs to ensure the effective operationalization of community-based fire control and prevention in fire-prone provinces. Additionally, they highlight the importance of strengthening the role of the private sector and NGOs to step in to address the gap in support for community-based fire management and peatland restoration. **Ramli Ramadhan et al.** apply the governance approach to understanding changes in the forestry sector using four modes of governance, including hierarchical governance, closed co-governance, open co-governance, and self-governance. Through the case of the forest management unit, the study revealed that although forest use is increasing and being entrusted to nongovernment actors, the governance remains hierarchical, whereby the central government is the dominant actor enacting regulatory mechanisms guiding actor interactions and participation and has not yet departed from previous modes of governance. **Rizky Ramadhan et al.** discuss the topic of biofuel development and indirect deforestation. They investigate the land-use changes in the Riau and Central Kalimantan Province as the largest palm oil producers, using the geographic information system (GIS). The findings of this research are intended to understand indirect deforestation, local plantation practices, and their role in the surrounding community and solve the unintended consequence of policies aimed at improving environmental conditions such as the Biofuel Program. **Sari et al.** employ a political economy approach to explore how the interactions between the political economy structure, institutions, and actors have resulted in the slow implementation of green policy commitments, particularly in reviewing the compliance of land-based industry licenses and acknowledging customary (adat) areas in Papua Land. The findings suggest that the reform is mainly driven by development partners and limited numbers of bureaucrats. The small coalitions were successful in focusing their effort on enacting green policies in the two provinces. However, the study highlights constraints posed by these actors to turn the policies into actions. **Hapsari** explores how knowledge co-production works in the emergence of permaculture movements in Indonesia within the broader literature on social movement and counter-hegemonic politics. This study is based on the experiences of four permaculture communities in Indonesia. It reveals that the formation of permaculture movements in Indonesia involves negotiated boundaries among different ways of knowing in the epistemic relations surrounding permaculture practices. The critical distancing that develops between the movements and the hegemonic knowledge structure seeks to transform

agro-industrial knowledge practices toward an alternative knowledge system. **Salman and Mori** discuss the concept of knowledge co-production further through the case of the Indonesia Sustainable Palm Oil (ISPO) as a product of knowledge co-production. This study use the principles for high-quality knowledge co-production for sustainability to look more into the cooperation and compliance gaps providing additional nuance on why such gaps exist. The findings show that on top of the existing operationalization problem, ISPO is a knowledge co-produced to endorse the government's predetermined agenda and discuss the way forward to achieve sustainability.

1.3.4 Part IV: Urban

Mulyana et al. develop the conceptual models of dynamic governance model in urban water governance. This research uses a qualitative method by utilizing a soft system methodology (SSM) to develop a dynamic conceptual model that can be useful to implement in an urban area. This chapter also showcases the result of the adapted model in Bandung Metropolitan Urban Area as an implementation strategy in a fast-growing urban area. **Setianto and Widianarko** further discuss the role of the civil society movement in environmental governance in Indonesia. Through literature review, the research provides a theoretical framework for the dynamic adaptations occurring in the Indonesian government concerning the emerging civil society movements and the political turmoil (from authoritarian to more democratic governance) associated with them. This study demonstrates that civil society movements are not a single homogeneous entity and dissemination of power among governmental structures is not merely a technical matter aiming to provide a better service but also a notion of political power contestation. Finally, the dynamic relationships within civil society organizations, the multilevel governmental institutions, and the various stakeholders in the private sector have led to a mode of governance called the "governance by accident," instead of "governance by design" as a new model of environmental governance.

Pambudi and Kusmanto in their chapter discuss the challenge of urban water governance in Indonesia and provide a comprehensive review of laws, regulations, and policies associated with water conservation and how they play out at the implementation level. They argue that the underlying problem is not so much a lack of policies but rather the prevalence of overlaps of regulations, leading to weak and uncoordinated implementation. **Clegg et al.** explore the issue of flood governance in Indonesia. Through the case of the Ciliwung River in Java, Indonesia, they identify decentralized governance as a significant challenge to achieving integrated river management to mitigate flooding, where plans need to be carefully coordinated and high levels of collaboration are required, and improved transboundary river management is needed. **Abdulnabi Ali et al.** discuss the problem of global solid waste in the global south. Using the case of Jakarta, the study analyzes how participative processes within sustainable solid waste management efforts in Jakarta are executed

to investigate potentials and obstacles that evolve during the implementation. The results reveal that the waste problems in Jakarta are complex, interrelated, and multilayered. While participatory procedures have been acknowledged by the organizations to be highly relevant for waste management, such approaches should be adapted depending on the local circumstances and actors.

1.3.5 Part V: Climate

Firdaus et al. analyze the fate of climate actions during the Covid-19 pandemic in Indonesia and develop a crisis management framework to provide insights about governing climate change under the Covid-19 pandemic while seizing the opportunities to achieve the climate target. The chapter ends with a proposal for redesigning climate policies, including financing mechanisms and improving the governance in climate adaptation and mitigation. **Karuniasa et al.** explore the issues of capacity building in the context of a highly complex governance setting of Indonesia's more than 500 districts, each with their specific issues around mitigation and adaptation that pose challenges for both top-down and equally important, bottom-up approaches. The chapter suggests that the institutionalization of capacity-building is key in highlighting the role of civil society networks—especially those that can reach the far-flung districts of Indonesia—in creating trust in the regions where they are distributed. Finally, **Ridwansyah et al.** examine the strategy for urban climate mitigation. The chapter explores the case of Kupang City as one of the cities in Indonesia that is vulnerable to disasters caused by climate change. In this study, the geographical, demographic, and socioeconomic characteristics of Kupang City are analyzed to find the shortcomings and the challenges faced to implement policies related to climate risk reduction. This study comes up with seven priority sectors that should be considered to resolve the disasters and challenges caused by climate change, including climate change adaptation and disaster risk reduction, water and sanitation, energy and transportation, solid waste management/municipal waste, sustainable use of resources, GHG emission inventory, and financing.

1.3.6 Part VI: Social and Technological Interventions

Turner-Walker unravels the local-level governance characteristics and interactions influencing climate change adaptation prevalent in marine-agrarian coastal island resource bases. Drawn through comparative case studies of coastal area communities in Central Java and Central Maluku, the chapter explores how local resource governance drives the ability to deal with environmental pressures, conflict, and change. The chapter is relevant for understanding how the ways of governing, innovating, and engaging strategies of adaptation to change throughout rural and coastal regions of Indonesia.

The chapter by **Rahmani et al**. discusses the management of sustainability transition that emerges in various types of community-scale projects. The study was conducted on the implementation of solar water pumping systems (SWPS) project in Yogyakarta Province, Indonesia, and showed some governance challenges, including insufficient training and lack of funds for damage repair. It highlights the need for an iterative process of learning and network building. To achieve the sustainability transition, they argue that it is imperative to build a vision and deep networks within local government rather than simply replicate the number of project installations.

Asmara et al. focus on the implementation of photovoltaic (PV) innovation as one of the main renewable energy sources aimed to achieve a national electrification ratio in Indonesia. This study finds that PLTS/ SHS projects face unresolved classical problems over the years to sustain PV projects in Indonesia. This study proposes a regional innovation system (RIS) and sectoral innovation system (SIS) as the Indonesian comprehensive policy strategy to sustain national PV projects. Network governance (NG) perspective is a lens to capture how actors of academic, business, government, and community (ABGC) interact and collaborate mutually. **Santoso et al**. further highlight that the dimensions of the triple bottom line approach to sustainable development contain inherent conflicting goals in implementation and fragmentation. This study serves to overcome fragmented approaches by using a holistic, sustainable governance transition process for integrating urban and port–industry governance concepts. A novel online platform, VIDEL (Virtual Dashboard of Environmentally Logistics-Port-City), is designed as a smart system that engages all stakeholders. This platform binds the requirements and interests as well as harmonizing actors in the interactions of urban with port and industry to secure innovative and environmentally friendly ways. It will become a digital control tower for a sustainable governance system in a port city.

