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Global Shifts

Business, Politics, and Deforestation in a Changing World Economy

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7 Conclusion

I began this book with an anecdote about a partnership between environmentalists and Ben & Jerry's and the emergence of rainforest marketing in the late 1980s. Rainforest marketing, while commercially successful, was soon discontinued because its conservation effects were deemed too insignificant. Nonetheless, in the absence of strong international and domestic regulation, the idea to leverage the power of global supply chains to eliminate commodity-driven deforestation became the dominant policy approach in the decades that followed. The 2000s saw the creation of industry roundtables in major forest-risk commodity sectors. In the 2010s, these certification-based mechanisms were complemented by a wave of corporate no-deforestation commitments by powerful lead firms in agricultural supply chains.

The starting point for the present analysis was the observation that this supply chain movement has not brought about a global market transformation. The 2010s have been called a "lost decade" for tropical forests (Butler 2019), and many analysts agree that the zero-deforestation movement missed its policy targets by a large margin (Chagas et al. 2018; Climate Focus 2018; Taylor and Streck 2018). To understand the role of supply chain initiatives in reducing deforestation, research into their effectiveness has burgeoned (e.g., Carlson et al. 2018; Garrett et al. 2019; Lambin et al. 2018; Smith et al. 2019; van der Ven, Rothacker, and Cashore 2018), with analysts identifying design deficiencies, low adoption rates, and spillover effects as key explanatory factors. The importance of these immediate causes notwithstanding, this book offers a broader analysis. Beyond traditional concerns with institutional effectiveness, it explores the shifting terrain of sustainability governance in a time of major structural change in the world economy.

Concluding the analysis, this chapter has three objectives. First, it revisits the main findings of this book. Second, it considers implications for

practice. Finally, it outlines emerging global trends and identifies avenues for future research in these areas. I close the chapter with a reflection on the COVID-19 pandemic, and the war in Ukraine and its implications for the politics and governance of sustainability in the world food economy.

A Shifting Terrain: Governing Sustainability in a Changing World Economy

Sustainability emerged as a policy issue on the global governance agenda in the second half of the twentieth century. The 1972 United Nations Conference on the Environment was the first global conference to address the issue. In 1987, the Brundtland Commission defined sustainability as “meeting the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations n.d.), which policymakers translated into an international action agenda at the 1992 Rio Earth Summit. The so-called Agenda 21 included the promotion of sustainable development through trade and making trade and the environment mutually supportive as important program areas (United Nations 1992). Ten years on, the 2002 World Summit on Sustainable Development in Johannesburg, South Africa, focused attention on questions of implementation. Then UN secretary-general Kofi Anan identified the business world and civil society as “vital partners” in advancing “responsible globalization” (United Nations 2006). The endorsement of nonstate actors by the UN and leading states ushered in an era of transnational new governance for sustainability (Abbott 2012b). As shown in chapter 1, also the governance of agriculture and forests was transformed by a wave of private sustainability standards during this period.

These transformations in governance have been accompanied by a new politics of global supply chains (Macdonald 2014), characterized by multiple cleavages. One such cleavage is linked to broader debates about economic globalization, environmental protection, and the appropriate means of regulation. Liberal environmentalism, which emphasizes the reconcilability of economic growth and environmental protection (Bernstein 2002), has long dominated this debate in international and domestic policy arenas. From this perspective, market-based instruments and corporate self-regulation are seen as promising tools to govern sustainability in global agriculture (e.g., Carlson et al. 2017; Smith et al. 2019). In stark contrast to the liberal environmentalist position, the limits-to-growth paradigm emphasizes the existence

of planetary boundaries and the limited carrying capacity of planet Earth (Meadows et al. 1972). To prevent catastrophic environmental change, its proponents call for state intervention and far-reaching economic reforms, such as de-globalization and a return to more localized systems of food production and consumption (e.g., Clapp 2012; Dauvergne 2008). In addition to these high-level controversies, globalizing food supply chains created a new “private politics” as civil society actors started to “knock on firms’ doors” to make their concerns about sustainability heard (see den Hond and de Bakker 2012). New partnerships for sustainability between once-antagonistic actors have emerged, and, ever since, firms and NGOs have been engaged in complex legitimation politics over the design, content, and control of transnational business governance (Bartley 2007; Fransen 2012; Pattberg 2007). However, it would be a mistake to assume that the spheres of private and public authority are distinct or static. Instead, transnational business governance is fuzzy and dynamic, as public and private governors interact in both complementary and conflicting ways (Cashore et al. 2021; Eberlein et al. 2014; Macdonald 2014; Renckens 2020). Another important cleavage in the politics of sustainable production and trade runs along North-South lines. Concerned that the outsourcing of production to low-cost jurisdictions would undercut wages and harm the environment, states and social movement actors in the Global North have demanded environmental and social safeguards for global supply chains, often in the form of private standards. This has been met with opposition from government and industry actors in the Global South, who view such standards as barriers to trade and a threat to their economic development (Thorstensen, Weissinger, and Sun 2015).

