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Business and Human Rights

From Knowledge to Responsibility

by Alberto Lanzavecchia

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P A D O V A U N I V E R S I T Y P R E S S



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Business and Human Rights

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Alberto Lanzavecchia

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Minervae,
quae filo sapientiae Theseum per labyrinthum duxit,
ne in tenebris erraret,
ne a monstro vinceretur,
ne viam domum oblivisceetur.
Omnibus Theseis huius aetatis,
qui adhuc labyrinthum intrant
et lucem quaerunt.

Editorial Note on the Use of Artificial Intelligence in the Preparation of This Volume

The editorial preparation of this volume — Business and Human Rights (Padova University Press) — was supported by Lucrez-IA, an AI assistant developed by Anthropic (Claude model) and deployed by the Digital Learning e Multimedia Office of the University of Padova. The name Lucrez-IA pays tribute to Elena Lucrezia Cornaro Piscopia, the first woman to receive a doctoral degree, awarded by the University of Padova in 1678.

Lucrez-IA was used exclusively for the following editorial functions:

1. **Consistency check** — Systematic verification of structural, stylistic, and terminological consistency across twelve chapters.
2. **British English proof-editing** — Systematic audit of British English spelling, grammar, and register.
3. **APA 7th style verification** — Verification and standardisation of in-text citations and in the Consolidated Bibliography.
4. **Bridge passages** — Drafting and verification of bridge passages connecting chapters.
5. **Structural elements** — Assistance in drafting and standardising Learning Objectives, Guiding Questions (Box 1), Key Facts (Box 2), Working Glossary (Box 3), List of Abbreviations, and the volume's Cumulative Glossary.

Note on Bibliographic Presentation

In the interest of readability and to avoid redundancy across a twelve-chapter volume, bibliographic references are not listed at the end of each chapter. A single consolidated bibliography of all 400 works cited

across the volume is provided at the end, ordered alphabetically by first author's surname. Where a work is cited in multiple chapters, it appears in the consolidated bibliography once only.

Scope and limitations

All substantive analytical, interpretive, and argumentative choices are the exclusive responsibility of the human authors and the volume editor. Lucrez-IA did not generate original research, did not produce citations from sources it had not been provided with, and did not introduce factual claims without attribution to sources verified by the authors.

Acknowledgements

My first thanks go to students. Students at every level of education, but above all to those at university: without students, there is no university; without a free university, there is no progress.

Over the years, I have come to recognise three kinds of students: those who see university primarily as a means to earn — as much as possible; those who are driven by the desire to know; and those who want to use knowledge as a driver for positive change in the world around them — in society and in the environment. I would not be honest if I did not admit that it is this third kind who make this work genuinely worthwhile.

If I have been able to engage seriously with both the analysis of profit generation — and therefore of corporate value — and the assessment of the impacts of business activity on people and the planet, it is because I have not simply *grown* older over the past few decades: I have, I hope, *developed*. This development has unfolded in three phases, each of which is reflected in the pages of this volume.

In the first phase, as a corporate finance specialist, my focus was on profit maximisation, value creation, and executive remuneration systems tied to shareholder returns. In the second phase, I came to understand that there are, in the end, only two kinds of companies: those that create or destroy the present and the future for those who will come after us. In the spirit of the Brundtland definition of sustainable development — *those who follow us shall inherit the world as it was handed to us* — this awareness led me toward sustainable finance, ESG evaluation, and purpose-driven or ethical finance: directing capital toward companies that genuinely improve the existing state of things, whether through measurable impact or through ethical vision. In the third phase, I arrived at what now seems to me the most important insight of all: that knowledge generates responsibility. Thought — Yang, the Sun, light, active — must be followed by action — Yin, the Moon, reflective,

receptive. To understand how the capitalist system truly operates, where it generates its hidden impacts on the biosphere, which communities it kills, forcibly displaces, or renders unable to live with dignity, one must think as an economic and political geographer as much as a finance scholar. Action must be guided — within what this volume calls the *corridor of possibilities*, a concept the reader will encounter and, I hope, carry forward. And it must be collective: the forces, objectives, and actions of those who dissent from — and *resist* — this dominant mode of governing people and the planet must be brought together. Free science and a free university can lift the veil of ignorance and hold open the possibility that truth prevails over wrongdoing.

For these reasons, I want to thank those who shaped my *development*. **Fabio Santorum** and **Eugenio Pavarani** taught me corporate finance, value creation, and the pursuit of above-normal returns. **Giulio Tagliavini** connected me to ethical finance — the insight that finance is not an end but a means: give it a purpose, a human or environmental objective to pursue, and it becomes a tool for mobilising the resources that purpose requires. **Marco Mascia**, the **University Centre for Human Rights**, and its doctoral programme — which I have had the honour of coordinating for two terms — revealed to me the human dimension of economic impacts: the voices of those who have no voice, and peace understood not as an absence of conflict but as a process toward harmony with what surrounds us. The geographers **Mau-ro Varotto**, **Massimo De Marchi**, and the entire **Jean Monnet Centre of Excellence on Climate Justice** — and later Just Transition — have been indispensable companions in this journey. So too have the doctoral researchers whose dissertations I have had the honour and pleasure of supervising and discussing: **Alberto Diantini**, **Francesca Peroni**, **Satı Elifcan Özbek**, and **Francesco Facchinelli** — from each of you I have learnt what academic activism looks like in practice, and what it means to act on the principle of responsibility rather than merely to teach it.

To the members, volunteers, and supporters of **L'Osteria Volante ETS**: thank you for opening my eyes — long before this volume took shape — to the limits of *growth*. It was a volunteer who placed in my hands Jorgen Randers' *2052: A Global Forecast for the Next Forty Years* — written in 2012, forty years after the original Meadows report to the Club of Rome, and in many ways more unsettling, because the time for comfortable postponement had run out. From Randers I went back to Meadows, and then forward again: that journey is quietly present throughout this volume. These are not historical documents. They are a standing indictment of a *development* model that this volume attempts, in its own way, to put on trial. And thank you for

drawing me, actively and passively, into an operational model that genuinely combines the university's third mission with the needs of civil society: ideas, projects, and the will to realise them in the service of the common good and human rights.

A particular — if involuntary — acknowledgement is owed to the person who has chosen, since 2020, to operate under the pseudonym of **Paolo Carraro**. Through a sustained campaign of defamatory emails directed at me and at the activists of L'Osteria Volante, this individual has addressed, over the years, a remarkable list of recipients: bishops and rectors, regional councils and institutional bodies, individuals and organisations at every level and in every field. The intention, presumably, was to isolate and discredit. The effect has been rather different. To see all those names gathered together — the full map of relationships built, over years, through commitment and perseverance — is to understand something that the concluding pages of this volume also argue: that the people who think differently from the mainstream, who *resist the dominant logic* quietly and persistently, are not isolated. They are a web. And a web, as any ecologist will tell you, is one of the most resilient structures in nature.

To close the circle: to the **Department of Political Science, Legal Studies and International Relations of the University of Padova**, for offering and guaranteeing academic freedom in teaching within the Master's degree programme in *Human Rights and Multi-Level Governance*, and for providing the financial support that has made this volume freely and openly available in Open Access. And to the **Department of Civil, Environmental and Architectural Engineering of the University of Padova**, whose contribution has supported the extension of this volume's analytical reach to the intersection of business, human rights, and climate change — making it a resource for the Erasmus Mundus Joint Master on *Climate Change and Diversity: Sustainable Territorial Development* (CCD-STeDe), EACEA, grant number 101082398. That a volume rooted in the humanities and social sciences should find its way into an engineering faculty's curriculum is, the Author believes, evidence of precisely the transdisciplinary necessity that Chapter 1 argues is not a methodological preference but a substantive requirement.

And finally, this volume owes more than is customary to **Sara Stojkoska**, student and curricular intern in the Master's degree programme in *Human Rights and Multi-Level Governance*. Sara is not yet a graduate, and that is precisely the point: as a student reader, she brought to this volume what no specialist reviewer could have offered — the perspective of the person this book is written for. Our collaboration was anything but linear. Sara would

read a chapter, then tell me where it landed and where it went dark; I would attempt a set of guiding questions, she would push back, I would revise — and so on, in rounds that I can only describe as co-creation. It is not common practice to have students as co-creators of an academic volume. It should be.

To all of you: thank you. Each of you is a single ring in an endless chain.

Alberto Lanzavecchia
University of Padova
Cavalese (Italy), 1st June 2026.

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Chapter 1

Introduction

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This introductory chapter sets out the purpose, structure, and intellectual commitments of the volume. It argues that the relationship between business activity and human rights cannot be understood through any single disciplinary lens, and that the transdisciplinary approach adopted here — integrating insights from natural science, economics, law, and political science into a unified analytical framework — is not a methodological preference but a substantive necessity. The chapter introduces the volume's two-part structure: Part I, which establishes the theoretical and normative frame through the Doughnut Economics model, international human rights law, and EU regulatory frameworks; and Part II, which applies that frame to a series of sectoral case studies documenting structural, persistent violations of human and environmental rights. It situates the volume within the tradition of academic activism — scholarship that does not merely describe injustice but commits itself to its exposure and, where possible, its remedy.

Keywords: business and human rights; transdisciplinarity; academic activism; corporate accountability; sustainable business; Doughnut Economics.

Note for the Reader

This chapter serves as the entry point to the volume — an orientation, not a summary. It explains what this book is, why it was written, who it is written for, and what it asks of its readers. It does not rehearse the argu-

ments developed in the chapters that follow; it explains the logic that connects them.

Each chapter in this volume follows a shared pedagogical structure designed to support independent learning and classroom use. Each opens with a set of *Learning Objectives* (five items in imperative form), which identify the analytical competencies the chapter develops. *Box 1 – Guiding Questions* presents five questions that frame the chapter’s analytical inquiry and may serve as starting points for seminar discussion. *Box 2 – Key Facts* provides a concise set of seven to nine data points anchoring the chapter’s empirical dimension. *Box 3 – Working Glossary* defines the key terms introduced in the chapter in a standardised two-column format. This introductory chapter follows the same structure. Its Learning Objectives is anchored to the contents of this chapter – the analytical framework, the intellectual commitments, and the structural logic that organise the volume – rather than to a specific sectoral argument as in the remaining chapters. Its Key Facts refer to the volume as a whole. This introductory chapter does not include a Working Glossary: its function is to orient the reader to the volume rather than to introduce a specific set of technical terms. The cumulative glossary and the full list of established arguments across all twelve chapters are available in the editorial materials accompanying this volume.

Readers who prefer to begin with the substantive analysis may proceed directly to Chapter 2 and return here later. Those who wish to understand the intellectual and ethical commitments that shape this volume are invited to begin here.

Learning Objectives

After reading this chapter, you will be able to:
Explain the transdisciplinary analytical framework adopted in this volume and articulate why the relationship between business activity and human rights cannot be adequately understood through any single disciplinary lens.
Identify the structural logic of corporate cost externalisation and its relationship to the systematic violation of human and environmental rights documented across the volume’s case studies.
Describe the two-part structure of the volume – the theoretical and normative frame established in Part I and its application to sectoral case studies in Part II – and the analytical connections between them.
Critically evaluate the distinction between corporate conduct that is legally permissible and conduct that is consistent with respect for human dignity, as the foundational question of the field of business and human rights.
Situate the volume within the tradition of academic activism and articulate the ethical proposition that conscious knowledge of injustice carries with it a responsibility to act against it

1. Why This Book, and Why Now

This is not a book about sustainable business. It is a book about the costs that unsustainable business imposes on people and the planet — costs that do not appear on balance sheets, that are rarely counted in measures of economic growth, and that are disproportionately borne by those who had the least say in producing them.

The distinction matters. The literature on sustainable business is large and growing. Much of it is useful. But a significant portion of it — produced by consultancies, certification bodies, and corporations themselves — is structured around the question of how businesses can continue to operate profitably while generating less harm. This volume asks a different question: why does the harm persist, who benefits from its persistence, and what would it take to stop it?