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Part I
Emerging Concepts and Perspectives

Chapter 2
Introducing the Pluriverse of the Anthropocene: Toward an Ontological Politics of Environmental Governance in Indonesia

Rangga Kala Mahaswa and Min Seong Kim

Abstract This chapter introduces an idea that is gaining increasing prominence in discussions of the Anthropocene: the idea of the pluriverse. We argue that the very condition of the Anthropocene can serve as an opportunity to give serious consideration to the ontological thesis of the pluriverse, namely that there are many *kinds* of worlds, some of which may allow for "social" relations that are constituted by "more-than-human" beings. In the first part of the chapter, we draw from the literature on the pluriverse and studies of indigenous worlds that have appeared in the past decade to elaborate on the idea of the pluriverse, highlighting, in particular, the ethical motivation that underpins calls to recognize different kinds of worlds. In the second part of the chapter, we consider the implications of the pluriverse in Indonesia, particularly in relation to "*adat* revivalism" and CSR practice. We suggest that an "ontological politics" toward the recognition and preservation of many kinds of worlds can be understood in Indonesia as a struggle to deepen *Bhinneka Tunggal Ika* (Unity in Diversity), which the modern Indonesian state has long professed to be one of its foundational principles.

Keywords Anthropocene · Pluriverse · Ontological politics · Indigeneity · *Adat* revivalism

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2.1 The Pluriverse of the Anthropocene

The thesis that the appearance of humankind marks the beginning of a distinct geological time unit has been entertained since the early twentieth century, under terms such as "Psychozoic," "Anthropozoic," "Noosphere," "Gaia," and the "Anthropocene"—a word that is known to have been used by Soviet scientists in the mid-twentieth century. The Anthropocene drew renewed attention in the early 2000s, after Paul J. Crutzen proposed it as the name of a new geological epoch, which can be distinguished from the Holocene by the emergence of *Anthropos*, or humans, as a *geological force* whose activities on the planet generate apparent and measurable effects (Crutzen, 2016).

Exactly when the Anthropocene begins, if it can be given a more formal stratigraphic definition at all, has been a matter of debate (Malhi, 2017). Some proponents of the Anthropocene thesis have suggested its pre-historic beginnings in the human discovery of fire, adoption of enhanced hunting-gathering techniques, and the domestication of plants and animals. Others have regarded the onset of modernity and the Industrial Revolution, with the increase in the use of fossil fuel and mass manufacture, as the beginning of the Anthropocene. Amidst the increasing interest in the thesis that human presence has impacted the planet to a sufficient degree to merit its recognition within Earth's geological timescale, the Anthropocene Working Group (AWG) was established in 2009 as a part of the Subcommission on Quaternary Stratigraphy—a constituent body of the International Commission on Stratigraphy—with the aim of engaging in a more in-depth investigation that should lead toward the identification of the formal basis of a rupture between the Holocene and the Anthropocene. What the group sought to determine was a global marker in the environment that indicates the start of a distinctive geological epoch, a novel "golden spike."

Today, it is widely accepted that the dramatic increase in anthropogenic activities affecting the planet beginning in the 1950s, often referred to as the "Great Acceleration," marks a significant turning point in planetary history (Steffen et al., 2015). The extent to which anthropogenic activities can be considered geological forces is such that a term such as "teleconnections"—far-distant perturbations that prove to be coupled by hidden bonds—that had been used to refer to fluctuations in atmospheric pressure and earthquakes in geographically distant areas can plausibly be expanded to encompass anthropogenic phenomena that might include the flow of capital or energy consumption (Davies, 2016). More recently, the Covid-19 pandemic that began in 2020, too, has been described by some as the "disease of the Anthropocene" (O'Callaghan-Gordo & Antó, 2020)—an expression designed to highlight the fact that many of the conditions of possibility of the Covid-19 pandemic, from cross-species transmission of viruses to the rapid appearance and spread of variant strands, were in large part human-made. It is no exaggeration to say that "human societies are now among the most powerful of the ecological forces that operate on, above, and below the surface of the earth" (Davies, 2016, p. 10).

In light of its primary aim of producing an understanding of the Anthropocene toward its formal inclusion in geological research, the AWG had, during the first several years of its existence, tended to exclude research and findings outside the discipline of geology, not least to minimize ambiguity and confusion in defining the Anthropocene in formal geological terms (Zalasiewicz et al., 2019). However, the Anthropocene thesis has quickly crossed disciplinary boundaries and is now a major basis for research in disciplines such as sociology, political theory, cultural studies, history, and philosophy (Clark & Yusoff, 2017; Davis & Turpin, 2014; Haraway et al., 2016; Malhi, 2017), as well for the increasingly important multidisciplinary research program of Earth System Governance (Biermann et al., 2012). We are in full agreement with Christopher Hohnë's view that "emerging economies need to become more central to the Anthropocene discussion, as they themselves have become strong drivers of global environmental change" (Höhne, 2018, pp. 124–125). The contemporary discourses around the idea of the Anthropocene are particularly relevant for Indonesia, as Hohnë points out, for the country now stands among the largest emitters of greenhouse gas in the world, with a historical per capita emission that is greater than that of the European Union.

Given the interest that the Anthropocene thesis has garnered across a variety of disciplines, it has, naturally, been taken up in different ways, and the ultimate import of various discussions around the Anthropocene does not necessarily cohere into a single vision or set of proposals. Nevertheless, in our view, the most interesting and novel perspectives opened by the Anthropocene thesis can only proceed from the recognition that, despite having its conceptual origins in recognition of the far-reaching impact of human intervention on the planet, the Anthropocene, as such, is not an anthropocentric concept (Mahaswa & Widhianto, 2020). While the Anthropocene thesis conceives humans as a geological force and the possible source of geological changes, it also dislocates, precisely by placing humans alongside nonhuman forces and entities, the exceptionality of the human that underpins anthropocentrism. As Jeremy Davies, defending the anti-anthropocentric implications of the Anthropocene thesis, writes: "Humanity is not at the center of the picture of the Anthropocene, opposing, by its powers of mind, the passive matter center that encircles it. Instead, human societies are themselves constructed from a web of relationships between human beings, nonhuman animals, plants, metals, and so on" (Davies, 2016, p. 7).

In this chapter, we introduce one of the ideas that has gained prominence over the past decade in discussions of the Anthropocene thesis: the idea of the pluriverse. In our view, the very condition of the Anthropocene itself can serve as an opportunity to give serious consideration to the notion of the pluriverse and to take it as the ontological ground of human—and indeed nonhuman or "more-than-human"—existence. In the first part of this chapter, we draw from some of the key literature on the pluriverse and studies on non-Western, indigenous worlds that have appeared within the past decade to elaborate the idea of, and the motivation for, the pluriverse. According to this growing body of literature, to understand the condition of the Anthropocene from a pluriversal perspective is to recognize that reality is composed of not one but many worlds, some of which have long been threatened to extinction

by the domination of one particular world characterized by the pursuit of Western-centric modernization and capitalist exploitation. In this respect, the proposition of the pluriverse as the ontological ground of the Anthropocene is an ethically motivated one—a point that we illustrate by adapting the idea of the "differend" from the French philosopher Jean-François Lyotard (1989). The second half of this chapter considers how the discussions on the pluriverse may be relevant in the Indonesian context. In particular, we propose that the "ontological politics" elaborated by some of the key thinkers of the pluriverse offers a novel perspective for approaching the recent phenomenon of "*adat* revivalism" in Indonesia.