These and other issues continue to define the politics and governance of global supply chains in the agriculture sector and other sectors. However, as this book shows, the political dynamics around existing issues are changing and new issues are emerging. In the age of advanced globalization, major structural shifts in the world food economy have far-reaching implications for power, governance, and environmental issues. Surprisingly, however, these trends have long been sidelined in mainstream academic and policy debates on the governance of sustainability in the sector. All too often, scholars and practitioners focus on questions of institutional design and narrowly defined environmental benefits, with too little attention being paid to changing global political economy structures and processes and their consequences.

This book set out to address this gap. With a focus on global shifts in agricultural markets, my goal is to tackle these big picture questions and thus to advance understanding of the deeper causes of ecological crisis and governance failure in a changing world food economy. My contention is that a political economy perspective can help us achieve this goal. Such a perspective does not rely on institutional boundaries as the defining parameters within which effectiveness should be analyzed (Kütting 2005), nor does it limit itself to a narrow assessment of the environmental benefits of transnational business governance. Instead, this line of research casts a much wider analytical net, starting with the incongruence of a worsening ecological crisis despite unprecedented degrees of sustainability governance (Newell 2012, 34–60). However, as discussed in chapter 2, political economy research on transnational business governance remains too disconnected (Graz and Nölke 2008), with little exchange and cross-fertilization between scholars working in the traditions of international political economy, comparative political economy, and GVC analysis. To overcome these divides and to leverage the full spectrum of political economy scholarship, this book puts forward a multilevel framework of analysis. In the empirical chapters of this book, this framework guides a layered analysis into the environmental and institutional consequences of twenty-first-century globalization in the agriculture sector. The following sections synthesize the main findings from the empirical chapters. Based on this, I develop a set of descriptive and causal claims, which begin to reveal the shifting terrain of sustainability governance in the modern world food economy.

It is important to note that these claims are mainly of an inductive nature, which was an important element of the research strategy underlying this book. This means that they are context specific and cannot simply be generalized to other empirical settings. However, there is good reason to believe that they are not unique to the issue area of commodity-driven deforestation and the industries studied in this book. For example, there is ample evidence to suggest that processes of contemporary globalization are driving environmental degradation across a wide range of industries and issue areas (Hopewell 2019; Mol 2011). It also is evident that global market and power shifts are restructuring value chains throughout the world economy, not just in the agriculture sector (Cattaneo, Gereffi, and Staritz 2010; Pasquali, Godfrey, and Nadvi 2020). Therefore, the claims developed here may serve as hypotheses to guide research beyond the empirical scope of this book.

Global-Level Findings

The relationship between environmental degradation and economic globalization is an important theme in the literature on international political economy (Christoff and Eckersley 2013; Dauvergne 2005; Newell 2012). With a focus on the agriculture sector and the problem of commodity-driven deforestation, chapter 3 revisits this relationship in the age of advanced globalization. It shows how global shifts in agricultural markets are reshaping the geography of trade in the sector. The analysis of international trade data reveals a steady shift in trade flows from North-South to South-South for the entire sector. However, the data also show significant variation between individual sectors. While the advanced economies of the Global North continue to be the main importers of commodities like coffee or cocoa, trade flows have shifted strongly for other forest-risk commodities (e.g., palm oil and soy). The global deforestation footprint of large emerging economies has increased accordingly. Between, 2005 and 2017, deforestation risks linked to Chinese and Indian imports of palm oil and soy increased by 159 percent, from 108,000 hectares to 280,000 hectares. In the same period, the combined imports of deforestation linked to these commodities of the EU and the United States fell by 35 percent, from 210,000 hectares to 136,000 hectares (analysis of data from Pendrill, Persson, and Kastner 2020). Another important source of demand is domestic markets. In Indonesia, domestic palm oil consumption grew from less than four MMT in 2002 to over fifteen MMT in 2020 (data from Index Mundi). These figures illustrate that in the current phase of globalization emerging economies are increasingly replacing advanced economies as the main drivers of agricultural expansion and commodity-driven deforestation in these industries. This leads to a first claim: *Driven by fast-growing emerging economies, the link between globalization and environmental degradation remains strong in twenty-first-century agricultural trade.*