These are not comfortable questions. They implicate not only the corporations examined in the case studies that constitute Part II of this volume, but the economic and political systems that enable their conduct, the regulatory frameworks that have proven insufficient to constrain it, and the consumers and investors whose choices sustain it. They also implicate the academic field of business and human rights itself, which has produced impressive normative frameworks and conducted important empirical research while sometimes maintaining a studied neutrality towards the structural conditions that make the violations it documents possible.

This volume is written in deliberate departure from that neutrality. It is an exercise in what scholars have described as *academic activism* — a tradition that has evolved significantly over the past decade and a half. In its earlier formulations, academic activism centred on the relationship between the individual researcher and the communities whose lives their work analyses: the refusal of detached observation in favour of scholarship that is accountable to, and co-produced with, those most affected by the injustices it describes (Chatterton et al., 2010). More recently, Borrás and Franco (2023) have identified the emergence of something more ambitious: not merely an individual practice but a collective movement of scholar-activists, characterised by shared assumptions about the world as we know it is and the world that might be built, grounded in solidarity and internationalism, and carrying — in their deliberately provocative formulation — the characteristics of a social movement: “*amorphous, fluid, informal, inspired and inspiring, creative and irreverent, bold and subversive*” (p. 102). This volume aspires, with full awareness of its limitations, to contribute to that movement. The authors of

the individual chapters — researchers, doctoral students, and graduate students working within the Master's Programme in Human Rights and Multi-level Governance at the University of Padova — bring to their subjects not only analytical rigour but a commitment to the proposition that knowledge about injustice carries with it a responsibility to act against it.

This does not mean that the volume abandons scholarly standards. On the contrary: the argument that business conduct causes systematic harm to people and the planet is an empirical claim, and it is supported here with evidence — data, case studies, legal analysis, and theoretical frameworks developed across multiple disciplines. The normative commitments that animate the volume are not imposed on the evidence; they are derived from it. When the evidence shows that multinational corporations have knowingly contaminated drinking water supplies, profited from the forced labour of ethnic minorities, financed the destruction of tropical forests in exchange for green finance credentials, or supplied weapons systems to parties engaged in documented war crimes, the appropriate scholarly response is not detachment. It is clarity.

The University of Padova is not a neutral backdrop to this volume. It is the institution whose researchers, doctoral students, and student movements appear in the pages that follow not only as authors but as actors: signatories of an open letter on the genocide in Gaza published in *The Lancet*; members of a coordination body that gathered over three thousand signatures demanding institutional accountability for complicity in documented violations of international law; participants in the global academic movement that this volume's final chapter identifies as one of the conditions of possibility for organised resistance to systems of impunity. The coincidence is not incidental. It is, the Author believes, evidence of something this volume argues throughout: that the institutional context in which knowledge is produced is never separable from the knowledge itself — and that a university committed to the proposition that knowledge carries responsibility will, sooner or later, be asked to demonstrate it.

2. *The Problem: Business, Profit, and the Externalisation of Cost*

The core dynamic examined in this volume is simple, and it is as old as capitalism itself: corporations generate profit in part by externalising costs — transferring the burden of their activities onto parties who did not choose to bear it and who receive no compensation for doing so. Those parties include

workers paid wages insufficient for a dignified life; communities whose water, air, and land are contaminated by industrial processes; future generations who will inherit a planet measurably less capable of sustaining human life than the one inherited by those who profited from its degradation; and people displaced from land, forest, and water by commercial interests that a compliant or corrupted state has chosen not to constrain.

This volume focuses on the negative dimension of business activity — not because the positive dimension does not exist, but because the negative dimension is systematically undercounted, under-regulated, and under-remedied. The extractivist logic identified throughout this volume as the primary driver of corporate harm has roots that extend well beyond the Industrial Revolution. Marco Armiero's concept of the Wasteocene argues that capitalism's systematic toxification of people and places is not a byproduct of production but one of its structural requirements: every dollar of profit demands "wasted people and places" (Armiero, 2021, as cited in Moore, 2025, p. 1). Building on Armiero's thesis, Jason W. Moore's world-ecology framework — developed through the concept of the Capitalocene — situates today's ecological crisis in the class dynamics and imperial expansion of capitalism since 1492, introducing the general law of overpollution: for every dollar of surplus value, capitalism produces surplus pollution that the biosphere cannot absorb (Moore, 2025). Where the Planetary Boundaries framework (Rockström et al., 2009) maps the biophysical thresholds that human activity has already transgressed, Armiero and Moore ask who transgressed them, by what logic, and since when — locating the origins of today's crisis not in the steam engine of 1784 but in the colonial conquests of 1492. The two frameworks are analytically complementary: the first describes the condition; the second names its historical agent.

The scale of corporate cost externalisation is, by any measure, extraordinary: more than half of global industrial greenhouse gas emissions since 1988 are attributable to just 25 corporate and state-owned entities (Carbon Majors Database, 2017). These same corporations invest substantially in what is now routinely described as *greenwashing* — the strategic cultivation of a positive environmental image designed to secure public and regulatory approval for the continuation of practices that the evidence, known to the corporations themselves, demonstrates to be harmful. A bibliometric analysis of 818 peer-reviewed publications on greenwashing from 2000 to 2025 documents how the field has evolved from early ethical and reputational debates toward empirical investigations of capital market consequences, ESG controversies, and what the literature now terms the dark side of corporate

sustainability (Wang, Zhou & Zang, 2026). The gap between what corporations know and what they disclose is not incidental. It is, as several chapters of this volume demonstrate, a deliberate and documented strategy — one that varies systematically across sectors, regions, and governance contexts, but whose structural logic remains constant: the externalisation of environmental and social costs onto those least able to resist it.

Chapter 2 of this volume introduces the Planetary Boundaries framework (Rockström et al., 2009), which identifies nine Earth-system processes whose stability is essential for human civilisation. Business activity has already transgressed seven out of nine boundaries beyond safe limits (Sakschewski et al., 2025): not only climate change, but biodiversity loss, land conversion, freshwater use, chemical pollution, and the disruption of biogeochemical flows. The costs of these transgressions are not distributed equally. They fall, as they have always fallen, most heavily on the poor, the politically marginalised, and the geographically remote — on communities that did not produce the emissions, clear the forests, or contaminate the aquifers, but who live with the consequences.

Within this planetary frame, the human rights dimension is not a separate concern: it is the same concern, seen from the perspective of the people rather than the systems. When a corporation knowingly conceals the toxic properties of a chemical it produces for decades — as documented in Chapter 6 — it is simultaneously committing an environmental violation and a human rights violation, against the same communities, at the same time. When a government grants land concessions to a hydroelectric developer without the free, prior and informed consent of the indigenous communities whose livelihoods depend on the river being dammed — as examined in Chapter 9 in the case of the Gibe III project — it is simultaneously a governance failure, an environmental harm, and a violation of the rights of peoples recognised under international law. The disciplines that study these phenomena separately — environmental science, human rights law, corporate governance, development economics — are studying different facets of the same structural reality.

3. The Approach: Transdisciplinarity as Necessity

The analytical approach adopted in this volume is *transdisciplinary* — a term that requires brief clarification. Multidisciplinarity places disciplines alongside one another, each contributing its methods to a shared problem

without integration. Interdisciplinarity creates dialogue across disciplines, developing hybrid methods. Transdisciplinarity goes further: it reconfigures the analytical framework itself in response to the complexity of the problem, insisting that the economic, the ecological, the legal, the political, and the social are not parallel tracks but mutually constitutive systems (Nicolescu, 2002). A transdisciplinary analysis of deforestation asks not only what the economic incentives are, or what the legal frameworks require, or what the ecological consequences are — but how these dimensions interact: how commodity price pressure interacts with regulatory capture, how regulatory capture interacts with the marginalisation of indigenous communities, how that marginalisation interacts with the structural opacity of global supply chains, and how that opacity makes it possible for consumers and investors in Europe or North America to profit from forest destruction without knowing — or being required to know — that they are doing so.

This is the analytical mode the volume adopts. It is the mode that the subject demands. Corporate harm to people and the planet is not produced by any single mechanism; it is the emergent property of a system — economic, political, legal, and cultural — whose components reinforce one another. Understanding it requires seeing the system whole. Addressing it requires intervening in multiple places simultaneously.

A note of intellectual honesty is warranted here. The claim that this volume is transdisciplinary is a claim about its architecture, not about every brick. The individual chapters that constitute Part II are, for the most part, written from within recognisable disciplinary traditions — law, economics, political science, environmental studies, gender studies, digital rights — and read as such. What is transdisciplinary is the framework that connects them: the analytical arc from planetary boundaries to corporate governance to the negation of entire peoples' futures; the concepts that no single discipline generated and that no single discipline owns — the *corridor of possibilities*, first developed in Chapter 2 as the safe and just space within which human communities can exercise meaningful agency; the *governance laboratory*, elaborated in Chapter 12 as the terrain in which models of corporate complicity, population control, and institutional impunity have been most completely tested and are now available for export; and the *economy of genocide*, the term used in Chapter 12 to describe the transformation of a system of dispossession into one of annihilation, documented in the report of the UN Special Rapporteur Francesca Albanese (2025); and the insistence, running through every chapter, that cause and effect in the domain of corporate harm cannot be understood by any single disciplinary lens alone. Transdiscipli-

narity, in this volume, is less a property of each chapter than a property of the whole — the emergent result of disciplines brought into genuine dialogue around a problem that exceeds any one of them.

For students trained in a single discipline — whether law, economics, business, or political science — this approach may be demanding. It requires engaging seriously with bodies of knowledge that are not one's own, and resisting the temptation to reduce complex phenomena to the categories that one's own discipline finds most tractable. The reward is an understanding of the subject that single-disciplinary analysis cannot produce: the ability to see not only the problem, but the structural conditions that sustain it, and the leverage points at which change is possible.

4. *The Structure of the Volume*

The volume is organised in two parts, connected by the analytical framework established in Part I and applied in Part II.

Part I: Setting the Frame *comprises three chapters that establish the intellectual foundations of the volume.*

Chapter 2 develops the theoretical framework for understanding sustainability through the integration of two complementary models: the Planetary Boundaries framework (Rockström et al., 2009), which defines the ecological ceiling beyond which human activity threatens the stability of Earth's life-support systems; and the Doughnut Economics model (Raworth, 2017), which defines the social foundation below which no human being should be allowed to fall. Together, these models define a “safe and just space” — the zone within which economic activity is simultaneously ecologically sustainable and socially just. Chapter 2 argues that the *decoupling thesis* — the claim that economic growth can be separated from environmental impact through technological efficiency — is not supported by the evidence, and that genuinely sustainable futures require a structural reduction in production and consumption, driven ultimately not by regulation alone but by a cultural transformation in how individuals and communities understand the relationship between material accumulation and human flourishing. Its concluding argument is worth quoting here, because it frames the ethical horizon within which the entire volume operates:

The shift required is not merely economic; it is social and cultural. It challenges the prevailing mindset of “I consume, therefore I am” and rejects the

notion that personal identity is tied to material possessions. [...] Rather, it calls for constructive austerity, a lifestyle choice that is both acceptable and desirable, enabling a structural reduction in production and consumption. (Chapter 2)

Chapter 3 sets out the international legal and normative framework governing the relationship between business and human rights. Its central focus is the United Nations Guiding Principles on Business and Human Rights (UNGPs), adopted by the UN Human Rights Council in 2011, which establish the three-pillar framework of the state duty to protect, the corporate responsibility to respect, and access to effective remedy. Chapter 3 also examines the complementary frameworks of the OECD Guidelines for Multinational Enterprises (2011) and the ILO's core labour conventions, and analyses the implementation challenges that remain central to the field. Readers who require a detailed understanding of the UNGPs before engaging with the case studies in Part II are directed to Chapter 3; subsequent chapters assume familiarity with the framework and reference it without re-explaining it.