2.2 "Many Worlds Make Us": A Pluriversal Politics

Accepting the pluriverse as the ontological ground of the Anthropocene implies a stance that goes a step beyond pluralism. Whereas the latter implies the acceptance of "many worlds" *qua* social spaces constituted by culturally different human groups, the pluriverse—as a subversion of the notion of universe—implies an explicit recognition of many *kinds* of worlds, some of which may allow for "social" relations that are constituted by "more-than-human" beings. A pluriversal outlook of this kind is called for by the declaration of the Zapatista movement, reproduced below:

> Many words are walked in the world. Many worlds are made. Many worlds make us. There are words and worlds that are lies and injustices. There are words and worlds that are truthful and true. In the world of the powerful there is room only for the big and their helpers. In the world we want, everybody fits. The world we want is a world in which many worlds fit. […] Softly and gently we speak the words which find the unity which will embrace us in history and which will discard the abandonment which confronts and destroys us. Our word, our song and our cry, is so that the dead will no longer die. We fight so that they may live. We sing so that they may live. ("Fourth Declaration of the Lacandón Jungle," Ejército Zapatista de Liberación Nacional (1996), as translated in de la Cadena & Blaser, 2018, p. 1)

The Zapatista declaration has been a reference point in discussions on the pluriverse within and without academia (de la Cadena & Blaser, 2018), and the message ensconced therein merits further elaboration. An Australian court case in the 1990s discussed by Gelder and Jacobs (1998) can serve as a useful point of entry for understanding the motivation for and implications of the vision of "many words" and "many worlds" invoked by the Zapatista.

The case in question involves two plaintiffs: a construction company that is set on developing an island, and a group of aboriginal women claiming that the island is their sacred site. While the court is willing to hear the case put forth by the aboriginal women, the women's lawyer explains that according to the aboriginal beliefs, the meaning of the site must remain a secret transmitted over the generations through the maternal lineage and that the disclosure of the secret to anyone else would desacralize the site. If the aboriginal women do not provide the evidence demanded by the court, they lose the case, but if they were to provide the evidence, they would

also lose the case as the site would have lost its holiness in their eyes. The objects referred to by the utterances of the aboriginal women are simply nonexistent for others in the courtroom. This sort of impasse, which the French philosopher Jean-François Lyotard proposes to call "differend" (Lyotard, 1989), signifies a clash between the incommensurable ways in which particular things are disclosed to, or experienced and handled by different groups or individuals—processes that would be described by key thinkers of the pluriverse in terms of "world-building" practices, or *worldings* (Anderson & Harrison, 2012; Mercier, 2019).

Lyotard suggests that the task of philosophy is to bear witness to cases of *differend* and to help invent new idioms common to the parties implicated in those cases. As a *differend* attests to the inadequacy of the expressive potential of prevailing discourses, its resolution would only be possible under the invention of new discourses. "To give the differend its due," write Lyotard, "is to institute new addressees, new addressors, new significations, and new referents in order for the wrong to find an expression" (Lyotard, 1989, p. 13). Justice, Lyotard suggests, consists in the invention of what he calls a new "phrase-universe" that would contain new referents, addressees, and modes of legitimation, that is, a new system of meaning, or discourse, that cannot but be different from any such system available to the two parties.

Lyotard's writing—*Le Différend* was published in France in 1983—predates the advent of the contemporary discourse of the Anthropocene and the pluriverse by at least a couple of decades. Lyotard did not make the further step of characterizing the *differend* as a notion that points beyond the clash of different *discourses*, implicitly prioritizing thereby the linguistic construction of objectivity. Contemporary discussions on the pluriverse, however, draw from theories of "new materialism" that have gained a significant foothold in philosophy and social sciences in the past two decades, asserting, in effect, that the *differend* evinced in the preceding case of the aboriginal sacred site as a matter of *being*. According to this view—and the further step taken here is arguably the logical outcome of Lyotard's thought—it is not that there are different, sometimes incompatible, manners of "looking at" or "talking about" one and the same external world. Rather, the difference goes, so to speak, all the way down: there is in fact a plurality of worlds and world-building practices involved in the impasse because one world may encompass entities that cannot be entities of another world, such as islands that bear ancestral secrets that resist transmission except to the select few.

The increasing significance in contemporary societies of clashes of the kind describable in terms of the "ontologized" version of the Lyotardian differend underpins the need to conceptualize what Marisol de la Cadena and Mario Blaser—drawing from ideas elaborated by philosopher Isabelle Stengers—have called "ontological politics," which they define as an "imaginary for a politics of reality, and a field that stands where political economy and political ecology, formulated with ideas of nature and economic growth, are insufficient (at times even unable) to think antagonisms that, for example, involve things like mountains and forests that emerge as resources through some practices but also as persons through other practices" (de la Cadena & Blaser, 2018, p. 5). For too long, those who advocate the need for

ontological politics would argue, it has been taken for granted that we already know which entities deserve our attention when so much of the struggles of indigenous peoples have involved getting governments and multinational corporations to recognize the existence of the entities that integral to their worlds. In other words, before we can even speak of conservation and sustainability, what has to be determined is *what is there* to be recognized, conserved, and sustained. That the determination of this matter must involve the expression of and interaction between a plurality of potentially irreconcilable worldings renders ontological politics an irreducible dimension of contemporary environmental governance.

The pluriverse, understandably, is a recurrent theme in today's activist and progressive academic circles. In some cases, the idea has been taken up outside activist movements and scholarly publications, even receiving state recognition. Catherine Walsh (2018), for example, has shown how the Ecuadorian Constitution has implemented the indigenous concept of *Buen Vivir*—roughly translatable as "living well" or "collective well-being"—to curtail rampant developmentalism, a concept and word that, according to Walsh, "does not exist in the cosmovisions, conceptual categories, and languages of indigenous communities" (Walsh, 2018, p. 184). Concepts associated with indigenous worldings or cosmovisions unassimilable to the developmentalism enabled by the Western conception of modernity are found elsewhere in Latin America and beyond (Peredo, 2019). To list a few: according to anthropologist Francis B. Nyamnjoh, the universe of West Africa's Yoruba people is one in which consciousness "can inhabit any container—human and non-human, animate and inanimate, visible and invisible" (Nyamnjoh, 2017, p. 28), hence one that allows for a variety of relations between humans and nonhumans alien to the modern, anthropocentric, world; the Southern African value of human mutuality has been elaborated around the notion of *ubuntu* (Binsbergen, 2001); the Indian concept of *swaraj* implies a unique view of self-reliance and self-governance (Kothari, 2018); an understanding of the relation between nature and human beings called *Pachamama*—sometimes rendered (though not unproblematically) in English as "Mother Earth"—is an integral part of the Andean imaginary (Mamani-Bernabé, 2015). Notions drawn from indigenous cosmovisions have inspired socially transformative initiatives across the world that seek to subvert prevailing modes of environmental governance (Chandler, 2019; Chandler & Reid, 2019; de la Cadena, 2010; Escobar, 2020; Kallis et al., 2020), which verge on—to borrow a concept popularized by the Cameroonian philosopher Achille Mbembe—a *necropolitical* alliance between state and capital.