The rise of South-South trade also reconfigures dynamics of power and authority in the world food economy, with important consequences for governance. At the global level, chapter 3 explores how the emerging regime complex for forest-risk commodities adapts and changes in response to global power shifts. Tracing the history of regime formation in the sector, it shows how the regime's most established schemes are the product of the politics of late-twentieth-century globalization, dominated by North-South trade and a Western-led development paradigm (Horner and Nadvi 2018;

Pieterse 2012). In this context, private sustainability standards disseminated in the sector's global supply chains, growing the size of "sustainable markets" in the Global North (Willer et al. 2019). However, a problem arises as many of the established transnational schemes remain anchored in this world of late-twentieth-century trade. In the modern world food economy, this creates a growing mismatch between their market coverage and the "new geography of international economic relations" (UNCTAD 2004). This leads to a second claim: *In the age of advanced globalization, there is a growing incongruence between the location of sustainable markets and the new geography of agricultural trade.*

Turning from the question of regime adaptation to the ways in which the overarching governance architecture is shaped by processes of contemporary globalization, the analysis examines how global power shifts contribute to institutional fragmentation, a key variable in the literature on regime effectiveness (Biermann et al. 2009; Zelli and van Asselt 2013). Invoking Abbott and Snidal's (2009) metaphor of a "regulatory standards bargaining game," chapter 3 identifies global market power as an important background condition that shapes bargaining dynamics between demand-side and supply-side actors in the transnational regulatory space. In this context, shifts in end markets have increased Southern actors' "go it alone power" (i.e., their ability to establish a regulatory scheme that meets some or all of their objectives). This finding complements existing work on Southern standards in agricultural value chains, which mainly focuses on domestic factors to explain their emergence (e.g., Schouten and Bitzer 2015; Hospes, van der Valk, and Mheen-Sluijer 2012). It also increases understanding of the conditions under which the interactions between Southern and transnational standards oscillate between conflict and cooperation. This leads to a third claim: *Global power shifts have increased institutional fragmentation in the regime complex for forest-risk commodities.*

Sector-Level Findings

The comparative political economy perspective of chapter 4 allows for a more fine-grained analysis of how shifts in global markets interact with other political economy factors and how this shapes the authority of transnational business governance across commodity sectors and over time. In the major forest-risk commodity sectors, the proportion of global production that is certified by third-party certification schemes, the most robust

private governance institutions (Bloomfield 2017, 16–18), is highest for timber (13 percent), followed by palm oil (11 percent). Conversely, with 1.5 percent and less than 1 percent, respectively, certification uptake remains very low in the soy and beef sectors. The uptake of company-level deforestation commitments largely mirrors this cross-sectoral distribution. This shows that in none of the major forest-risk commodities are private regulatory programs currently close to attaining a market share that would allow them to transform global markets, as envisioned by their theory of change (WWF 2012). The analysis also reveals that the uptake of the most advanced private regulatory schemes (e.g., the RSPO) has stagnated in recent years. This leads to a fourth claim: *Transnational business governance has progressed differently across forest-risk commodity sectors, but market uptake remains too low overall.*

The comparative political economy analysis explains why transnational business governance has been at least moderately successful in some sectors, whereas it gained hardly any uptake in others. Comparing the palm oil and soy sectors, chapter 4 shows how contemporary globalization is reconfiguring the political economies in both industries, but to different degrees. In the soy sector, the volume of the Brazil-China trade rose from 6.2 MMT in 2003 to 61 MMT in 2020 (+884 percent) (analysis of data from ITC n.d.). The trade in palm oil also experienced significant shifts. However, unlike in the soy sector, Global North countries retained more of their market share. Although important, global market power also is not the only factor that matters. The analysis reveals how European actors retained substantial agenda-setting power in the palm oil industry due to the interplay of several market and nonmarket conditions, which reinforced one another. Specifically, private regulators benefited from a high level of support from global buyers, a powerful transnational advocacy network, and endorsement from state actors in Europe. This allowed the RSPO to diffuse its standards in the industry's North-South supply chain. In comparison, with less support from European firms, civil society, and state actors, the almost identical RTRS failed to achieve the same level of success. This leads to a fifth claim: *The interplay of political economy forces emanating from advanced economies allowed transnational business governance to achieve moderate coverage in some forest-risk commodity sectors but less favorable conditions have limited uptake in others.*

The analysis of changes in the political economy context of the RSPO and the RTRS also highlights some important commonalities between the two sectors. Confronted with global market shifts, a lack of support from emerging

market buyers, and antagonism from powerful state and industry actors in the producer countries, private regulators in both industries saw themselves confronted with an increasingly challenging environment. As previously mentioned, favorable conditions allowed the RSPO to achieve large-scale coverage in the European market. However, political economy conditions have been very challenging for both schemes in fast-growing regional and domestic markets in the Global South. This leads to a sixth claim: *The scope conditions of transnational business governance have become less favorable across forest-risk commodity sectors, limiting its global coverage and thus impact.*