Chapter 4 examines the European Union's evolving regulatory architecture for corporate sustainability and human rights accountability. Its primary focus is the Corporate Sustainability Due Diligence Directive (CS3D, Directive 2024/1760), which establishes mandatory human rights and environmental due diligence obligations for large companies operating in or sourcing from the EU's market. Chapter 4 also examines the EU Regulation on Deforestation-free Products and the EU Conflict Minerals Regulation, situating all three instruments within the broader trajectory of the EU's move from voluntary to binding corporate accountability frameworks. The chapter's analysis of the CS3D's scope, implementation challenges, and contested provisions provides the regulatory context within which the corporate conduct examined in Part II must increasingly be assessed.

Part II: Sectoral Intersections and Case Studies *comprises eight chapters, each examining a specific intersection between business activity and human rights or environmental violation, and each grounded in one or more case studies drawn from real corporate conduct.*

Chapter 5 examines forced labour, modern slavery, and human trafficking in global supply chains, with particular focus on the luxury fashion sector. Its case study analyses the Italian company Prada S.p.A. and its alleged connections to the forced labour of the Uyghur population in China's Xinjiang region, illustrating how supply chain opacity enables human rights violations to remain concealed within production networks that carry premium brand narratives of craftsmanship and exclusivity.

Chapter 6 examines the intersection of business activity, environmental destruction, and human rights violations through two case studies: DuPont's decades-long concealment of the toxic properties of PFAS chemicals, and the state-driven environmental catastrophe of the Aral Sea, produced by Soviet-era cotton production policies that combined ecological destruction with the systematic use of forced child labour.

Chapter 7 examines the structural drivers of global deforestation and their intersection with corporate finance, using the case of Michelin, BNP Paribas, and the Royal Lestari Utama green bond in Indonesia to analyse how green finance instruments can obscure rather than mitigate ecological destruction when certification frameworks lack independent verification and mandatory disclosure requirements.

Chapter 8 examines the gendered dimension of corporate harm — the structural exploitation of women's labour, land rights, and access to justice within global value chains. It develops an intersectional analytical framework showing that women are not merely among those harmed by corporate misconduct but are, in many contexts, the primary targets of a structural logic that treats gender inequality as a source of competitive advantage. Its case study of the Indian tea industry demonstrates how the intersection of patriarchal social structures, colonial institutional inheritance, ethnic marginalisation, and the purchasing practices of multinational corporations has produced conditions of systematic rights deprivation for women workers across generations.

Chapter 9 examines land grabbing, indigenous communities, and the human rights implications of large-scale infrastructure development, through the case of Salini's Gibe III hydroelectric project on the Omo River in Ethiopia — a project whose transboundary environmental impacts have severely affected indigenous communities around Lake Turkana in Kenya, raising fundamental questions about the adequacy of environmental impact assessment, free prior and informed consent, and the responsibilities of development financiers.

Chapter 10 examines the systematic targeting of human rights defenders and environmental defenders by corporate and state actors, mapping the scale and structural dynamics of a decade of attacks documented by the Business and Human Rights Resource Centre (2025). It identifies the weaponisation of legal processes through strategic lawsuits against public participation (SLAPPs), the shrinking of civic space, and the paradoxical role of the green transition as a driver of intensified violence against defenders in indigenous and rural communities. Its case study of Berta Cáceres — the Honduran Lenca

leader assassinated in 2016 for her opposition to the Agua Zarca hydroelectric dam — illustrates with devastating clarity the convergence of corporate power, state complicity, and gendered targeting that the aggregate data describe.

Chapter 11 examines the intersection of digital technologies, artificial intelligence, and human rights, addressing both the transformation of labour through digital platforms and the weaponisation of surveillance technologies as instruments of structural oppression. Its case study of Huawei's role in enabling state surveillance in Uganda illustrates the global dimensions of technology-enabled repression, while its analysis of AI-driven targeting systems in the Occupied Palestinian Territories connects the digital rights analysis to the broader examination of corporate complicity in human rights violations conducted in Chapter 12.

Chapter 12 reviews and analyses the report of the UN Special Rapporteur on the situation of human rights in the Palestinian territories occupied since 1967, Francesca Albanese — *From Economy of Occupation to Economy of Genocide* (2025) — examining how international corporations have enabled and profited from Israel's system of occupation, apartheid, and, as the Special Rapporteur concludes, genocide. The chapter's case studies examine Lockheed Martin's role in the global arms trade and the exploitation of solar energy by Israeli enterprises in illegal settlements in the West Bank — illustrating how the language of green energy and technological progress can function as cover for the consolidation of military occupation and the dispossession of a people — and, more broadly, as a *governance laboratory*: the terrain in which the convergence of corporate capital, military technology, and institutional impunity has been most completely tested and is now available for export.

Chapter 12 is not only the final case study in the volume; it is the chapter in which the analytical threads developed across the preceding eleven chapters converge — and in which the question of whether the corridor of possibilities can be kept open acquires its most urgent formulation.

5. The Case Study Method: Theory Landing in Practice

Each chapter in Part II is structured around one or more real case studies. This methodological choice requires brief justification, because the case study is sometimes treated in academic writing as a vehicle for illustration — a concrete example appended to a theoretical argument to make it more accessible. That is not how case studies function in this volume.

The case studies here serve three distinct analytical purposes.

The first is *grounding*: they demonstrate that the structural dynamics described in Part I's theoretical framework are not abstractions but descriptions of things that actually happen, to real people, in real places, with real and often irreversible consequences. DuPont's concealment of PFAS toxicity is not a hypothetical illustration of the concept of corporate externalisation; it is a documented instance of corporate executives knowingly choosing to impose cancer risks on communities in order to protect profit margins. The women working as tea pluckers in Assam are not a metaphor for gendered exploitation in global value chains; they are specific people, with names and histories, whose working day begins at 4 a.m. and whose wages represent 35 per cent of a liveable income.

The second purpose is *generalisation*: each case study is chosen not because it is exceptional but because it is representative. The Prada–Xinjiang case is not presented as evidence that Prada is uniquely culpable among luxury fashion brands; it is presented as a window into a structural dynamic — the use of supply chain opacity to maintain plausible deniability about labour conditions — that characterises the sector as a whole. The Gibe III dam case is not evidence that Salini is an unusually irresponsible developer; it illustrates the systematic failure of environmental impact assessment and community consultation processes in large infrastructure finance across multiple continents. The point is always the pattern, not only the instance.

The third purpose is *interrogation*: the case studies are designed to generate questions that the theoretical framework alone cannot answer. What does it mean, in practice, to conduct human rights due diligence in a supply chain with 20 tiers of subcontracting and no mandatory disclosure requirements? What does free, prior and informed consent look like when the community being consulted has no legal recognition, no access to independent legal advice, and faces the implicit threat of state violence if it refuses? What does access to effective remedy mean for a woman tea plucker in Assam whose housing is contingent on her continued employment and who has never heard of the UN Guiding Principles? These questions are not rhetorical. They are the questions that students of business and human rights must learn to ask, and that practitioners in the field must learn to answer.

Across all the case studies, certain structural configuration recur with a regularity that is itself analytically significant. Corporate harm is rarely the product of ignorance: in the cases examined here, corporations typically knew, or had reasonable means to know, that their conduct was causing harm, and chose to continue. Legal and regulatory frameworks typically existed that should have constrained the harmful conduct, but were circumvented,

weakly enforced, or actively lobbied against by the corporations with the most to lose from their application. The communities most severely harmed were typically among the least powerful — indigenous peoples, ethnic minorities, women workers, small-scale farmers, communities in states with weak rule of law — and therefore among the least able to hold perpetrators accountable through the formal mechanisms that international human rights law provides. And the temporal horizon of corporate decision-making — typically the next quarter, the next fiscal year, the next investment cycle — was systematically misaligned with the temporal horizon of the harms produced, which accumulated over decades and will persist for generations.

These are not coincidences. They are the operational logic of a system in which the incentives to externalise harm are powerful, the mechanisms for accountability are weak, and the costs of inaction fall on those with the least capacity to resist. Understanding this system — and the possibilities for changing it — is what this volume is designed to help readers do.

6. The Readers: Students, Teachers, and Activists

This volume is addressed primarily to students enrolled in graduate programmes in human rights, business ethics, law, political science, and related fields — but it is written with the conviction that the distinction between student and activist is, in the context of the subject matter, not a distinction that can be cleanly maintained.

This volume has also been adopted as a resource within the Erasmus Mundus Joint Master on Climate Change and Diversity: Sustainable Territorial Development (CCD-STeDe), whose students approach the intersection of ecological crisis and social justice from the perspective of territorial planning, environmental engineering, and climate governance. Their presence among this volume's readers has shaped its final form — in particular the decision to situate the Planetary Boundaries framework within the broader world-ecology tradition developed by Jason W. Moore, whose Wasteocene concept (Moore, 2025) provides the historical and structural explanation for why those boundaries have been transgressed, and by whose logic. A volume written for students of human rights and political science that finds its way into the curriculum of climate engineers is, the Author believes, the most concrete possible demonstration of the transdisciplinary argument that Chapter 1 advances: that the economic, the ecological, the legal, and the political are not parallel tracks but mutually constitutive systems.

The volume emerged from teaching. Its structure, analytical approach, and selection of case studies were shaped by years of course development and refinement within the Master's Programme in Human Rights and Multi-level Governance at the University of Padova – by the questions students asked in seminars, by the group projects they produced, by the theses they wrote under supervision, and by the persistent dissatisfaction, shared by students and instructor alike, with materials that described the problem without engaging with its depth. Several of the case studies in Part II are drawn, with appropriate attribution and the authors' consent, from student research – master's theses and group projects that demonstrated an analytical quality and a moral seriousness that deserved a wider audience than a thesis committee. This is not an unusual practice in academic publishing, but it is one that this volume makes explicit, as a matter of transparency and as a recognition that the knowledge produced in graduate education is a collaborative achievement.

For colleagues who adopt this volume in whole or in part for their own teaching, a shared folder has been prepared containing supplementary teaching materials: teaching notes for the selected case studies, suggestions for seminar discussions, and directions for further reading. Access is available through the QR code below (fig. 1). The folder is password-protected; access credentials are provided upon request by email to the address associated with the QR code, which is linked to a verified institutional account. Requests must be submitted from an institutional email address – university or research centre domain – and will be processed within a reasonable timeframe. The institutional affiliation of the applicant will be verified against publicly available information on the relevant organisation's website prior to granting access.

Figure 1



QR code with direct link to a Shared folder for teachers and instructors available at: <https://tinyurl.com/BHR2026>

The materials in this folder are updated regularly, and colleagues are encouraged to contribute their own teaching notes, adapted case studies, and additional materials through the same channel. The ambition — modest in scale but genuine in intent — is to build a community of teachers and students who are working, from different disciplinary starting points and in different institutional contexts, on the same set of questions: what does it mean to hold corporations accountable for the harms they produce? What legal, political, and cultural mechanisms are available for doing so? And what would it take to build an economic system in which the generation of harm was not, as it currently is, a rational and rewarded strategy?

7. A Note on Corporate Misconduct: Definitions and Scope

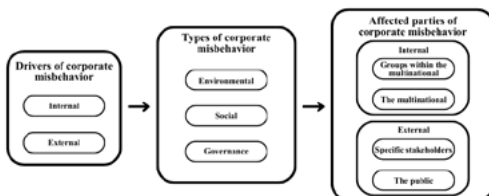
Before the chapters that follow can do their analytical work, one definitional question requires brief attention: what, precisely, is this volume studying?

The term “*corporate crime*” is used in the existing literature to describe acts of misconduct committed by individuals within their legitimate professional roles for the benefit of their employing organisation (Cuervo-Cazurra et al., 2021) – see figure 2. This encompasses financial fraud, bribery and corruption, violations of trade and labour regulations, obstruction of justice, and – relevant to this volume’s central concerns – breaches of human and labour rights, and environmental degradation. These are, in the ESG framework now widely used in corporate reporting, the “S” and “E” dimensions of business impact.