In the Anthropocene, the magnitude of human intervention is such that it has become capable of inducing planetary-scale changes, with repercussions that cannot always be foreseen (Davies, 2016). As the climate crisis of our time demonstrates, some of the repercussions of anthropogenic activities are threatening for humans themselves, indeed, for the existence of the dominant world—one that the Zapatista declaration describes as "the world of the powerful"—governed by logics of capital and resource development. Under such a condition of a new *terra incognita*, calls to recognize many kinds of worlds highlight the nature and extent of the threats of the Anthropocene that remain unrecognizable to the dominant world. If

the Anthropocene thesis enjoins us to see that humans have become capable of destroying a world, the pluriversal paradigm on the Anthropocene enjoins us to see that there are *worlds* that are under threat or have already been destroyed by the very same process that threatens the dominant world. Emerging from the peripheries of a world founded on Western-centric modernity and developmentalism, pluriversal ontological politics are nothing less than struggles to preserve worlds and the human and nonhuman beings within them. From the pluriversal perspective, negligence of the destruction of these "other" worlds while the dominant world values its self-preservation constitutes a wrong, an unjustifiable outcome of a solipsistic anthropocentrism built into Western rationalism that had closed the dominant world responsible for the destruction of a plurality of worlds off from worlds other than itself.

Activists and thinkers drawn to the idea of the pluriverse have sought to articulate the possibility of a convivial co-existence of worlds, an arrangement that would allow everyone to coexist with dignity and peace, without being subjected to diminishment, exploitation, and misery (Kothari et al., 2019). In seeking such a possibility (unknown, so far, to the dominant world of "lies and injustices"), some theorists have noted fundamental proximity in the relational ontologies that underpin Daoist and Buddhist worldviews as well as the Andean cosmovision (Querejazu, 2016). These relational ontologies emphasize, according to Querejazu (2016), the balanced unity, complementarity, and reciprocity between entities—no one entity can exist without others, and it is only in co-existence that an entity can be said to exist in full. This relationality promotes, in turn, fundamental equality in every aspect of a variety of relations that can form between the human, the natural, the spiritual, and the cosmic. The pluriverse that emerges from the Andean cosmovision would be one that encompasses not only human worlds but also nonhuman worlds, in which souls of the dead, forces of nature, and supernatural beings exist as autonomous entities with which humans can communicate through "the language of symbols, rituals and special skills that some humans can develop" (Querejazu, 2016, p. 9).

Further elaborations of ontological precepts embedded in indigenous worldings have gone hand-in-hand with developments in contemporary philosophy. Aside from the aforementioned Stengers, the thoughts of Donna Haraway (2015), Rosi Braidotti (2019), Manuel DeLanda (2019), Bruno Latour (2014, 2017), and Graham Harman (2018) have been influential in fostering sophisticated inquiries into the ontological being of the pluriverse. Notwithstanding the differences between their theories, what these thinkers advocate is a "flat" ontology wherein the relation between the human and the nonhuman would be one in which one enjoys neither ontological nor ethical primacy over the other (Harman, 2018; Morton, 2013). What new perspectives on the relation between the human and the nonhuman these ontologies will open awaits to be seen, but the broad ethical implication of the pluriversal perspectives can be stated succinctly: the ethics of the pluriverse is an ethic for worlds in which humans would occupy a much more humble place.

2.3 Towards an Ontological Politics of Environmental Governance in Indonesia

Indonesia is one of the most culturally diverse countries in the world, comprising over a thousand ethics groups spread across more than 17,000 islands, though the majority of the country's population resides in the five main islands of Sumatra, Java, Sulawesi, Kalimantan (Borneo), and Papua (New Guinea), and the archipelagos of Nusa Tenggara and Maluku. The cultural diversity of the archipelago posed a challenge for Indonesia's founding figures, who wished to found a modern state wherein the people would come to share a common national civic identity regardless of the differences between their ethnic and regional backgrounds. Confronted with the task of establishing a political unity on the culturally and geographically diverse archipelago, Indonesia's nationalist leaders relied on the strategy of establishing national unity through the promulgation of a single national ideology, the *Pancasila*, which was promoted as the embodiment of the shared values, emotions, and the singular *Weltanschauung* of the people of the archipelago (Bourchier, 2015). The essence of the vision of Indonesia that has been pursued and legitimated through appeals to the state ideology since the country's independence is perhaps best expressed by its official motto, *Bhinneka Tunggal Ika* (Unity in Diversity): Indonesia would be a country in which ethnic minorities retain a large degree of cultural autonomy, but only in so far as they do not undermine the unnegotiable principle of national unity.

The role and consequences of the Pancasila ideology, which has often been used as an "inclusive myth" to which Indonesian leaders appeal in order to mend social disharmony, are well documented (O'Shannassy, 2010, p. 54). However, whereas most scholarships on the exclusionary or oppressive dimension of Pancasila and the discourse of national unity both within and without Indonesia tend to focus on its use by the state and ruling elites to suppress their ideological rivals and supposed threats to social unity such as political Islam, communism, and Western liberalism (Iskandar, 2016), Pancasila has not been subjected to as much critical scrutiny from the perspective opened by the Anthropocene and the pluriverse. Still, the beginnings of critical discussions of that sort can be found in some recent works by Indonesian scholars. For example, political theorist Shofwan Al Banna Choiruzzad (2020) has argued that one of the conditions of possibility of Anthropocene in the Indonesian context has been that of *anthrocentrization*, understood as the "gradual process of replacement/displacement or domination of nonanthropocentric political-economic governance, in which the relationship of humans with nature is based on respect and harmony, by anthropocentric political-economic governance, in which humans are at the centre and nature is exploited for the interest of humans" (Choiruzzad, 2020, p. 144). Choiruzzard traces the beginning of this process of anthropocentrization of political and economic governance to colonial state-building in the mid-nineteenth century that was designed with the singular aim of more efficient exploitation of resources through the creation of a unified market, which in turn displaced the systems of ecological governance found in indigenous communities.

Post-independence Indonesia witnessed further institutionalization of anthropocentric governance. In particular, the relentless pursuit of a developmentalist agenda during the three decades of the authoritarian New Order regime (1965–1998) had the effect of further marginalizing indigenous communities. Despite the state's formal recognition of the *adat*—an expansive concept that refers to the beliefs, customs, and traditions of the country's diverse indigenous peoples (van der Muur et al., 2019)—law that governs such communities, the New Order insisted, partly to consolidate its power, on the congruence of its dirigiste model of national development and the practical implementation of Pancasila (Robison, 1996). The elevation of the Pancasila in the early 1980s to the status of *asas tunggal*—the sole ideological foundation—of all social forces, including political parties and religious organizations, ensured that indigenous voices would find little representation in national politics. National unity, while imposed most aggressively during the New Order (Abdullah, 2003; Ulum & Hamida, 2018), is an ideal that continues to govern the Indonesian state's stance toward diversity, according to which cultural, religious, and other forms of diversity are secondary to the ideological homogeneity represented by Pancasila and the official motto as interpreted by the central government in Jakarta.