Value Chain-Level Findings

Scholars of transnational business governance often link its effectiveness to the ways in which sustainability standards disseminate through GVCs. Chapter 5 draws on conceptual innovations in the GVC literature on polycentric trade (Horner and Nadvi 2018) and multipolar governance (Ponte 2014) to explore the evolutionary dynamics of the value chains of the “post-Washington Consensus world” (Gereffi 2014). Global shifts in trade and the role of emerging economies as new sources of demand are hypothesized to have dramatic consequences for value chain organization, governance, and upgrading (Gereffi 2014). With a focus on the palm oil supply chain, a front-runner industry in the zero-deforestation supply chain movement (Donofrio, Leonard, and Rothrock 2017), chapter 5 examines these consequences. The analysis reveals that the palm oil value chain does not resemble the buyer-driven model that is common to other tropical commodity sectors, such as coffee. For example, Unilever, the world’s largest palm oil buyer, accounts for only 4 percent of global demand (Pacheco et al. 2017, 13), whereas Nestlé controls over 20 percent of the global coffee retail market (Grabs 2020a, 10). Instead, corporate concentration is highest in the refining (upstream) and trading segments (midstream) of the palm oil supply chain, making it a producer- and trader-driven chain. Another defining feature is its distinct polycentric structure. Shifts in the geography of palm oil trade have been accompanied by a relocation of its production networks, with regional and domestic supply chains and the actors that control them gaining in importance (e.g., the biofuel industry in Indonesia). This leads to a seventh claim: *Global shifts in the geography of trade and consumption are reconfiguring the structure of forest-risk supply chains, with important implications for power and governance in these chains.*

This restructuring of value chains has important implications for the distribution of corporate power in the world food economy and hence for any “theory of change” (WWF 2012) attempting to use the supply chain “as a conduit for influencing the social and environmental conditions of production and consumption” (Bush et al. 2015, 13). The GVC literature has long focused on the role of Northern lead firms as the main drivers of environmental upgrading processes (Jeppesen and Hansen 2004; Khattak and Stringer 2017; Poulsen, Ponte, and Lister 2016). However, in the post-Washington Consensus World the limits of “unipolar” big-brand sustainability are increasingly clear (see Dauvergne and Lister 2012), raising questions about the potential of “multipolar” governance. Through value chain mapping, chapter 5 identifies the main drivers of environmental upgrading in the industry’s global, regional, and domestic production networks. This includes governance actors that are private and public, internal, and external, and linked to different positions in the chain. This leads to an eighth claim: *In the context of polycentric trade, the governance of sustainability in forest-risk supply chains is increasingly multipolar in nature, comprising global, regional, and domestic drivers.*

The in-depth investigation of multipolar governance in the palm oil value chain shows how standard-driven environmental upgrading is reaching a point of market transformation in the industry’s North-South network, with close to 90 percent of Europe’s palm oil imports verified by private sustainability standards (IDH and EPOA 2020). Plans for mandatory due diligence regulation for deforestation-free products in the European Union could further “harden” corporate accountability in this supply chain setting (Moser and Leipold 2021; Schilling-Vacaflor and Lenschow 2021). However, important gaps in the on-the-ground implementation of sustainability standards persist, particularly in Indonesia’s fast-expanding smallholder sector. Certification programs have long struggled to include small-scale producers in their systems (Brandi et al. 2015) and analysts fear that the EU’s plans for full traceability in its no-deforestation regulation could cut them out entirely from European supply chains, with negative livelihood implications for this group of vulnerable producers (ISEAL 2022). In comparison to Europe, the regulatory agenda on sustainability in the industry’s largest regional markets (China and India) remains at an early stage. The emergence of a public policy agenda on green supply chains and the creation of new emerging market-centered sustainability schemes are promising recent developments. However, constrained by bureaucratic politics and other factors, regulatory

coalitions powerful enough to steer these supply chains toward sustainable sourcing have yet to emerge. There is a different dynamic in the producer countries. Here, powerful regulatory coalitions have emerged to take back control of the industry's sustainability agenda. In principle, stronger public regulation in the producer countries is to be desired. Based on hard law, national sustainability schemes are mandatory for all producers in a country. However, in the case of the ISPO program, weak regulatory capacity and a lack of global market acceptance undermine its effectiveness (Hidayat, Offermans, and Glasbergen 2018). Moreover, the interactions between domestic and transnational regulatory coalitions in this industry remain characterized by disconnects and antagonisms between transnational private and domestic public governance (Pacheco et al. 2018). This leads to a ninth claim: *Global, regional, and domestic drivers are unevenly developed and disconnects and antagonisms between demand-side and supply-side regulatory coalitions undermine multi-polar governance in forest-risk supply chains.*

Is Place-Based Governance the Answer?