This volume does not restrict itself to conduct that is criminal in the strict legal sense. Many of the most damaging corporate practices examined here *are legal* – permitted by domestic law, compliant with the voluntary codes to which corporations have subscribed, and conducted openly within regulatory frameworks that have been shaped, in part, by the lobbying of the industries they nominally regulate. The cotton production regime that destroyed the Aral Sea was state policy. DuPont’s PFAS production continued for decades within a regulatory environment that the company had actively worked to prevent from becoming more restrictive. The purchasing practices of multinational tea buyers that drive wages below subsistence levels in Assamese plantations are not illegal; they are the rational outcome of a buyer-driven commodity chain structured to concentrate value at the downstream end.

The question this volume asks is therefore not only “is this conduct criminal?” but “is this conduct consistent with the respect for human dignity that Chapter 2 identifies as the non-negotiable foundation of any legitimate business model?” In many of the cases examined, the answer is clearly no — and the gap between what is legal and what is consistent with human dignity is itself one of the central analytical objects of the field of business and human rights.

Figure 2 - Corporate misconduct typology



Source: Author’s elaboration from Cuervo-Cazurra et al. (2021)

The volume does not claim to be comprehensive. The case studies in Part II represent a selection from a much larger universe of documented corporate harm — a selection made on the basis of analytical richness, pedagogical value, and the availability of high-quality primary and secondary sources. Significant themes that deserve treatment beyond what this volume provides include consumer finance and predatory lending, pharmaceutical pricing and access to medicines, the human rights implications of agricultural commodity speculation, and the gendered and racialised dimensions of environmental harm in the Global South beyond the specific cases examined here. The concluding chapter of the volume suggests directions for further reading and research in these areas.

An Invitation

The question of whether knowledge carries with it a responsibility to act is not new, and it has been answered — with remarkable convergence — by traditions of thought separated by millennia and by continents. The Sarvasara Upanishad draws a fundamental distinction between conscious action — undertaken with full awareness that “I do this” — and the me-

chanical execution of ritual, performed without consciousness of its fruit. The latter, the text warns, “leads to *bondage*” and has birth and its attendant evils as its result (Niralamba Upanishad of Shukla-Yajurveda, 22–23, Khanna, 1914/2011): the absence of conscious engagement is not innocence but a different, and in its own way more insidious, form of entrapment. Paulo Freire, writing from within the Brazilian tradition of critical pedagogy, arrived at a structurally identical conclusion: to understand how things are is already to be implicated in the question of how they should be, and to refuse that implication is itself a choice — a choice in favour of the way things are (Freire, 1970).¹

These two traditions do not need to be reconciled, because they do not disagree. They converge, across the distance of two and a half millennia and of very different philosophical vocabularies, on a single insight: that conscious knowledge of injustice and passive non-response are not compatible positions. To know, and to proceed as though one did not know, is not neutrality — it is, in the language of the Upanishad, bondage; in the language of Freire, complicity. The scholars who contributed to this volume have taken that insight seriously. So, the Author hope, will its readers.

The corporations examined in this volume have made choices. They have chosen, in many cases with full knowledge of the consequences, to externalise the costs of their operations onto people and places that lacked the power to refuse. The states that should have constrained them have, in many cases, chosen not to — because the corporations pay taxes, provide employment, finance political parties, and employ the lawyers and lobbyists who write the regulations that govern them. The international frameworks that exist to protect human rights and the environment are real and in many respects impressive achievements of collective norm-making — and they are also, as every chapter in this volume demonstrates, systematically insufficient to the scale of the problem they were designed to address.

None of this is inevitable. The evidence assembled in Part II of this volume demonstrates not only the persistence of corporate harm but its contingency: the harms documented here were produced by specific decisions, made by identifiable actors, within systems that could have been — and in some cases still can be — structured differently. The CS3D, examined in Chapter 4, represents a genuine, if partial and contested, attempt to restructure one

¹ The ethical principle underpinning this book does not belong to any particular tradition, neither Western nor progressive, but is a shared intuition of humanity that gives thoughtful consideration to the relationship between knowledge and responsibility.

dimension of those systems. The multi-stakeholder initiatives examined in Chapter 8 demonstrate that rights-respecting supply chain relationships are commercially viable. The legacy of Berta Cáceres, examined in Chapter 10, demonstrates that individual defenders and their communities can generate institutional change that outlasts their own lives.

What the volume asks of its readers is not despair, and not the false comfort of optimism. It asks for what the Italian political theorist Antonio Gramsci called *pessimism of the intellect, optimism of the will* — the combination of clear-eyed analysis of the structural obstacles to change with the refusal to accept those obstacles as permanent. It asks for the intellectual rigour to understand the system that produces the harms described in these pages, and the moral seriousness to accept that understanding it is not enough.

The chapters that follow are, in this sense, both an analysis and an argument. The analysis is, the Authors believe, well-grounded in evidence. The argument — that corporate conduct which systematically harms people and the planet is not a market externality to be managed but an injustice to be remedied — is one that the Authors are prepared to defend, and that they invite readers to interrogate, contest, and, where the evidence warrants, carry forward.

The chapters that follow map, with accumulating precision, the mechanisms through which that injustice is produced and sustained — and the space, however narrowed, within which it can be contested. That space is the subject of this volume. What fills it, or empties it, depends on choices: by corporations, by states, by regulators, by investors, and by the readers of these pages.

Chapter 2 begins that work — by establishing the biophysical and social coordinates within which all the corporate conduct examined in this volume must ultimately be assessed.

Box 2 - Key facts

- More than half of global industrial greenhouse gas emissions since 1988 are attributable to just 25 corporate and state-owned entities (Carbon Majors Database, 2017).
- Seven out of nine planetary boundaries have already been transgressed beyond safe limits (Sakschewski et al., 2025), making the dominant economic paradigm structurally incompatible with Earth-system stability.
- The volume covers 12 chapters, 84 established arguments, 117 glossary terms, and approximately 400 bibliographic references across disciplines including law, economics, political science, environmental studies, gender studies, and digital rights.
- The case studies in Part II span five continents and document corporate harm in sectors including luxury fashion, chemicals, finance, agribusiness, infrastructure, digital technology, and defence.
- A bibliometric analysis of 818 peer-reviewed publications on greenwashing from 2000 to 2025 documents the evolution of the field from early ethical debates toward empirical investigations of what the literature now terms the dark side of corporate sustainability (Wang, Zhou & Zhang, 2026).
- The volume draws on research produced within the Master's Programme in Human Rights and Multi-level Governance at the University of Padova, including master's theses and group projects whose analytical quality and moral seriousness warranted a wider audience.
- The University of Padova is itself present in the volume's pages: as the institutional context of its production, and as an actor in the global academic movement that the volume's final chapter identifies as one of the conditions of possibility for organised resistance to systems of impunity.

Chapter 2

Boundaries of Sustainability: Planet, People, and the Myth of Sustainable Business

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This chapter creates the base of the book, setting the frame for understanding the interaction of the planet Earth and the people that occupy it. The goal is the depiction of the interconnectivity of ecological, economic, and social crises that threaten the stability of the global order, requiring urgent action. The unravelling of the trajectory of «business as usual» which negatively impacts people (human rights) and territories, causing irreparable damage to the Earth's biocapacity, and framing it within the nine Planetary Boundaries. These Boundaries are integrated with the social foundation of the Doughnut Economy, and the model of «*Safe and Just Corridor*», highlighting the interdependence of human dignity and protection of the Earth, proposing a fundamental paradigm shift. Additionally, arguing that the «decoupling» of GDP growth from environmental impact is a myth, showing that continued economic growth inevitably violates the biophysical laws of the steady-state economy. Concluding that, to achieve a sustainable future, humanity must move beyond the extractivist culture, aiming at a deliberate reduction in production and consumption.

Keywords: Planetary Boundaries; Doughnut Economics; Biodiversity Loss; Decoupling Myth; Earth System Justice.

Learning Objectives

After reading this chapter, you will be able to:
Explain the concept of Planetary Boundaries and identify which thresholds have been transgressed
Describe the Doughnut Economics model and its relationship to social justice and ecological sustainability
Critically evaluate the empirical and theoretical case against the “decoupling” hypothesis
Articulate the structural connections between economic growth, ecological overshoot, and social inequality
Reflect on the cultural and systemic changes required to transition toward a safe and just corridor for humanity

1. Setting the Frame

*We have not inherited the Earth from our ancestors;
we are borrowing it from our children.*
Antoine de Saint-Exupéry (attributed)

The preceding chapter established why this volume was written and what it asks of its readers. This chapter establishes the coordinates within which everything that follows must be understood: the biophysical boundaries of the planet and the social foundations without which human dignity cannot be sustained.

We live in an era of widespread global conflict and rapid socio-economic transformation, which threatens the stability of the global economic order. Political, economic, social, and environmental crises are deeply interconnected.

The roots of the crises of our time (ecological, economic, and social) undoubtedly originate in different eras, places, and political contexts (Francis, 2015, 129). Yet there is a time in recent economic history when the data collected and analysed by experts outlined a trajectory of «business as usual» that needed to be changed — to avert the collapse of ecological, economic, and social systems.

1970 is the year in which the amount of renewable natural resources used by human activity (ecological footprint) began to exceed the biocapacity of planet Earth, i.e., the natural capacity of their regeneration per year. When the extraction is higher than the renewal of resources, a deficit is cre-

ated: the ecological resources available in the future are reduced¹. Since 1970, resource deficits and extraction have steadily worsened.

Updated data for 2024 indicate that the global ratio between ecological footprint and biocapacity has reached 1.78 (Global Footprint Network, 2024). This global average, however, masks significant cross-country disparities: some countries remain below the sustainability threshold (e.g., India, 0.75), while others exhibit markedly higher levels of ecological overshoot (e.g., the United States, Luxembourg, and Qatar, with ratios of 5.06, 7.68, and 10.48, respectively). Taken together, these figures suggest that current patterns of consumption would require the equivalent of 1.78 Earths to be sustained. This overshoot is rendered tangible by the concept of Earth Overshoot Day — the date in a given year on which humanity has exhausted the planet's annual regenerative budget. In 2022, that date fell on 25 July; by 2025, it had advanced to 24 July, confirming a trend of structural and worsening ecological deficit (Global Footprint Network, 2024). Since, so far, we have only one planet to live on, we make up the missing resources by consuming those accumulated over the centuries; resources that will therefore no longer be available to today's young people and future generations.

What is the result of such consumption of resources? In 1970, the global population was estimated at 3.7 billion individuals; today it has reached 8.3 billion — more than doubled (Worldometers, 2024). In 1900, the land surface covered by forests and unspoiled nature was equal to 5.1 billion ha; in 2018 this area was reduced by 1.1 billion hectares (-22%), to make room for pastures (+1.67 billion hectares) and agriculture (+0.8 billion hectares). 75% of the earth's surface has been altered by human activity: the largest human footprint on the planet is caused by what we eat, not by the cities where we live (Ellis, 2011, 1010–1035).

According to biologist Edward O. Wilson, to ensure 85% of the world's biodiversity it is necessary that humanity does not use more than half of the Earth's resources (e.g., a ratio between ecological footprint and biocapacity equal to 0.5). The consumption of resources today exceeds that limit by three times — with effects also on the climate (Wilson, 2016). Therefore, it should come as no surprise that losses are strongly pronounced in freshwater systems and tropical regions where freshwater habitats and species have

¹ If, instead of reasoning about the balance between withdrawn and generated resources, we relate them to each other and multiply this quotient by the duration of a year, the conventional day on which the withdrawal from the accumulated natural heritage begins is determined — the so-called «Earth Overshoot Day». The concept was conceived by Andrew Simms, to launch the first global Earth Overshoot Day campaign in 2006.