Decentralization has been one of the prime characteristics of the post-Reformation era that followed the fall of the New Order. The devolution of authority from the center to the peripheries that followed the passing of the landmark Decentralization Laws in 1999 loosened the power and control of the central government and exacerbated the effects of globalization, such as fragmentation, decentralization, and internationalization of state apparatuses (Nordholt & Klinken, 2007; O'Shannassy, 2010; van der Muur et al., 2019). The devolution of power, with the concomitant deterioration of the ideological grip of Pancasila, raised new challenges for Indonesia's central government, one of the most notable manifestations of which is the emergence of indigenous social movements around *adat*.

"*Adat* revivalism" is one of the most prominent forms of political undertaking in the current post-Reformation Indonesia. It is aimed at "transcending uneven sociopolitical conditions and economic relations" (Tyson, 2011, p. 653) by appealing for the recognition of the rights of the indigenous groups that have been victimized by the developmentalist ideology that had remained hegemonic in Indonesia for much of its modern history. The struggles of indigenous communities present very different worldviews and world-building practices than the dominant versions. According to Tyson, *adat* revivalism is "a social construction, a matter of becoming indigenous based on selective representations, articulations and deployment of the past" (Tyson, 2010, p. 5), which harbors the possibility of empowering indigenous populations to challenge clientelism—dependency relationship between the weak and the powerful where the former is led to sell their autonomy to the latter—that persists in rural Indonesia, deepen local people's participation in community mapping, and increase their representation in regional and national governments. Moreover, the revival of traditional cultural practices outside Java, such as in western Flores (Erb, 2007) and Sumatra (Biezeveld, 2007), can be seen as reactions against the Javanese political and cultural hegemony in Indonesia. But the most politically consequential

employment of *adat* in post-Reformation Indonesia has been in disputes involving indigenous communities' rights over land and natural resources (Bedner & Arizona, 2019). *Aliansi Masyarakat Adat Nusantara* (The Indigenous Peoples' Alliance of the Archipelago), an advocacy group representing Indonesia's indigenous communities founded in 1999, claims to be one of the world's largest movements dedicated to defending such rights (van der Muur et al., 2019).

While the general orientation of *adat* revivalism does appear to be congruent with the ideal of a pluriversal, "difference-friendly" world, in its current form, *adat* revivalism risks the possibility of failing to realize its socially transformative potential. As seen in the Minangkabau communities of West Sumatra studied by Biezeveld (2007), the revival of indigenous cultural practices has sometimes led to the return of problematic social and cultural practices based, for example, on gendered discrimination. At a broader level, one of the risks *adat* revivalism faces is the kind that Blaser (2013, 2014), himself a vocal proponent of the pluriversal paradigm from a decolonial perspective, has noted in the context of Latin American ontological politics, in the course of which some movements originally intended to defend indigenous worlds have been reduced to performances of ethnic uniqueness by the indigenous groups for strategic gains. Essentialism, even of a strategic kind employed by underrepresented groups, risks falling short of the aims of ontological politics of the pluriverse, in as much as it tends to expropriate the objects of the indigenous groups' worlds into the dominant one to win recognition within the latter. Indeed, apropos the aforementioned *Buen Vivir*, there are concerns that it has simply become another hegemonic political paradigm in Ecuador or a buzzword that accompanies vague proposals that fail to translate into concrete action and real change. For example, Benalcázar and de la Rosa (2021) point out that when the concept was taken up by the Ecuadorian constitution, its implications, such as the initiative for renewable energy supported by activists, were left ambiguous, and subsequent legislations have not signaled a radical departure from Ecuador's centralized, state-driven policy on energy.

Depending on how Indonesia's indigenous movements unfold in the coming years, there is a risk that *adat* would be made into something be tolerated or appreciated as a proof of Indonesia's cultural diversity, while government policies and industry practices in the country, by and large, continue to go on as usual. If such an outcome were actually to transpire, it would in fact not be entirely new in the history of *adat*. Although motivated by the commendable intention of understanding and preserving local traditions, the colonial-era scholarship on *adat*—the Leiden School legal scholar Cornelis van Vollenhoven (1874–1932) being the most influential figure in the earliest explorations of the notion—ended up isolating *adat* from its political and economic base, effectively relegating it "to the status of folklore" (Tyson, 2010, p. 164), an exotic "other" of the modern state.

Yet, that it does not guarantee desirable outcomes is not an argument against ontological politics per se. Rather, the contingency of its outcomes is suggestive of what makes ontological politics *political*. The interaction between different worlds—and the unavoidable operation of cultural translation between them—implies that the outcome of ontological politics cannot be entirely removed from

broader economic, social, and political conditions. That a given indigenous worldview allows for a convivial relation with more-than-humans does not entail that such a relation will actually be realized without struggle. Critique of existing practices thus has a role to play in elucidating the stakes of the antagonism between indigenous and dominant worlds so that its consequences would finally constitute a step toward the realization of the ideals that have been articulated in relation to the pluriverse.

In this vein, recent discussions on corporate social responsibility (CSR) that call for a new awareness in environmental governance are worth noting. Indonesia has adopted the ISO 26000:2010 guidance for organization social responsibility, the Act of the Republic of Indonesia Number 40 of the year 2007 on Limited Liability Companies Article 74 Concerning Social and Environmental Responsibility, and evaluates corporate commitment to sustainability programs under the Performance Rating Program (PROPER) outlined in the regulation of the Minister of State for the Environment No. 1 Year 2021 (https://proper.menlhk.go.id/), which is designed to assess and produce a ranking of companies that reflects their adherence to CSR practices toward sustainable and ethical use of natural and human resources (Kafaa, 2019). Driven largely by the aim of satisfying international standards, the Indonesian government's regulations concerning CSR have tended to replicate precisely the limitations of dominant understanding of CSR that have been pointed out by critics, particularly by those writing from postcolonial or decolonial perspectives (Banerjee, 2021; Dawkins, 2021). Broadly stated, prevailing CSR practices do not give enough consideration to the institutional voids created by the limitations of the Western theories of entrepreneurship, rendering CSR regulations unable to engage with alternative perspectives, indigenous distinctiveness, or the specificity of local contexts. While the conflict surrounding the mining operation headed by PT Freeport Indonesia in Papua has garnered perhaps the most attention because of the delicate relation between the indigenous people of Papua and the Indonesian central government (McKenna, 2015), tensions between local peoples and corporations can be seen in the various loci of Indonesia's lucrative extractive industry (Anggoro et al., 2021). It would be in line with the aims of ontological politics to introduce decolonial perspectives in CSR, so as to broaden the notions of environmental governance, sustainability, and responsibility beyond the rules of one particular world. If the calls for the recognition of the pluriverse have an ethical underpinning in a sense we have suggested, then a pluriversal ontological politics with respect to CSR may very well consist in attempts to expand the latter's purview to incorporate the preservation of indigenous worlds as one of its basic aims. Beginning to recognize, and giving expression to, the difficulties—the kind that we have highlighted earlier with reference to Lyotard's idea of *differend*—posed by the clash of different worlds would already constitute a significant first step toward an ontological politics in Indonesia.

Each clash of worlds is likely to require a different approach. A one-size-fits-all solution, after all, is antithetical to the very idea of the pluriverse. Nonetheless, whatever proposals pertaining to Indonesia put forth from a pluriversal perspective are more likely to have traction and thus real consequences if the country's

government is able to shift its own perception of, and its relation to, environmental governance, so that the idea of pluriverse comes to be accepted as its own rather than as an imposition from outside. We would thus like to close this section with a brief consideration of the sense in which the pluriverse and calls to recognize many worlds can be seen as compatible with—or even as deepening—an ideal that Indonesia already embraces as its own.