As part of a forward-looking research agenda, chapter 6 explores the opportunities and challenges of newly emerging, place-based programs to govern agricultural commodity production in Brazil and Indonesia. These so-called jurisdictional programs differ from traditional supply chain initiatives through their scale, scope, and governance. They focus on entire jurisdictions as opposed to individual supply chains, pursue integrated sustainable development agendas, and are led by local change coalitions. Exploring the approach and its emerging features, chapter 6 identifies three pathways through which jurisdictional programs can strengthen natural resource governance at the supply side of global, regional, and domestic supply chains. First, through a high level of local government involvement, jurisdictional programs create opportunities to harness the power of public authority to scale sustainability in the producing countries. Second, as experimental arenas, jurisdictional programs create opportunities for policy coordination to enhance institutional complementarities and resolve disconnects between transnational and domestic governance actors (Nepstad et al. 2013; Pacheco et al. 2018). Third, a focus on local communities and indigenous people in the rhetoric and design of these programs creates opportunities to include these otherwise often marginalized actors (Hovani et al. 2018, 31). While these features show

that jurisdictional programs have great potential to drive innovations in natural resource governance, the approach is not without challenges. One of these challenges is answered by this book's analysis of global market shifts, which casts a critical light on recent efforts by sustainability practitioners to use "jurisdictional sourcing" (Boshoven et al. 2021) and "jurisdictional certification" (RSPO 2021) to generate "global value propositions" for local stakeholders. This and other developments suggest that transnational and local elites are compromising on a conservative agenda for these programs. Addressing the challenges identified in chapter 6, will be important to make the jurisdictional approach a more progressive and promising governance project.

Implications for Practice

As global markets shift, what are the implications for policy and practice? Based on the theoretical and empirical insights of this book, this section offers some reflections for practitioners. My main point concerns the need to critically rethink theories of change in the age of advanced globalization. Practitioners in particular need to overcome deeply entrenched assumptions about North-South dependencies and power and interest constellations, which are increasingly at odds with the realities of the modern world economy. I also discuss the value of political economy analysis and how it can help policymakers and practitioners develop a better understanding of global trends and their environmental and institutional consequences.

As the analysis of this book has shown, major structural shifts in the world food economy have important implications for power, governance, and sustainability. Surprisingly, however, these developments remain at the margins of policy debates on the use of supply chain initiatives and other trade instruments to advance environmental and social policy objectives in the producing countries. One example discussed at length in this book is the market transformation strategy of the World Wide Fund for Nature (WWF 2012). Based on faulty assumptions about the structure and governance of agricultural value chains, it greatly overestimates the power of (Northern) big-brand companies in these industries. Despite growing evidence of their faulty nature, many of these assumptions remain central to practitioners' thinking on the ways in which global supply chains can be leveraged to provide economic incentives to local stakeholders. As described in the previous section, a recent example is proposals to use jurisdictional sourcing and

jurisdictional certification to generate global value propositions for rural jurisdictions to produce deforestation-free commodities. Beyond supply chain initiatives, practitioners are calling on government actors in advanced economies for “getting the incentives right” (Ozinga 2020). Trade incentives should be used as leverage to move producer countries toward sustainability. Such agreements may work in some sectors where North-South trade dependencies remain strong. For example, in the cocoa sector, the EU remains in a powerful position. It is the world’s largest importer of cocoa, and many of the leading chocolate companies are headquartered in Europe (Fern 2020). However, in the post-Washington Consensus World, this is the exception and not the rule. Policymakers and practitioners in the Global North need to be realistic about their leverage and ability to provide economic incentives to government and industry actors in the Global South.