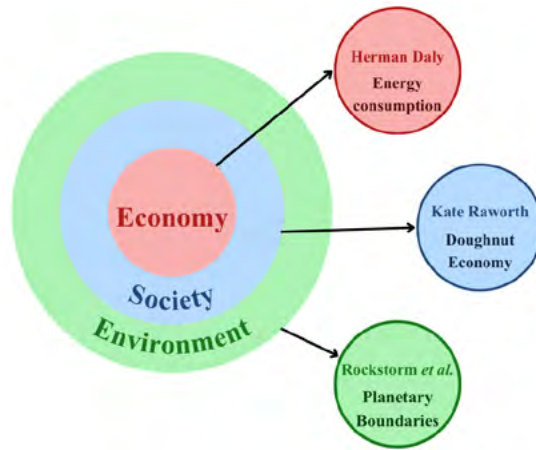
declined by an average of 85%, while in Latin American regions by as much as 95% (WWF, 2024).

This ecological deficit is not just an environmental issue; it is a primary driver of social instability and inequality.

At the social level, one key driver of instability is the growing polarisation in living conditions: widening internal inequalities, limited social mobility, and an increasing gap between so-called «advanced» and «developing» countries. Personal insecurity is rising, alongside escalating internal and international conflicts. Land conversion for productive activities, land grabbing from indigenous or customary tenure holders, and the erosion of indigenous rights are accelerating across multiple regions. Furthermore, freedom of expression and political rights are being curtailed — including within several European Union member states — while violence against journalists and human rights defenders is on the rise, contributing to escalating migratory flows.

The underlying explanation for this polarisation — manifesting in conflicts — may be resource-based, or more precisely, driven by power over those resources. The world is witnessing a growing demand for economic development and technological progress, despite a sharp decline in natural resources per capita. While natural resources remain finite, consumption patterns are expanding exponentially, concentrating power in the hands of those who control these increasingly scarce strategic resources (International Resource Panel, 2019). Even peace is now being traded for strategic raw materials (by the United States) or natural gas (by the European Union) in the ongoing war in Ukraine.

These concepts can be depicted through a theoretical framework (Figure 1) explaining the three pillars of sustainability. Economy, limited through Daly's rules of consumption and the principles of the steady-state economy, tied to the environment through Rockström et al.'s Planetary Boundaries, and bounding society through Raworth's socio-economic boundaries of the Doughnut Economy. These pillars illustrate a trajectorial shift from the linear economy of growth to a model of «Earth system justice», where sustainability and economic growth are mindful of environmental and social impacts, respecting human rights and human dignity. The Doughnut Economics model, discussed in detail in §3.1, provides the integrative visual framework through which these three pillars are operationalised.

Figure 1 - Theoretical framework: Three pillars of sustainability

Source: Author's own elaboration based on ROCKSTORM (2009), RAWORTH (2017) and DALY (2012).

2. Planet

Since the 1980s, climate change has been recognised as one of the crucial areas for the global community. The establishment of the Intergovernmental Panel on Climate Change (IPCC) in 1988 and its periodic assessment reports provided a robust scientific foundation, effectively communicating the urgency for a call to action. The scientific consensus on anthropogenic-driven climate change played a pivotal role in raising awareness in business sustainability, garnering consumer and political attention. The mainstreaming of climate science and subsequent political prioritisation and communication of climate change as a key environmental issue and threat is now grounded in public consciousness.

However, the same level of political attention and urgency has not been extended to the issue of biodiversity loss. Biodiversity, short for biological diversity, refers to the variety of life on Earth and the complex relationships between organisms and their habitats. Beyond its intrinsic value, biodiversity is essential for human well-being, providing direct and indirect goods and services — known as ecosystem services — that underpin both prosperity and survival.

Since 1500, documented extinctions amount to approximately 765 species, including 79 mammals, 145 birds, and 36 amphibians. However, recorded losses likely represent only a fraction of total extinctions, as formal declarations require stringent evidence and many *taxa* — especially invertebrates — remain poorly monitored. Current extinction rates are therefore highly uncertain and vary widely depending on methodology: estimates range from a few dozen species per day to claims of up to 150 species daily, reflecting divergent modelling approaches, extrapolations from limited datasets, and differing assumptions about species richness and habitat loss. This variability underscores both the limits of empirical knowledge and the reliance on indirect inference, even as a broad scientific consensus holds that contemporary extinction rates are significantly elevated above background levels (Pearce, 2015). The primary drivers of biodiversity loss include overexploitation (e.g., hunting, fishing, and illegal wildlife trade), habitat conversion driven by agricultural expansion, pollution, and the spread of invasive alien species, while climate change is expected to further intensify these pressures in the coming decades.

Extinction represents a stark but narrow indicator of biodiversity decline, as it marks the disappearance of the last individual of a species — by definition, a rare event. However, broader analyses reveal a dramatic overall decline in wildlife populations. The Living Planet Report 2024, published by the World Wildlife Fund (WWF) and the Zoological Society of London, found that populations of 5,495 vertebrate species (mammals, birds, fish, reptiles, and amphibians) declined by 73% between 1970 and 2020 (WWF, 2024, 24).

According to the IUCN Red List (2025), more than 46,300 species are threatened with extinction, including: 44% of reef-building corals, 1,199 mammal species (26% of described species), 1,957 amphibian species (41%), 38% of trees, 37% of sharks and rays, 34% of conifers, 26% of freshwater fishes, 1,373 bird species (12%), and 993 insect species (0.5%).

The major pressures on biodiversity are well-documented. Habitat destruction — a consequence of business-driven land-use change and land consumption — remains the most significant current threat. Other key factors include overexploitation of natural resources, pollution, invasive species, and climate change. While habitat loss is the dominant pressure today, climate change is likely to become the most critical threat in the coming decades.

Despite the well-established scientific evidence of the ongoing biodiversity crisis, the political response has been comparatively muted. Is it due to the inherent complexity of biodiversity as a concept, or the lack of a single unifying metric akin to atmospheric CO₂ levels for climate change, or the

absence of a centralised scientific body equivalent to the IPCC to synthesise and communicate biodiversity research effectively to policymakers and the public?

2.1 Planetary Boundaries

We are the first generation to feel the impact of climate change and the last generation that can do something about it.

Barack Obama, *United Nations Climate Summit*
(2014)

In 2009, the planetary boundaries concept, proposed by Johan Rockström and a group of 28 internationally renowned scientists (Rockström et al., 2009),² set nine environmental thresholds within which humanity can safely continue to develop and thrive for future generations. Crossing these boundaries increases the risk of triggering abrupt or irreversible environmental shocks on a large scale.

Understanding why these boundaries matter requires distinguishing between two related but distinct concepts. Transgressions refer to the crossing of scientifically defined safe operating limits — thresholds beyond which the risk of large-scale environmental disruption increases significantly. Tipping points, by contrast, are the thresholds at which self-reinforcing feedback cycles are triggered, producing irreversible shifts in the state of the Earth system regardless of subsequent human action. Transgression increases the probability of reaching tipping points; the two concepts are therefore causally linked, and both are addressed in detail in §2.2.

The nine environmental thresholds defined by Rockström et al. are:

a. Modification of biogeochemical flows: Industrial and agricultural processes disrupt natural cycles and modify the nutrient balance for living organisms. This boundary is transgressed, because both the global phosphorus flow into the ocean and the industrial fixation of nitrogen (converting stable nitrogen from the atmosphere into bioreactive forms) have disrupted global biogeochemical flows.

b. Biosphere integrity: The diversity, extent, and health of living organisms and ecosystems affects the state of the planet by co-regulating the energy balance and chemical cycles on Earth. Disrupting biodiversity threatens this co-regulation and dynamic stability. Both the loss of genetic diversity

² The planetary boundaries framework was first introduced to a general audience in a non-peer-reviewed Feature article in *Nature* (Rockström et al., 2009); the full peer-reviewed version, cited throughout this chapter, was published simultaneously in *Ecology and Society*.

and the decline in the functional integrity of the biosphere are outside safe levels.

c. Climate change: Increased greenhouse gases and aerosols in Earth's atmosphere trap heat that would otherwise escape into space. More carbon dioxide in the atmosphere and more trapped radiation causes global temperatures to rise and alters climate patterns. This boundary is transgressed, and CO₂ concentrations are rising.

d. Novel entities: Technological developments introduce novel synthetic chemicals into the environment, mobilise materials in wholly new ways, modify the genetics of living organisms, and otherwise intervene in evolutionary processes and change the functioning of the Earth system.³ The amount of synthetic substances released into the environment without adequate safety testing places novel entities in the high-risk zone. Initially introduced as «chemical pollution», this boundary's scope was extended to include plastics as of January 2022, surpassing the threshold of the safe operating space (Persson et al., 2022, 1510–1521).

e. Land system change: The transformation of natural landscapes, such as through deforestation and urbanisation, disrupts habitats and biodiversity and diminishes ecological functions like carbon sequestration and moisture recycling. Globally, the remaining forest areas in tropical, boreal, and temperate biomes have fallen below safe levels.

f. Stratospheric ozone depletion: Ozone high in the atmosphere protects life on Earth from incoming ultraviolet radiation. The thinning of the ozone layer, primarily due to human-made chemicals, allows more harmful UV radiation to reach Earth's surface. Total ozone is slowly recovering because of the international phasing-out of ozone-depleting substances since the late 1980s. Ozone depletion is therefore currently within the Safe Operating Space.

g. Atmospheric aerosol loading: Changes in airborne particles from human activities and natural sources influence the climate by altering temperature and precipitation patterns. Although large-scale air pollution already causes changes to monsoon systems, forest biomes, and marine ecosystems, the global metric used in the planetary boundaries framework – interhemispheric difference in atmospheric aerosol loading – places this process just within the Safe Operating Space despite rising pressures. This boundary was quantitatively assessed as of 2023 through new scientific evidence, as part of the third major update to the framework (Richardson et al., 2023).

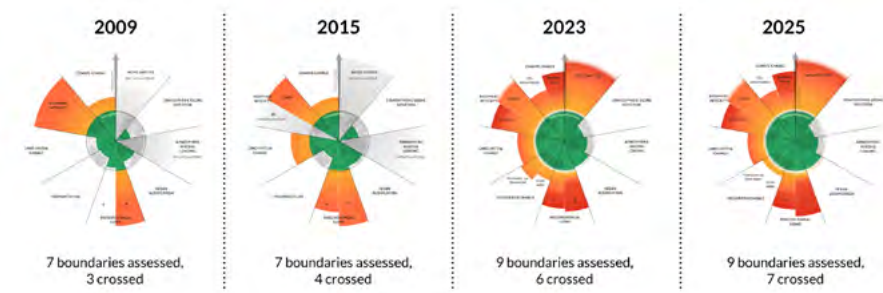
³ The term *novel entities* was deliberately chosen to signal that these are not merely chemical pollutants in the traditional sense, but substances and processes with no evolutionary precedent in Earth-system history.

h. Ocean acidification: The acidity of ocean water increases (its pH decreases) as it absorbs atmospheric CO₂. This process harms organisms that need calcium carbonate to make their shells or skeletons, impacting marine ecosystems, and it reduces the ocean's efficiency in acting as a carbon sink. The 2025 Planetary Health Check showed that the ocean acidification boundary has been breached for the first time. Since the start of the industrial era, the ocean's surface pH has fallen by around 0.1 units, a 30–40% increase in acidity, pushing marine ecosystems beyond safe limits and degrading the oceans' ability to act as Earth's stabiliser.

i. Freshwater change: The alteration of freshwater cycles, including rivers and soil moisture, impacts natural functions such as carbon sequestration and biodiversity, and can lead to shifts in precipitation levels. Human-induced disturbances of both blue water (e.g., rivers and lakes) and green water (i.e., soil moisture) have exceeded the planetary boundary.