Although Indonesia has increasingly become more involved in international initiatives—such as the United Nations Framework Convention on Climate Change (UNFCCC)—in the last decade and the government has committed itself to further implementing international norms for climate mitigation, it is "still much more 'talking the talk' of climate change than 'walking the walk' of climate actions" (Höhne, 2018, p. 139). On matters of environmental policy, pressure from the international community appears to remain as one of the biggest motivators of action for Indonesia's central government. Likewise, its willingness to listen to advocates of *adat* movements may in large part be a result of its heeding to pressure coming from NGOs, both local and international. Moreover, because *Bhinneka Tunggal Ika*—and other official ideological "pillars" of Indonesia such as Pancasila and NKRI (the Unity of the Indonesian Nation)—places weight on unity at the expense of diversity, and because that ideal of unity has become at the hands of the central government a tool for its exploitation and destruction of local indigenous worlds, *adat* has been taken up most often as a counterhegemonic cause against the Indonesian state's emphasis on national unity (Avonius, 2003).

If these observations are accurate, it is not improbable for the idea of pluriversal ontological politics introduced in this chapter to be perceived by many in Indonesia (including corporate executives and policymakers) as yet another case of "foreign" paradigm, an idea imported from without Indonesia that places additional pressure on the government in matters of environmental governance. This sort of perception, in our view, is not only detrimental to realizing the ideals advocated by ontological politics but is also false. The Indonesian archipelago is *already* home to traditions of thought that are nonanthropocentric and pluriversal. To mention just a few: the Ciptagelar Kasepuhan speaks of the harmonious relation between micro- and macro-cosmos, human and nature, through notions such as *Jagat Leutik, Jagat Gede—Jagat Leutik sanubar*, and *Jagat Gede Bumi Langit* (Humaeni et al., 2018); the Javanese philosophy of life, *Memayu Hayuning Bawana*, values the maintenance of balance and peace in nature and ecological spaces, as well as the well-being of both the human and the more-than-human spiritual worlds (Ainia, 2021); within the natural philosophy of West Sumatra's Minangkabau people, according to which the relation between nature and human is founded on learning and living together, nature is not only a place but a source of learning on how to grow and die well (Azwar et al., 2018). In as much as such diverse worlds have already been unfolding across the archipleago, the pluriverse and the ontological politics to which idea is tied deserve consideration as a means of theorizing, expressing, and preserving the richness—an *ontological* richness—of Indonesia.

The richness the Indonesian archipelago harbors means that the recognition of the pluriverse and the integration of ontological politics within environmental

governance need not be regarded as "foreign" imperatives. On the contrary, they may be seen as constituting an attempt to reclaim the potential already ensconced in Indonesia's founding principles. Throughout Indonesia's modern history, the diversity of the archipelago was regarded by the central government as posing a challenge for national unity. Despite the apparent celebration of diversity by Indonesia's central government, political unity, defined and imposed as it saw fit, rarely ceased to be the priority in state policy and ideological apparatuses such as education (Bourchier, 2015). Under this condition, various indigenous conceptions of the relation between humans and nonhumans were frequently set aside as irrelevant at the level of state policy and national identity. Against this historical tendency, ontological politics can be taken up as a radicalization of *Bhinneka Tunggal Ika*, as a struggle to realize further an ideal that the modern Indonesian state has long professed to be one of its foundational principles.

2.4 Conclusion

The pluriverse continues to inspire thinkers and activists alike, not least because it paves a way to reimagine the place of humans under the condition of the Anthropocene, in which the effects of anthropogenic activities are more extensive and consequential than ever before. It seems clear that if mass-anthropogenic activities constitute the most significant cause of the threats to the livelihoods of virtually all human as well as more-than-human beings on Earth, then a response that is adequate to such planetary-scale changes would require fostering a collective awareness and concerted action at an unprecedented scale. By highlighting the need for an understanding of the world as plural and diverse, as spread across corners of the world and as unlimited by the constraints of Western rationality, the idea of the pluriverse has facilitated some of the most extensive attempts to understand and respond to the conditions of the Anthropocene. Thus, although discussions around the idea of the Anthropocene, particularly with regard to pluriversal ontological politics, are, at the moment, still an emerging discourse within environmental governance, we are convinced that they will only gain further relevance in the coming years.

Although the scholarly literature on the topic may sometimes come across as esoteric to the general reader, discussions around the pluriverse are, at bottom, motivated by a clear ethical commitment to think and elucidate the profound ramifications of the vulnerabilities that are experienced or lived differently by different groups but are nonetheless shared by all those inhabiting this planet. It is our view that Indonesia has an important role to play in matters with which theorists, activists, and inhabitants of the pluriverse have concerned themselves. Not only is Indonesia one of the major contributors to the planetary changes characteristic of the Anthropocene, given its cultural and geographical diversity, but Indonesia also has the potential to become a key site of a pluriversal ontological politics. A realization of "many worlds" in Indonesia will no doubt involve interdisciplinary and

transdisciplinary cross-sector research projects that radically reexamine the social, political, self-understanding, and ideological basis—which have often been left underexamined or taken as self-evident within domestic policy discourses—of the country. How such reexaminations should proceed is a question that shall be left open. But the first step toward the affirmation of local, indigenous worlds and reorientation of Indonesia toward issues of profound planetary significance may consist, we have suggested in this chapter, in a kind of radicalization of an ideal that Indonesia already embraces as its own, namely, the ideal of unity in diversity expressed by the country's motto, *Bhinneka Tunggal Ika*.

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Chapter 3
Earth System Governance in Indonesia: An Initial Investigation

Erwin Nugraha, Mahesti Okitasari, Annisa Triyanti, and Yanuardi Yanuardi

Abstract Despite a growing scholarly interest internationally in the notion of earth system governance (ESG), the state-of-the-art of how the notion interacts in and with Indonesian academia has not been reviewed. The ESG notion is a paradigm that warrants the broader context of the Anthropocene and human-induced transformations of the entire earth system. Considering that Indonesia is one of the most important scholarly and empirical sites of investigation in Asia-Pacific, understanding the existing development of environmental governance with ESG can inform the corpus theory of sustainable futures. What does the notion mean in Indonesian academia? Which fields, disciplines, and networks have engaged with the notion? What are the alternative practices and directions of ESG emerging from and within the

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Indonesian academia? The chapter aims to offer an initial investigation by conducting a literature review with the following objectives: (1) to trace and evaluate the intellectual progression of the field of ESG from and within Indonesian academia, (2) to contextualize the theory and framework of ESG in the context of Indonesian academia, and (3) to identify gaps and offer reflections for future research. The chapter will review academic literature from the international database of Scopus and the Indonesian recognized national database of Garuda of the conceptual debates and discussion of ESG in the context of Indonesia. The chapter ultimately provides a summary, synthesis, and critical evaluation of the current body of knowledge about the ESG, within the broader context of environmental governance, in Indonesian academia and suggests future research.

Keywords Earth system governance · Anthropocene · Environmental governance · Literature review · Indonesia

3.1 Introduction

Despite growing scholarly interest in developing research, networks, and knowledge production with the notion of earth system governance (ESG), the state-of-the-art of how the notion interacts in and with Indonesian academia has not been reviewed. The notion of ESG is a paradigm that warrants the broader context of the Anthropocene and human-induced transformations of the entire earth system (Biermann, 2007; Burch et al., 2019). The current analysis with the "accumulation of knowledge" or "knowledge cumulation" (Newig & Rose, 2020) suggests the majority of knowledge production of ESG is produced in the global North, especially Europe and North America (Newig & Rose, 2021). Newig and Rose (2021) also indicate that even though East Asia and the Pacific region represent a significant body of knowledge production (considering the number of presentations, papers, and publication rate), they mainly originate from Australia and Japan.