Political economy analysis can help policymakers and practitioners better understand the context of their planned interventions. Going beyond a narrow focus on policy design and technoeconomic environmental impact assessments, the framework developed in this book offers powerful analytical tools to better understand global trends, differences in domestic and sectoral political economies, and the structure and governance of supply chains. In this regard, the lens of international political economy focuses on the deeper causes of ecological crises by revealing the global political, economic, and historical forces that contribute to their emergence and persistence. This “big picture” perspective is of key importance, if conservation interventions are meant to achieve more than merely addressing a problem’s symptoms. Moreover, the comparative political economy perspective allows for a structured analysis of differences in the “favorability” of a sector or country for a planned governance intervention. To give a concrete example, the Tropical Forest Alliance recently published a “Collective Action Agenda” to accelerate the shift to sustainable agriculture and remove deforestation from commodity production (Tropical Forest Alliance 2020). The document envisages a broad coalition of actors, including supply chain actors, civil society organization, producer country governments, demand-side country governments, and the financial sector. Similarly, others have called for a “smart mix” of measures to achieve deforestation-free industries (Fripp and Brack 2020). However, when and where are such coalitions likely to form? The method of comparative political economy can help practitioners answer these questions by identifying enabling and constraining

conditions, and showing how these vary across contexts and over time. The framework developed in this book also allows for a better understanding of the economic networks through which sustainability governance disseminates. As shown above, global supply chains remain central to practitioners' theories of change. However, these theories are often based on faulty assumptions about the structure and governance of value chains, and how supply chains are evolving in the current phase of globalization.

Emerging Global Trends and Future Research

This book examines the consequences of global economic shifts for the governance and politics of sustainability in the agriculture sector. However, economic shifts from North to South are not the only large-scale trend transforming the world economy. There are other economic, technological, and normative trends that call for scholarly attention, including the rise of green finance, new technologies, and new normative discourses. In the remainder of this section, I discuss some of these trends and suggest avenues for future research in these areas. Sustainability in global agriculture is my reference point in this discussion. However, the themes explored in this section are of relevance to other issue areas as well.

Green Private Investment

International climate finance was meant to be a game changer for tropical forests. However, analysts criticize that it has been "too low, too slow, and too encumbered by bureaucratic processes" (Seymour and Busch 2016, 390). In recent years, shifts in global financial markets have created hopes that private investors could help fill the gap. Indeed, major private investors are beginning to recognize climate risks tied to deforestation and are adopting policies for investing in companies linked to forest-risk supply chains. This includes BlackRock, the world's largest asset manager, which adopted a new investment stewardship approach for its engagement with agribusiness corporations. The policy outlines how the company will incorporate sustainable agricultural practices in its board oversight functions (BlackRock 2020). Similarly, Rabobank, BNP Paribas, and other major banks require agribusiness companies to adopt no-deforestation policies for their supply chains (BNP Paribas 2019; Rabobank 2018). Private and public investors have also made collective statements calling on companies to act on tropical deforestation.

The biggest yet brings together 251 investment organizations, representing approximately US\$18 trillion in globally managed assets (Ceres 2019). In response to these developments, global financial flows are increasingly redirected to “green assets.” According to the Global Sustainable Investment Alliance (2020), private green investments grew from US\$23 billion to over US\$35 billion between 2016 and 2020.

These figures show that green private investment is a large-scale trend in the global financial system. However, it remains poorly understood. One area for future research is the contentious politics of green private investment (Ayling and Gunningham 2017). Recent years saw the formation of new transnational advocacy networks, such as BlackRock’s Big Problem.¹ Important questions for scholars to answer in this area include: What are the characteristics and strategies employed by these networks? Under what conditions can advocacy groups achieve policy change in some of the world’s most powerful and secretive companies? Another area for future research concerns the ways in which green investment policies disseminate through global supply chains. What governance systems are put in place? How are these policies received and implemented by supply chain actors? What are the impacts of these policies on the ground? Finally, with attention increasingly focused on “green investment,” what is the political economy of “brown investment.” Public and private investors around the world continue to invest large sums of money into businesses that drive deforestation (Forests & Finance 2021). Why do these practices persist, and how can barriers to reform be overcome?

Technological Change

Technological change creates opportunities but also challenges for sustainability. Techno-optimists argue that so-called Smart Earth technologies hold significant potential to transform environmental governance (Bakker and Ritts 2018). Derived from the Smart City concept (Zubizarreta, Seravalli, and Arrizabalaga 2016), Smart Earth deploys new information and communication technologies to monitor, analyze, and increasingly predict socioecological processes. This includes advanced satellite technology, “internet of things” applications (e.g., environmental sensor networks), and other emerging technologies (e.g., artificial intelligence). A reduction in the cost of cloud computing, improved digital infrastructure, and new machine-learning tools is driving the proliferation of these technologies around the world. In the governance of tropical deforestation, Smart Earth technologies are applied in multiple settings. Most advanced is the use of remote sensing to track forest

cover changes in almost real time through digital platforms such as Global Forest Watch.² Also, the use of artificial intelligence interventions is increasingly widespread. Applications include new technology start-ups such as Satelligence³ and Overstory,⁴ which develop machine-learning algorithms to provide companies with customized tools to remotely monitor deforestation risks in their supply chains. Other applications include a new program by the Sustainable Trade Initiative that uses artificial intelligence to help smallholders manage the challenges of water management (IDH 2021a). Used by companies to improve the transparency of their supply chain tracking systems, blockchain is another nascent technology (Ledger Insights 2020).