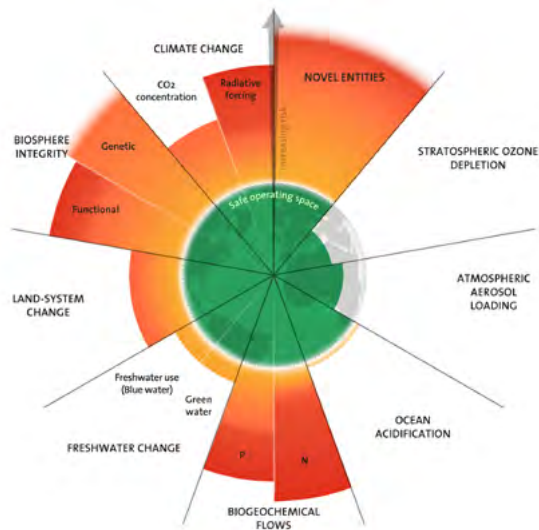
The scientific assessment of planetary boundaries has followed a rapidly deteriorating trajectory. When Rockström et al. (2009) first proposed the framework, three boundaries were estimated to have been transgressed: climate change, biodiversity loss, and biogeochemical flows. By 2015, Steffen et al. refined the methodology and confirmed the same three violations while tightening the quantitative thresholds. A documented escalation was recorded by Richardson et al. (2023), who concluded for the first time that six of the nine boundaries had been crossed — adding land-system change, freshwater change, and novel entities to the list of transgressions. The most recent update, Sakschewski, B., Caesar, L., et al. (2025), extends this count to seven, with ocean acidification breaching its safe limit for the first time since the industrial era (see figure 2). This successive tightening of scientific assessments — from three to seven transgressed boundaries over less than two decades — is not merely a reflection of improved measurement methodologies; it documents an accelerating and compounding deterioration of the Earth system's stability. The boundaries are not independent thresholds: they interact through non-linear feedbacks, meaning that transgression in one domain amplifies pressure on others. Focusing global policy action on climate change alone — as has predominantly been the case — is therefore a structurally insufficient response to a multi-dimensional systemic crisis.

Figure 2 - The evolution of the planetary boundaries framework



Source: Azote for Stockholm Resilience Centre, Stockholm University. Based on Sakschewski and Caesar et al. 2025, Richardson et al. 2023, Steffen et al. 2015, and Rockström et al. 2009. Licensed under CC BY-NC-ND 3.0.

Figure 3 - The 2025 update to the Planetary boundaries



Source: «Azote for Stockholm Resilience Centre, based on analysis in Sakschewski and Caesar et al. 2025. Licensed under CC BY-NC-ND 3.0.

The clash between economic development and environmental sustainability is at the root of all today’s instabilities: social, economic, and environmental crises are intertwined. Despite the importance of this fact, it is concerning that, in the ongoing discussions over sustainability and its governance, due attention is not paid to the biophysical basis of the economic process. We must shift public attention, implementation efforts, and financial capital from climate change mitigation policy to biodiversity and land conservation. To

this end, we need to unleash work — thought and action — from the climate change agenda and refocus on this last challenge that we cannot afford to lose.

2.2 Tipping Points and the Approaching Threshold

*The climate system is an angry beast,
and we are poking it with sticks.*

Wallace Broecker, Columbia University (1997)

The Planetary Boundaries framework maps, with scientific precision, the biophysical thresholds that human activity has already transgressed. What it does not map — and does not claim to map — is the historical and structural logic through which those transgressions were produced. That question is addressed by a complementary analytical tradition: Marco Armiero's Wastocene framework, extended and radicalised through Jason W. Moore's world-ecology analysis of the Capitalocene, situates today's ecological crisis not in the technological choices of the Industrial Revolution but in the class dynamics and imperial expansion of capitalism since 1492 (Armiero, 2021; Moore, 2016). Where Rockström et al. identify the condition, Armiero and Moore name its historical agent. The two frameworks operate at different levels of analysis and are, in this volume, treated as mutually reinforcing: the first establishes the biophysical coordinates within which corporate conduct must be assessed; the second explains why that conduct follows the logic it does — and has done, across five centuries of capitalist world-ecology.

To better understand the relevance, importance, and urgency, it is important to answer the question of why tipping points are critically approaching. As introduced in §2.1, tipping points are defined as the thresholds where minor changes trigger self-reinforcing cycles that lead to irreversible changes in the planet's state. While transgressions refer to the crossing of safe boundaries, tipping points go beyond the safe and just corridor, causing unpredictable and irreversible developments. So far, seven boundaries have been transgressed: biogeochemical flows, freshwater change, land-system change, biosphere integrity, climate change, novel entities, and ocean acidification, which most recently passed the safety boundary (Sakschewski, B., Caesar, L., et al. (2025) (figure 3).⁴

The principal climate threshold that indicates the increased risk of triggering multiple tipping points is passing the 1.5° Celsius of warming threshold, causing irreversible damage and increased wet-bulb temperatures⁵. But even

⁴ Interactive illustration available at <https://www.planetaryhealthcheck.org>

⁵ Wet-bulb temperature is a measure of heat stress combining temperature and humidity, which directly impacts human health. Above approximately 35°C wet-bulb, the human body can no longer cool itself through perspiration, posing a direct survival risk even to healthy individuals at rest.

before reaching that threshold, the current warming of 1.2° Celsius, along with the inertia created so far, affects the vulnerable points of our planet — for example, low-lying coastal areas and islands that face saltwater infusion and storm damage (Gupta et al., 2024, e828). The existing greenhouse emissions have already initiated the feedback cycle that ensures the tipping of points even if emissions are cut immediately. To conclude, the self-reinforcing cycles and feedback loops, in combination with the extensive transgression of most of the planetary boundaries, inch the tipping points closer as the Earth warms itself.

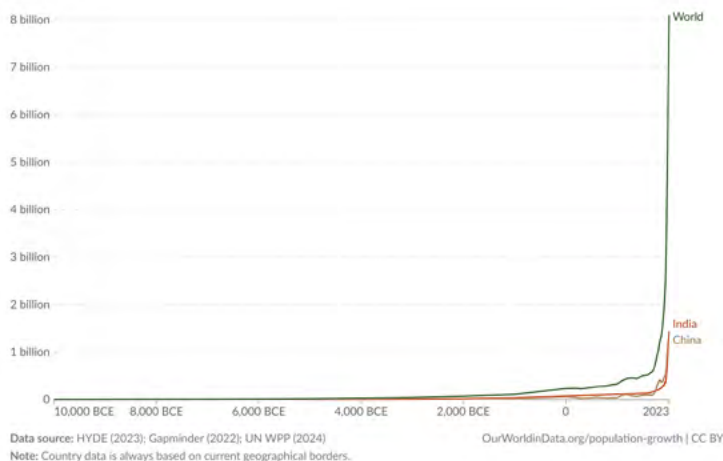
3. People

Anyone who believes that exponential growth can go on forever in a finite world is either a madman or an economist.

Kenneth Boulding, *Testimony to the US Congress* (1973)

The growth in population by over three billion in the past three decades surpassed the total human population expansion observed in preceding millennia (Figure 4). Trends matter; the scale of a trend even more so.

Figure 4 - Population, 10,000 BCE to 2023

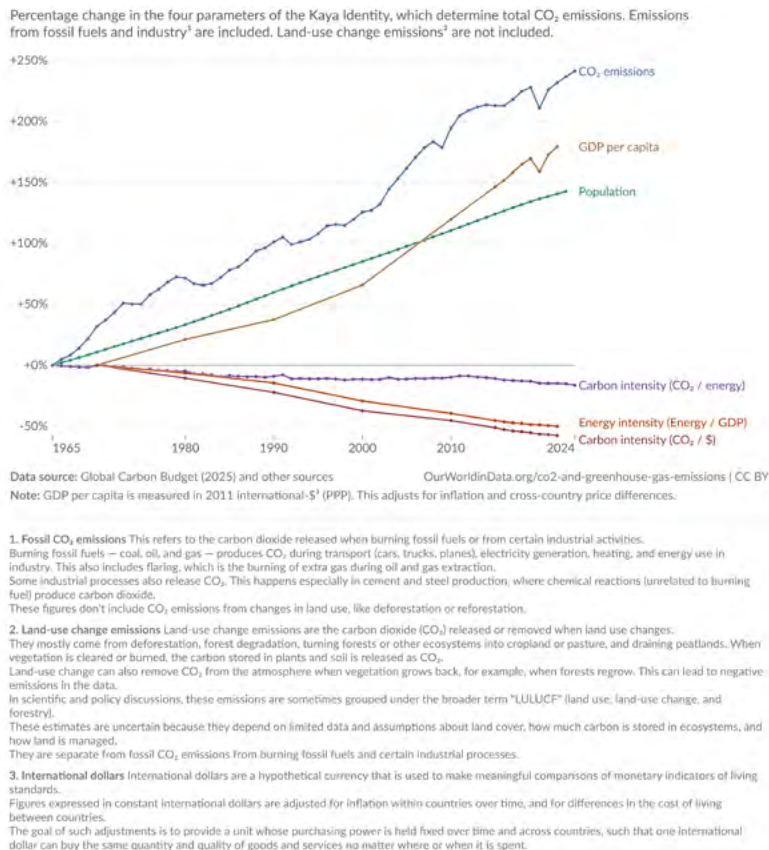


Source: elaboration by Our World in Data based on data from HYDE (2023), GAPMINDER (2022), and UN (2024).

Alongside population growth, energy consumption is even more relevant: it is surpassing the rate of population growth. Energy production is not only part of GDP, but it also fuels it — without energy, GDP would be insignificant. Yet energy production generates costs which are not accounted for in GDP: the destruction of biodiversity and climate change.

The Kaya Identity shows the determinants of CO₂ emissions: number of consumers, GDP per capita, energy used to power every single GDP unit (energy intensity), and the CO₂ emissions for every single energy unit (carbon intensity) (Kaya & Yokobori, 1997, 212). The result resolving the Kaya Identity is that CO₂ emissions are growing steadily, with no sign of even stabilising around current levels (Figure 5).

Figure 5

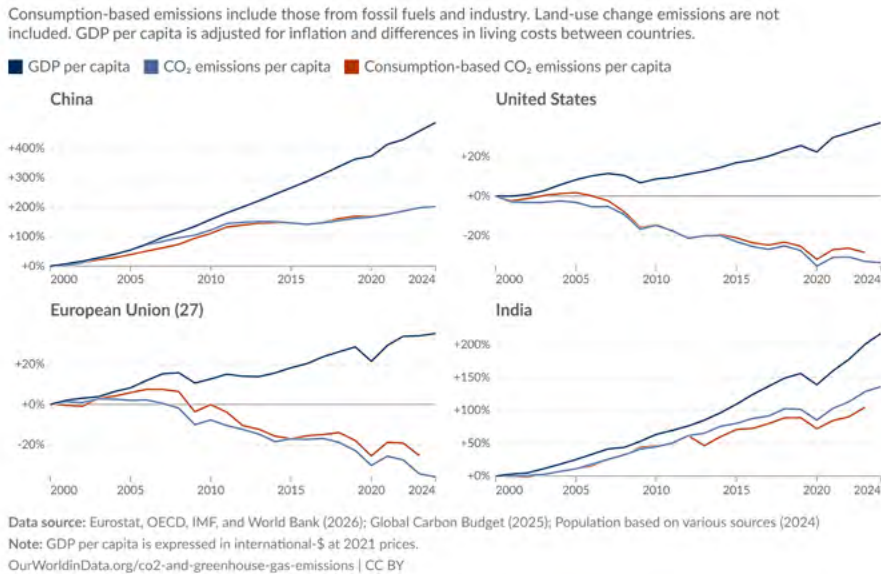


Source: elaboration by Our World In Data based on Global Carbon Budget (2025), U.s. Energy Information Administration (2025), Energy Institute (2025), Bolt And Van Zanden (2023), Hyde (2023), Gapminder (2022), UN (2024).

The good news is that technological progress (energy efficiency in transportation, buildings, and manufacturing) will continue to reduce the amount of energy we use per dollar of GDP: according to Randers (2012), the world's future energy consumption will peak around the 2030s – very soon.