Considering Indonesia is one of the most vulnerable regions in Asia-Pacific affected by climate emergency, disasters, and environmental degradation coupled with widening inequality, injustice, and weakening democracy (Dahiya & Das, 2020), an effort in evaluating the existing development of environmental governance with ESG will inform the corpus theory of sustainable development and future(s). What does the notion mean in Indonesian academia? Which fields, disciplines, and networks have engaged with the notion? What are the alternative practices and directions of ESG emerging from and within Indonesian academia?

This chapter offers an initial evaluation and reflection on the literature review and conceptual debates of ESG in the context of Indonesia and Indonesian academia. This chapter aims to present a reflective qualitative analysis with the following objectives: (1) to trace and evaluate the intellectual progression of the field of ESG from and within Indonesian academia, (2) to contextualize the theory and framework of ESG in the context of Indonesia and/or Indonesian academia, and (3) to identify

gaps and offer reflections for future research. The significance of the study is to offer an intellectual map of the interaction of ESG in the context of Indonesia and Indonesian academia and initial indications of ESG in influencing debates and knowledge production in the context of Indonesia and Indonesian academia.

The chapter reviewed academic literature from the international database of Scopus and the Indonesian recognized national database of Garuda.[1] The methodology used in this chapter is mainly based on literature review, especially looking at (combination of) general and specific keywords based on the contextual conditions and research lenses covered in the ESG framework with Indonesia as an empirical focus. The authors also used the term "environmental governance" in Indonesia to check an assumption that the concept is more familiar to Indonesian scholars. Two recognized scientific electronic databases were selected: (1) Scopus for the English language literature and (2) Garuda Portal for the literature in the Indonesian language (Bahasa Indonesia), with the search procedure combining the search terms in the titles, abstracts, and keywords. Search queries include "inequal" or "Anthropo*" or "Democra*" and "Power" or "Justice" and "Allocat*" or "Anticipat*" and "Imagina*" or "Climate change" combined with "Earth System Governance" or "Environmental Governance" or "governance" in Scopus and "Earth System Governance" or "Struktur Tata Kelola Lingkungan" or "Struktur Lingkungan" or "Politik Lingkungan" or "Antisipasi Perubahan Iklim" or "Skenario Perubahan Iklim" or "Keadilan Lingkungan" or "Transformasi Lingkungan" or "Keadilan Sumber Daya Alam" or "Transformasi Lingkungan" or "Antroposen" or "Tata Kelola Lingkungan" and "Environmental Governance" in Garuda Portal. Deductive analysis of the literature was then applied with the purpose of providing a general overview or scanning of the status of the ESG in Indonesia and/or Indonesian academia.

The authors designed the procedure with the bibliographic portfolio, which involved inclusion and exclusion criteria, to the results retrieved with the intended subject for knowledge development. Two criteria were selected: relevance to the study and availability, with no time-period limitation. Manual screening of the titles and abstracts was conducted to check the alignment with the subject of interest. On the relevance to the study, it was limited to studies addressing ESG/environmental governance and excluded, for example, articles reporting on corporate governance, which has limited relations with underlying environmental problems. The screenings yielded a total of 55 and 55 articles in Scopus and Garuda, respectively. Purposive sampling was performed for full-text analysis, selecting representative articles from each research lens and excluding remaining articles with similar topics. Whenever possible, highly cited articles were included in the review. Finally, as a result, 20 articles from each database were reviewed using the ESG framework to analyze the contextual conditions and research lenses as well as the intellectual progression of ESG in Indonesia and/or Indonesian academia.

[1] Garba Rujukan Digital, or known as Garuda Portal, is a database of 1.7 million articles collected from 2546 publishers, 13,532 journals, and 170 conferences as of January 2022, managed by Indonesian Ministry of Education, Culture, Research and Technology. The portal is accessible via https://garuda.kemdikbud.go.id/

In the following sections, the chapter provides a summary of the background and research framework with ESG focusing on the framework, specifically on contextual conditions and research lenses. It is followed by the results of the analysis on the initial indication of ESG in Indonesia and Indonesian academia. Following this, the chapter discusses the reflections, gaps, and suggestions for future research. As an initial qualitative evaluation and reflection, the chapter offers a summary, synthesis, and critical evaluation of the current body of knowledge with ESG within the broader context of environmental governance in Indonesia and Indonesian academia.

3.2 Earth System Governance in a Nutshell

The ESG project is a global initiative launched in 2009 by a global alliance of social scientists to advance understanding of the governance to address the current transition of the earth system (Biermann et al., 2009). The project defines ESG as the interrelated system of formal and informal rules, rule-making mechanisms, and actor-networks at all levels of human society (from local to global) that are set up to prevent, mitigate, and adapt to environmental change and earth system transformation (Biermann et al., 2009).

3.2.1 Research Framework

After 10 years of implementing the previous framework, since 2018, the ESG scholars have recently published new directions and reformulated the framework of earth system governance research.[2] This new ESG research framework is composed of both "the contextual conditions, which captures what is being observed, and research lenses, which offer analytical power by engaging with these conditions that fundamentally shape earth system governance scholarship" (Burch et al., 2019, p. 3). These two analytical procedures are the main analytical inquiry that this chapter will analyze when tracing and evaluating ESG from and within Indonesian academia and contextualizing ESG in the context of Indonesia and/or Indonesian academia.

3.2.2 Contextual Conditions

The new direction will be attributed to four key contextual conditions: (1) transformations, (2) inequality, (3) Anthropocene, and (4) diversity.

[2] See https://www.earthsystemgovernance.org/people/new-directions/

Transformations Burch et al. (2019, p. 3) define transformations as "shifts that involve fundamental changes in structural, functional, relational and cognitive dimensions of linked socio-technical-ecological systems." The study of transformations can be approached in several ways: analytically, normatively, or critically (Burch et al., 2019). Crucially, transformations imply changes in power relations. The new research directions recommend three different angles to comprehend the role of governance concerning sustainability transformation: governance for transformation, governance of transformation, and transformation in governance (Burch et al., 2019).

Inequality The new direction of ESG argues that the increasing and multifaceted inequalities across and within countries and socio-economic groups result from unjust procedural and distributive justice systems at multilevel governance. The research challenge is to discover "how inequality is embedded in the complex interactions of governance (actors, sectors, interests, forums, scales, technologies, etc.); within unpredictable natural systems; and in the context of competing economic (Ehresman & Okereke, 2015) and political pressures to allocate limited resources" (Burch et al., 2019, p. 5). Additionally, the new direction recommends developing studies "to understand how structural inequalities, power imbalances and intersecting axes of privilege and marginalization shape vulnerabilities to global environmental change and, in turn, are shaped by them" (Burch et al., 2019, p. 5).

Anthropocene Burch et al. (2019) support the notion that human activity has rapidly transformed the earth system from Holocene to the Anthropocene epoch since the "Great Acceleration" post-World War II era. This change considerably requires understanding not only about environmental governance in general but specifically about earth system governance. The Anthropocene involves three fundamental challenges for earth system governance research: urgency, responsibility, and complexity. These three research challenges are common issues to environmental governance but have become particularly globally intensifying under the conditions of the Anthropocene (Burch et al., 2019).