As these examples illustrate, the use of Smart Earth technologies is beginning to transform environmental governance in the world food economy. While some scholars claim these technologies have great potential (Bakker and Ritts 2018), others caution against too much techno-optimism (Arts, van der Wal, and Adams 2015; Dauvergne 2020; Gale, Ascui, and Lovell 2017; Möller 2020). For example, Auld et al. (2010) remind us that technologies influence problem definitions (what is measured matters) and therefore the choice of policy instruments. A focus on technological fixes may thus divert attention away from the underlying root causes of a problem (Huesemann and Huesemann 2011). Similarly, others warn that the microlevel improvements from artificial intelligence will not add up to macrolevel solutions for the negative environmental consequences of global supply chains (Dauvergne 2020). As artificial intelligence and other technologies continue to advance, the debate between techno-optimists and techno-pessimists will remain very important for scholars of transnational business governance in the years to come.

New Normative Discourses

Global discourses on justice and decoloniality are another important development. While concerns with institutional effectiveness have long been a key focus of mainstream governance research, Biermann, Dirth, and Kalfagianni (2020) observe a shift in the debate toward the normative foundations of global environmental governance. This “justice turn” in environmental politics is driven by powerful social movements, notably climate activism but also indigenous rights groups. While scholarship on environmental justice has a rich intellectual tradition (Mohai, Pellow, and Roberts 2009), scholars of earth system governance argue that this debate requires a new conceptual framing in the age of the Anthropocene. They propose the concept of “planetary justice” to interrogate the justice

implications of profound transformations of the earth system. An important focus of this research agenda is how justice issues are addressed in global environmental institutions (Biermann and Kalfagianni 2020). Connecting to the emerging research agenda on planetary justice, scholars of transnational business governance could use the framework developed by Biermann and Kalfagianni to interrogate the political discourses, programs, and outcomes of major private governance institutions, such as the Forest Stewardship Council, the RTRS, and the Fairtrade Labelling Organization.

In addition to global justice concerns, the Black Lives Matter movement has reinvigorated global discussions on racism and coloniality. These debates are also taking place in the domain of environmental politics, including the governance of sustainable development, biodiversity, and land (DePuy et al. 2021; Hope 2020). As highlighted throughout this book, colonialism and its legacies loom large in global agriculture and its governance (Clapp 2020, 24–57). In Africa, South America, and Asia, European colonial projects included the development export-oriented agricultural industries to supply metropolitan Europe with cheap natural resources and exotic goods. The expansion of these industries in the modern era remains deeply entangled with the history of postcolonial state formation and its dominant development paradigms. Colonial histories and modernist development thinking are thus woven into the fabric of these industries and their institutions. As these themes are brought to the foreground in broader societal discourses on colonialism and racism, students of transnational business governance should use this opportunity to engage more deeply with the colonial legacy of the industries they study. Confronting colonial legacies also creates opportunities to critically interrogate the modernist ontology of current systems of environmental governance. This may open up intellectual space to consider alternatives, including indigenous ideas about human-nature relationships (DePuy et al. 2021). Making these ontologies visible could help imagine institutions that are more attuned to the challenges posed by the Anthropocene, in which old dichotomies that portray the natural world as being distinct from the world of humans are no longer tenable.

Concluding Thoughts

As I finish this book, the world economy is shaken by the COVID-19 pandemic and the war in Ukraine. The pandemic has triggered a global public health emergency on a scale unseen since the Spanish flu outbreak of 1918.

With lockdown measures and travel restrictions heavily disrupting supply chains around the world, the pandemic has caused an economic shock even greater than that of the 2008 global financial crisis. As COVID-19 restrictions are finally lifted in large parts of the world, the war in Ukraine is shaping up to become the largest military conflict in Europe since World War II, with major geopolitical and global economic repercussions. In concluding this book, I would like to offer some reflections on the economic, environmental, and political consequences of these events for the world food economy.