However, the bad news is that during the next 20 years a strong expansion of coal and gas energy sources is expected (which are more convenient in terms of price and political lobbying in many industrialised countries), thwarting the forecast of halving 1990 emissions by 2050 (Randers, 2012, 101). Many higher-income countries have managed to achieve economic growth while reducing emissions; however, decoupling the two is not a reality in manufacturing economies such as China and India – which account for nearly three billion people combined (Figure 6).

Figure 6



Source: elaboration by Our World In Data based on data from Global Carbon Budget (2025), U.s. Energy Information Administration (2025), Energy Institute (2025), Bolt And Van Zanden (2023), Hyde (2023), Gapminder (2022), And UN (2024).

To shift the current trajectory of humanity, it is paramount to analyse the transition from identifying ecological damage to reconstructing economic systems – a fundamental change in paradigm. As Gupta et al. (2024) demonstrate through their research, seven of the eight safe and just Earth-system

boundaries have been transgressed, and the eighth, air pollution, is also transgressed at a local level throughout the world. To divert from the current course of development, humanity must move beyond the notion of the «business as usual» model and adopt a framework of «Earth system justice». The Earth system justice model advocates that, to ensure well-being and reduce harm within and across generations, nations, and communities, and between humans and other species, procedural and distributive justice must be pursued. Most importantly, the model recognises unequal responsibility, unequal exposure and vulnerability, as well as unequal capacities to respond and unequal access to resources.

This research defines a safe and just corridor bounded by Earth-system boundaries and minimum access to resources required for two levels of justice: basic dignity and escape from poverty. This foundation serves as a bridge to introduce the concept of the Doughnut Economics model, by providing — for the first time — the same units of quantification of Earth-system, social, and health perspectives, offering mathematical and ethical scaffolding for Raworth's model. The quantification provides an ecological base and ceiling of the safe and just corridor for the Doughnut while ensuring that the justice boundary accounts for the significant harm caused by environmental damage. In this alternative way of doing business, the economy is not seen as an independent engine of growth but as a distributive tool to keep humanity within a safe and just space, through the transformation of the economic sphere (Gupta et al., 2024:e820).

3.1 Doughnut Economics

*The economy is embedded within society, and society
is embedded within — and dependent upon —
the living world.*

Kate Raworth, *Doughnut Economics* (2017, p. 62)

A new model of human well-being is emerging to guide humanity in the Anthropocene: the Doughnut of Social and Planetary Boundaries (Raworth, 2017). The goal of this model is to offer a visual monitor of progress towards meeting the needs of all people within the means of the living planet, as depicted in Figure 7. The model specifies that humanity must live within the «space» between the two rings: the social foundation as the inner ring and the ecological ceiling as the outer ring. The conceptual framework of social and planetary boundaries recognises that well-being depends on enabling every person to lead a life of dignity and opportunity, while safeguarding the integrity of Earth's life-supporting systems. Millions of people currently

lead lives that fall far short of the social foundation's internationally agreed minimum standards, ranging from nutrition and health care to housing, income, and energy. At the same time, human activity has led to overshooting seven planetary boundaries. Improving humanity's well-being this century depends on eliminating this social shortfall and ecological overshoot simultaneously.

Figure 7 - The Doughnut of Social and Planetary Boundaries



Source: K. RAWORTH, *Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist*, Chelsea Green, White River Junction 2017.

The developed paradigm proposed by Raworth establishes that the economy can and must develop within two limits: not to go beyond the environmental one (see Rockström et al.) and not to fall below the social one (fundamental human rights – the effective implementation of which is now better defined by the Sustainable Development Goals of the United Nations 2030 Agenda). Within this delimited space for human activity, it is necessary to redefine an economy that is generative and regenerative of social values and capable of interacting with the environment rather than exploiting it. A «circular» economy – not only limited to the use of material resources, but also in the dimension of proximity and community relationships. Given the current level of inequality (Figure 8), economists also emphasise that economic activity must be distributive: circularity and redistribution must advance in tandem and cannot be separated.

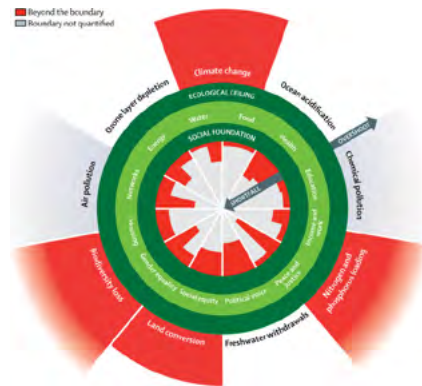
The Doughnut Economy is not a traditional growth model⁶, nor a rigid steady-state⁷, but a dynamic, distributive, and regenerative system, which

⁶ An economic framework focusing on long-term expansion through the accumulation of capital, labour, and technological progress.

⁷ An economic system with constant stocks of physical capital and human population, maintained at a sustainable level by a minimal and constant rate of throughput (material and

requires the growth of sustainable businesses that are generative by design while requiring the planned degrowth of unsustainable ones. The success of humanity is not measured by the volume of financial flow and growth, but by the ability to meet the needs of all people within the means of the planet.

Figure 8 - Shortfalls and Overshoot in the Doughnut



Source: K. RAWORTH, *Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist*, Chelsea Green, White River Junction 2017.

A key concern is that slowing growth in wealthy nations could negatively impact poorer countries by reducing export opportunities. In response, Herman Daly argues that developing economies should transition away from export dependence and instead strengthen domestic markets through an import-substitution model — a structural reorientation that would reduce the vulnerability of lower-income economies to the consumption volatility of wealthier ones, while fostering more resilient and self-sufficient productive systems (Daly, 1996).

4. Unsustainability and the Myth of Sustainable Business

There is no such thing as a sustainable business on an unsustainable planet.

Herman Daly, *Beyond Growth* (1996)

We live in an age where the only paradigm of production and consumption is linear — a one-way flow from resource extraction, production, distri-

energy consumption) (Daly, 1977).

bution, consumption, to waste. From the dawn of the industrial revolution to the present day, the economic system is based on a culture that we may define as «extractivist».⁸ In the Anthropocene era, humanity and the organisations it has created live and use the planet not as a land to be stewarded and preserved, but as a mine to be plundered, at the service of individual needs and in pursuit of profit. It is, in other words, a *modus operandi* based on the systemic extraction of wealth from territories, combined with the accumulation of profits outside them.

Our linear economy is responsible for more than 90% of biodiversity loss (IRP, 2019). According to IPBES, the main drivers of biodiversity loss can be found in five principal causes: changes in (i) land and sea use (human actions have significantly altered 77% of land and 87% of the ocean); (ii) over-exploitation of species and natural resources (as noted in §1, humanity's ecological footprint has consistently exceeded the Earth's biocapacity since 1970, reaching a ratio of 1.78 by 2024; Global Footprint Network, 2024); (iii) climate change; (iv) pollution (approximately 11 million tonnes of plastic are dumped into the world's oceans each year, affecting more than 250 animal species); and (v) invasion of alien species (since 1980, cumulative records of alien species have increased by 40%, negatively affecting native ecosystems) (IPBES, 2023, 28).

Given this context, it is necessary to implement transformative changes in the way we produce and consume. The circular economy can be an alternative to the «take-make-dispose» linear economy model, aiming to tackle the five main drivers of biodiversity loss identified above (Webster, 2017). The circular economy could be the trigger for environmental sustainability by creating awareness of how commodities can be processed, and by developing an effective relationship between environmental protection, biodiversity conservation, and economic development (Daly, 2012; Jia et al., 2020).

After all the premises above, is it possible to enjoy both economic growth and environmental sustainability?

⁸ The term *extractivism* — and its adjectival form *extractivist* — is used here in preference to the more neutral *extractive* for deliberate analytical and political reasons. Whereas *extractive* describes a technical process (the physical removal of resources), *extractivism* carries the broader connotation of a structural logic: a mode of accumulation based on the large-scale, often irreversible removal of natural resources from territories, primarily for export or profit, with costs externalised onto local communities, ecosystems, and future generations (Acosta, 2013; Gudynas, 2015). Originally developed in the context of Latin American political economy to describe commodity-dependent development models, the concept has since been extended to characterise the dominant logic of global capitalism more broadly (Klein, 2014). Its use here is therefore intentional: it names not merely a technical practice but a cultural and political economy — one that treats the natural world as a mine to be exploited rather than a commons to be stewarded.

Various versions of «sustainable development» proposed in economics — such as the «green economy», «circular economy», «blue economy»⁹, and «Green New Deal» — are based on the hypothesis of «decoupling»: the separation of the GDP growth curve from the curve of environmental pressures. The idea that unites them is to continue pursuing constant economic growth (GDP) whilst simultaneously obtaining a reduction in anthropogenic impacts on natural cycles, on the withdrawal of biocapacity, on the use of non-renewable primary resources, as well as on waste discharge and the emission of pollutants.

Parrique et al. (2019) reviewed empirical and theoretical literature to assess the decoupling hypothesis. Their conclusion is both overwhelmingly clear and sobering: not only is there no empirical evidence supporting the existence of a decoupling of economic growth from environmental pressures on anywhere near the scale needed to deal with environmental breakdown, but also, and perhaps more importantly, such decoupling appears unlikely to happen in the future. Decoupling is a myth, and its tentative implementation is even negatively impacting the environment and local communities: the mining of critical raw materials and the construction of large dams for hydropower production to power green economies are the most tangible evidence of this contradiction.

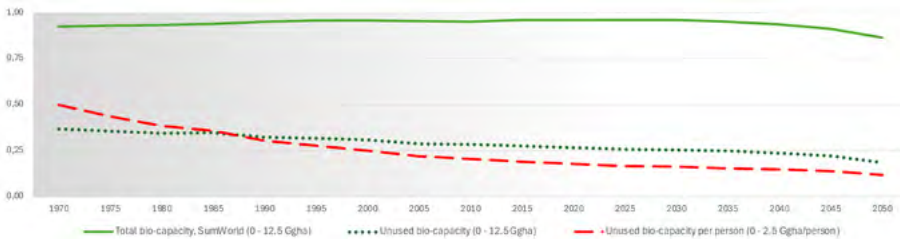
Within this scope, it is relevant to align with Daly's three rules for a steady-state economy, which state that for any business or economy to be truly sustainable it must adhere to three non-negotiable thresholds (Daly, 1996). First, the rate of extraction of renewable resources must not exceed the rate at which they regenerate. Second, the rate of use of non-renewable resources must not exceed the rate at which renewable substitutes are developed. Third, the rate of waste emission must not exceed the environment's capacity to assimilate that waste. These principles of sustainability confirm that the myth of decoupling is not only a failure of policy but a violation of physical limits: when an economy continues to grow, it inevitably puts pressure on at least one or more of these rules, accelerating the depletion of non-renewables faster than substitutes can catch up. Any «green» growth that does not explicitly adhere to these absolute rules creates additional environmental damage in a different form.

The hidden truth in «green» growth strategies is that whenever carbon neutrality is achieved, it will be at the cost of irreversible destruction of biodiversity and conversion of land to economic activities. The pattern of

⁹ Blue growth, or ecologically sustainable economic growth based on the oceans, is a strategy to support economic growth and the creation of jobs needed to reduce poverty in the face of worsening resource constraints and the climate crisis (World Bank & UN DESA, 2017, 5).

degradation of unutilised biocapacity (biologically productive areas of the world not utilised for human purposes), coupled with the projections on global population, serves as an indicator of the extent of wilderness available to each individual in the future (Figure 9). By 2050, most of the untouched nature is anticipated to exist solely within protected areas; the remainder outside these regions will likely have been either cleared for agriculture or developed for urban purposes.

Figure 9 - Global Biocapacity Projections Through 2052



Note. Chart created by the Author. On the vertical axis, the 0–1 range represents the relative value within the specific data range indicated for each series in the legend. The abbreviation "gha" stands for global hectares, with "Ggha" denoting Giga global hectares (0–12.5 Ggha). Data adapted from Data, by J. Randers, 2012, 2052.info (2052.info).