Diversity The new research directions emphasize considering that "the different directions in which societies can be steered result from power struggles and diversity in worldviews, knowledge systems, values and norms, and ecosystems" (Burch et al., 2019, p. 6). The diversity in norms and knowledge systems can be viewed in two opposite ways, an asset or a danger for just and ecologically sound governance. Thus, participation of different actors with norms, worldviews, and knowledge systems diverse in governance processes is prominent. The challenge is how to create and maintain decision-making processes that are at the same time inclusive and efficient. Thus, further research needs to "analyze, theorize, and criticize how diversity affects earth system governance practice" (Burch et al., 2019, p. 6).

3.2.3 Research Lenses

The new direction of the ESG research framework consists of five sets of interconnected research lenses: (1) architecture and agency, (2) democracy and power, (3) justice and allocation, (4) anticipation and imagination, and (5) adaptiveness and reflexivity.

Architecture and Agency This research lens aims to understand the institutional frameworks and actors implicated in earth system governance and how these institutions and actors resist or respond to change and evolve (Burch et al., 2019). Based on Biermann et al. (2009, p. 31), governance architecture is defined as "the interlocking web of widely shared principles, institutions and practices that shape decisions at all levels in a given area of earth system governance." Three prominent themes are fragmentation, complexity, and polycentricity. Meanwhile, agency refers to the capacity of public actors and nonstate actors (at local, national, and international levels) to respond to global change and how actors' capacity may be changing in responding to new governance demands created by earth system transformation (Biermann, 2007). Burch et al. (2019) recommend studies on the interplay between architecture and agency to comprehend institutional dynamics, relationships, and change in governance systems.

Democracy and Power Burch et al. (2019, p. 9) believe that democracy promises peaceful means to distribute "political power among citizens and transfer power to their representatives and a means of curtailing the arbitrary exercise of power." Democracy can be understood as a quality of state institutions and as extended to nonstate actors and hybrid forms of governance at local, national, and global levels (Burch et al., 2019). Research on intersections between global, national, and local democracy is necessary because the legitimacy of national representatives in multilateralism depends on the legitimacy of domestic processes for forming collective preferences. Additionally, the relationship between democracy and sustainability has been a focal theme of environmental–political theory amidst the resurgence of populism and authoritarianism, often with anti-environmental views (Burch et al., 2019). It is urgent for "future research in earth system governance to examine whether new conceptions of democracy and power can help make sense of and craft responses" to these circumstances (Burch et al., 2019, p. 8).

Based on Barnett and Duvall (2005, p. 42), power is defined as the "production, in and through social relations, of effects that shape the capacities of actors to determine their circumstances and fate." Research focus on power is required to illuminate how different forms of unequal power are generated and sustained in institutions for global environmental governance. This research focus raises plentiful new research questions, including: "How can interlinkages between accountability, legitimacy, and transparency as key qualities of governance arrangements be conceptualized and realized? Under what conditions does transparency contribute to more accountable and legitimate earth system governance?" (Burch et al., 2019, p. 9).

Justice and Allocation Burch et al. (2019) urgently recommend constructing a systematic analytical, philosophical, and empirical investigation on justice, and its core allocation demand, as it becomes crucial political and social concern. Hence, they consider conceptualizing justice in three dimensions: intergenerational (between generations), international (between states and regions), and intersectional (between groups/categories in society) (Jerneck et al., 2011, see in Burch et al., 2018, p. 61). For ESG, the institutions responsible for distributing such costs and benefits across different generations, nation-states, and different groups in global societies are paramount for achieving justice as allocation. Scholars contend that two other elements are essential to materialize justice as allocation: recognition and representation (Fraser, 2001, see in Burch et al., 2019).

According to Burch et al. (2019), the interplays between justice and allocation research lenses might ignite studies on "what governance types may effectively and ineffectively channel personal, regional, national and global world views towards more sustainable approaches to environmental rights and obligations? What kind of identified trade-offs may occur between the different dimensions of justice and allocation?" (Burch et al., 2019, p. 11).

Anticipation and Imagination The new ESG research directions envisage studies on anticipation and imagination as vital for examining "how to govern … diverse anticipation processes" and "scrutinize how anticipation itself becomes a site of politics and governance" at multiple levels (Burch et al., 2018, p. 61). Based on Gupta (2001, 2011) and Guston (2010), Burch et al. (2019, p. 11) define anticipatory governance as "the evolution of steering mechanisms in the present to govern future earth system transformations in the face of extreme normative and scientific uncertainty and conflict over the very existence, nature and distributive implications of such transformations." Scholars refer to the imagination as an essential means of governance that addresses challenges that appear to be barely solvable using traditional modes of decision-making (Rittel & Webber, 1973; see in Burch et al., 2019, p. 12).

Burch et al. (2019) propose further research on anticipating and imagining diverse futures through modeling, integrated assessments, foresight, and scenario building. An essential research niche is to analyze "how processes of anticipation relating to environmental transformations are themselves being governed, i.e. who is steering them, to what end, and through what deliberative or representative processes" (Burch et al., 2019, p. 12).

Adaptiveness and Reflexivity Burch et al. (2019) envisage studies on adaptiveness and reflexivity are paramount for understanding how societies can navigate change toward global sustainability. According to Biermann et al. (2009, p. 45), adaptiveness refers to "changes made by social groups in response to, or in anticipation of, challenges created through environmental change." Burch et al. (2019) refer to Dryzek (2016), who mentioned ecological reflexivity as "a critical competence for reshaping institutions in the Anthropocene" that consisted of two orders: "first order reflexivity (whereby institutions generate effects that feedback on themselves)

and second-order reflexivity (whereby institutions build a capacity to critically scrutinize their own practices)" (Voß & Kemp, 2006, pp. 6–7). Moreover, the scholars recommend three future research topics related to the nexus of adaptiveness and reflexivity: navigating tensions between stability and flexibility (Biermann, 2007, p. 331), addressing globally networked risks, and reshaping governance systems at all scales within the Anthropocene (Burch et al., 2019, p. 13).

3.3 Early Indications and Development of Earth System Governance in Indonesia

This section informs the detailed context of the study and explains the results of the analysis, with two objectives: (1) to trace and evaluate the intellectual progression of the field of ESG from and within Indonesian academia (country of origins, affiliation, type of article, type of questions and methodology) and (2) to contextualize the theory and framework of ESG in the context of Indonesia and/or Indonesian academia (from four contextual conditions and five research lenses).

3.3.1 Early Indications of ESG Intellectual Progression

The initial analysis with the trace and intellectual progression of ESG from and within Indonesia is shown in Table 3.1. The authors identified that the dominant type of article covered in the Scopus database is a combination of conceptual and empirical papers that are aimed at evaluating certain governance qualities, while in Garuda Portal, they are more diverse. Furthermore, research published in Garuda Portal mainly addresses the type of question on governance through a descriptive approach. The dominant method employed in papers published both in international journals in Scopus and Indonesian journals in Garuda Portal on ESG in Indonesia is mainly the qualitative method. Furthermore, the authors also found that researchers who published articles in international journals in Scopus on ESG and Indonesia are mostly affiliated with institutions outside of Indonesia. While on the opposite, the state-of-the-art of knowledge on ESG in Indonesia is dominated by the university network affiliated to some extent within the outreach of the ESG network.

3.3.2 Contextual Conditions

In this section, the way contextual conditions of ESG are perceived in the existing literature from both Scopus and Garuda Portal databases was analyzed. Four ESG contextual conditions are explained below: transformation, inequality, Anthropocene, and diversity.