The 2008 financial crisis contributed to a gravitational shift in the global economy from North to South, as emerging economies were less affected by the crisis (Staritz, Gereffi, and Cattaneo 2011). Strong demand for natural resources from fast-growing emerging economies fueled the tropical commodity boom analyzed in this book. How will the COVID-19 pandemic and the war in Ukraine affect this trend? Global economic data from the first year of the pandemic suggests that the coronavirus recession led to divergence between advanced and emerging economies as well as within the group of the BRICS economies (Brazil, Russia, India, China, South Africa) (Brennan 2020). As in the 2008 financial crisis, China was initially less affected by the coronavirus recession than the major advanced economies, further accelerating the country's global economic rise (BBC 2020). In the first phase of the pandemic, China also did better than the other BRICS economies, which could suffer from "long economic Covid" (Wolf 2020), as low vaccinations rates and overburdened public health systems hinder their recovery. However, the medium- to long-term economic consequences of the crisis remain uncertain. China's strict zero-COVID strategy, which saw Shanghai and other major economic centers put under lockdown at a time when many other countries finally lifted their restrictions, could undo some of its economic success early in the crisis. Moreover, as the world recovers from the coronavirus recession, the war in Ukraine is sending new shockwaves through the global economy, including markets for agricultural commodities. Ukraine and the Russian Federation are among the world's top exporters of wheat, maize, rapeseed, sunflower seeds, and sunflower oil. The FAO projects that the conflict will lead to a significant reduction in cereal and oilseed exports by the two countries, with major repercussions for global agricultural markets and food security (FAO 2022). As countries around the world scramble to find alternative suppliers to meet their demand for food, feed, and vegetable oil, world market prices for soft commodities have risen strongly. This includes tropical oil crops, such as palm oil, which saw its price increase

by over 60 percent between April 2021 and April 2022 (Trading Economics 2021).

What are the consequences of these global crises for sustainability? There is evidence that the COVID pandemic has undermined conservation efforts around the world, with tropical countries being particularly hard hit. Brancaliona et al. (2020) show that deforestation alerts across the global tropics nearly doubled during the first months of the pandemic. Exploring the links between COVID-19 and tropical deforestation, they describe how deforestation drivers can change rapidly during periods of profound sociopolitical-economic transformations. The pandemic's immediate consequences include opportunistic forest clearing during lockdown periods. As global agricultural markets are shaken up by the war in Ukraine, fast-rising prices for soft commodities could become another driver of deforestation. In response to strong global demand, crisis-ridden tropical countries could further expand their agricultural industries, which are often the most important foreign exchange earners for these countries. There also are fears that the pandemic and the war in Ukraine could undo the progress toward the United Nations Sustainable Development Goals (FAO 2022; United Nations 2021). Among other challenges, food security is a major concern. In the first year of the pandemic, the number of people facing hunger increased by 118 million, making the achievement of the goal to eradicate world hunger and malnutrition in all its forms by 2030 increasingly unlikely (FAO et al. 2021). One reason for the increase is the disruption of food supply chains during lockdowns (Reardon, Bellemare, and Zilberman 2020). The war in Ukraine has caused another shock to global food supply, creating major risks for countries like Eritrea, Egypt, Lebanon, and Somalia, which heavily depend on cereal exports from Ukraine and the Russian Federation (FAO 2022, 10). The two crises thus expose the vulnerabilities of a world food system, in which developing countries are increasingly dependent on the seamless functioning of global supply chains (WFP 2020).

Finally, what are consequences for regulation and governance? The short-term consequences of the pandemic included the disruption of public and private regulatory efforts through lockdown measures and travel restrictions. Researching the response of private regulatory programs to the pandemic, Auld and Renckens (2021) find that ad hoc changes in audit policies, the use of remote audits, and limited transparency exacerbated existing barriers for Global South actors in these programs. There also is evidence to suggest that the pandemic created a window of opportunity to roll back

public environmental regulation. One example comes from Brazil, where the Minister of the Environment suggested that the pandemic offers a distraction during which the government should “run the cattle herd through the Amazon” (Gonzales 2020). While the pandemic’s short-term consequences become increasingly clear, its medium- to long-term implications remain uncertain. For transnational business governance, Auld and Renckens (2021) speculate about two scenarios. First, the pandemic could accelerate existing evolutionary dynamics among private sustainability schemes, as they expand their nonregulatory activities (e.g., consultancy, capacity building, advocacy) (also see Fransen 2018). Second, market-driven regulatory programs could face a harder time if supply chains shorten, and trade does not return to former levels. At a broader level, the pandemic and the war in Ukraine could have both positive and negative consequences for environmental policy. There is a risk that in a moment of economic crisis government and industry actors will renege on their sustainability commitments. In response to the crisis in Ukraine, Iceland, the British retail giant, announced with “huge regret” a U-turn on its no-palm oil policy (Butler 2022), and the EU is conducting a review of its sustainable food strategy after a concerted push against planned reforms by national governments and the agriculture industry (Bounds 2022). However, in a more optimistic scenario, these crises could also open a window of opportunity to reform what some activists describe as a “very broken food system” (Greenpeace 2022).

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