5. Concluding remarks

We shall require a substantially new manner of thinking if mankind is to survive
 Albert Einstein (attributed, 1946)

The choices made today will shape the future. If an alternative path exists, it is likely to emerge from the grassroots — the billions of individuals forming the foundation of society.

The shift required is not merely economic; it is social and cultural. It challenges the prevailing mindset of «I consume, therefore I am» and rejects the notion that personal identity is tied to material possessions. This is not about saving today to consume more tomorrow, as that would merely prolong the same consumerist cycle. Rather, it calls for constructive austerity — a lifestyle choice that is both acceptable and desirable, enabling a structural reduction in production and consumption (Langer, 1992).

The ecological and social crises described throughout this chapter are not merely the result of flawed policies or inefficient technologies — they are the product of a cultural system that has normalised overconsumption as a measure of progress and identity. In high-income economies, the throughput of materials and energy has generated pollution, landscape fragmentation, construction sprawl, and chronic waste mismanagement, all of which exceed the regenerative capacity of ecosystems (Daly, 1996; IRP, 2019). These burdens are not equally shared: the communities least responsible for resource overconsumption bear the heaviest environmental and social costs, while the wealthiest quintiles account for a disproportionate share of global emissions and material footprints (Chancel et al., 2022).

Yet consumer culture operates across income boundaries. The aspiration toward material accumulation — housing, mobility, travel, digital devices — has been internalised as a universal norm, reinforcing demand patterns that perpetuate ecological overshoot regardless of individual purchasing power. The implicit logic is one of identity through possession: I consume, therefore I am. Addressing this dynamic requires more than incremental efficiency gains; it calls for a structural reorientation of what prosperity means.

This is precisely where Langer's (1992) notion of constructive austerity (*austerità propositiva*) retains its full relevance. Choosing to consume less should not be framed as deprivation, moral discipline, or the exclusive prerogative of the already-comfortable. Rather, it represents an act of liberation — a deliberate exit from a system that equates the accumulation of goods with personal worth and social status. It is not a retreat from well-being but a redefinition of it: from quantitative accumulation toward qualitative richness in relationships, shared knowledge, meaningful experiences, and community belonging. In this sense, reducing dependence on material and financial resources means actively reinvesting in human and social capital — the forms of wealth that market prices cannot capture but that most reliably sustain human flourishing (Jackson, 2017; Putnam, 2000).

The degrowth literature reinforces this point: beyond a certain threshold of material sufficiency, additional consumption yields diminishing returns to life satisfaction, while eroding the very social fabric it claims to enhance (Kallis et al., 2018). A deliberate contraction of unsustainable production and consumption — what Raworth (2017) calls the *planned degrowth of unsustainable businesses* — is therefore not a regression but a reallocation of value.

This is not a call for a greener version of the same extractivist model. As Hickel (2020) observes, any framework that retains GDP growth as its primary objective will ultimately reproduce the pressures that transgress

planetary boundaries, regardless of how it is labelled – green, circular, or blue. The transition required is therefore not technological alone but civilisational: a renegotiation of the social contract around sufficiency, equity, and intergenerational responsibility, grounded in the recognition that human dignity does not depend on consumption levels but on the quality of the relationships and communities within which people live.

Whether such a transition will emerge through collective political will, grassroots cultural change, or the compulsion of ecological limits remains uncertain. What is increasingly clear, however, is that the current trajectory is incompatible with a stable Earth system. The choices made today will decisively shape future socio-ecological conditions, while the window for a deliberate and just transition is rapidly narrowing.

The ecological and social boundaries established in this chapter define the outer limits of legitimate business conduct. How international law has attempted to translate those limits into binding and voluntary obligations for corporate actors – and with what results – is the subject of Chapter 3.

Box 1 - Guiding Questions

1. Is sustainable development possible, or are profit and sustainability mutually exclusive?
2. If global resource use is still rising, is green growth a scientific reality or just a corporate narrative?
3. Is a business «sustainable» if it becomes more efficient, but its total pollution continues to increase?
4. Can we stay within the «Planetary Boundaries» without first fixing global inequality?
5. What does the concept of '*constructive austerity*' mean in practice, and is it a realistic alternative to the current model of consumption-driven growth?

Box 2 - Key facts

- As of 2024, humanity's ecological footprint exceeds the Earth's biocapacity by 78%. We are consuming resources at a rate that would require nearly two planets to sustain.¹⁰
- Between 1970 and 2020, there has been an average 73% decrease in the monitored populations of vertebrate wildlife, signalling a collapse in «Biosphere Integrity».
- Nine «Planetary Boundaries» regulate the stability of the Earth system. As of 2025, seven of these have already been breached – including, for the first time, ocean acidification.
- The decoupling of GDP growth from environmental impact has never been demonstrated at the scale required to address ecological breakdown (Parrique et al., 2019).
- The «Doughnut Economics» model shows that achieving environmental safety is impossible without meeting the 12 basic social foundations, such as food, health, and equity.

¹⁰ See <https://lifestylecalculator.com/unfccc> to calculate your personal ecological footprint and compare it to national averages

Box 3 - A Working Glossary

Term	Definition
Biocapacity	The capacity of ecosystems to regenerate the biological resources used by human populations and to absorb the waste they generate, measured in global hectares (gha).
Constructive austerity (austerità come arricchimento)	A concept developed by Alexander Langer (1992) referring to a freely chosen reduction in material consumption, understood not as deprivation but as liberation from consumerist dependency and reinvestment in social and relational well-being.
Decoupling	The hypothesised separation of economic growth (GDP) from environmental pressure, such that output increases while resource use and emissions decline. Distinguished between relative decoupling (environmental intensity decreases per unit of GDP) and absolute decoupling (total environmental impact decreases). The latter, at the scale required, remains empirically undemonstrated.
Doughnut Economics	A framework proposed by Kate Raworth (2017) that defines a safe and just space for humanity between a social foundation (minimum standards of human well-being) and an ecological ceiling (the Planetary Boundaries).
Earth Overshoot Day	The date in a given calendar year on which humanity's demand for ecological resources and services exceeds what the Earth can regenerate in that entire year. First conceptualised by Andrew Simms (2006).
Ecological footprint	A measure of the demand placed by human activity on the biosphere, expressed as the area of biologically productive land and water required to produce the resources consumed and absorb the waste generated.
Extractivism	A structural logic of accumulation based on the large-scale, often irreversible removal of natural resources from territories, with environmental and social costs externalised onto local communities and future generations. Distinct from the more neutral extractive, it denotes a political economy, not merely a technical process (Acosta, 2013; Gudynas, 2015).
Novel entities	Synthetic substances, compounds, and modified organisms introduced into the environment by human activity for which the Earth system has no evolutionary precedent, including plastics, industrial chemicals, and genetically modified organisms.
Planetary Boundaries	Nine Earth-system processes identified by Rockström et al. (2009) within which humanity can safely operate. Transgressing these boundaries increases the risk of abrupt, large-scale, and potentially irreversible environmental change.

Safe and just corridor	The dynamic space, defined by Gupta et al. (2024), within which human development can occur without transgressing Earth-system boundaries while ensuring minimum standards of justice, dignity, and access to resources for all people.
Steady-state economy	An economy characterised by a stable population and stock of physical capital, maintained through a minimal and sustainable rate of material and energy throughput, as theorised by Herman Daly (1977).
Throughput	The total flow of materials and energy through an economic system, from resource extraction to waste generation. In ecological economics, minimising throughput – rather than maximising GDP – is considered the appropriate measure of economic efficiency.
Tipping points	Thresholds in Earth-system processes beyond which self-reinforcing feedback mechanisms are triggered, leading to irreversible changes in the state of the system regardless of subsequent human intervention. Distinct from transgressions, which refer to the crossing of safe operating boundaries.
Wet-bulb temperature	A measure of heat stress that combines air temperature and humidity, representing the lowest temperature to which a surface can be cooled by evaporation. Above approximately 35°C wet-bulb, the human body can no longer cool itself effectively, posing a direct survival risk.
Wasteocene	A concept developed by Marco Armiero (2021) and extended through Jason W. Moore's world-ecology framework, designating the era and logic in which capitalism's systematic toxification of people and places – Cheap Toxification – is not a byproduct of production but one of its structural requirements: every frontier of profit demands sacrifice zones of populations and ecosystems. Analytically complementary to the Planetary Boundaries framework: where Rockström et al. identify the biophysical condition, the Wasteocene names its historical agent.
Capitalocene/ general law of overpollution	Jason W. Moore's world-ecology concept (2016; 2025) situating the origins of today's ecological crisis not in the Industrial Revolution of 1784 but in the class dynamics and imperial expansion of capitalism since 1492. The general law of overpollution – its analytical corollary – holds that for every unit of surplus value, capitalism produces surplus pollution that the biosphere cannot absorb; as waste frontiers close, the costs boomerang, threatening capital itself.

Chapter 3

Business and Human Rights: International Framework

Corporations are not required to solve the world's problems, but they should not be making them worse.

John Ruggie, *Just Business: Multinational Corporations and Human Rights* (2013)

Asude Oruklu¹
University of Padova

This chapter examines the international framework governing business and human rights, tracing its evolution from early «soft law» initiatives to the current normative architecture centred on the United Nations Guiding Principles (UNGPs). The chapter unfolds in three principal movements. First, it establishes the core principles and frameworks that constitute the foundations of business and human rights governance, analysing the contributions of the International Labour Organization (ILO), the Organisation for Economic Co-operation and Development (OECD), and the UN Global Compact, before providing an in-depth analysis of the three pillars of the UNGPs: the state duty to protect, the corporate responsibility to respect, and the right to access to remedy. Second, it explores the intersection of environmental, labour, and community rights, illustrating how integrated human rights due diligence operates in high-risk sectors such as mining and textiles. Third, it examines the implementation and impact of due diligence in practice, contrasting traditional risk assessment with human rights impact assessment,

¹ Note by the volume Author: this chapter was written by Asude Oruklu, currently Ph.D. candidate in “Human Rights, Society, and multi-level governance” at the University of Padova. The bridge passage opening Section 1 and the cross-references to Chapters 5, 8, and 9 inserted in Sections 3 and 6 have been added for analytical coherence across the volume. All substantive arguments are those of the chapter Author.

and demonstrating that effective due diligence is not a one-time compliance exercise but a continuous, systemic process that must evolve alongside the complexities of global supply chains. The chapter concludes that bridging existing governance gaps requires not only consistent implementation of the UNGPs but also binding legal obligations capable of transforming voluntary commitments into enforceable standards.

Keywords: United Nations Guiding Principles (UNGPs); Protect, Respect and Remedy Framework; Human Rights Due Diligence; Corporate Accountability; Governance Gap; Global Value Chains; Soft Law.

Learning Objectives

After reading this chapter, you will be able to:
Trace the historical evolution of the international business and human rights framework, from early soft law instruments to the UNGPs
Explain the three pillars of the UNGPs and distinguish between the state’s duty to protect and the corporate responsibility to respect human rights
Identify the structural connections between environmental degradation, labour rights violations, and community harm across global value chains
Differentiate between human rights impact assessment and traditional risk assessment, and evaluate the strengths and limitations of each
Critically assess the governance gap in business and human rights regulation and evaluate the case for binding legal obligations as a complement to voluntary frameworks

1. Introduction

Chapter 2 established that seven of nine Planetary Boundaries have been transgressed and that the extractivist logic driving this deterioration is not an accident but a structural feature of the dominant economic model. The question that follows is institutional: what international frameworks exist to govern corporate conduct within — and against — this logic, and how adequate have they proven? This chapter traces the evolution of the answer from its earliest formulations to the architecture of the UN Guiding Principles on Business and Human Rights [Ed.].

The World Bank defines a global value chain (GVC) as «the series of stages in the production of a product or service for sale to consumers». These stages are often dispersed across multiple geographical locations, each add-

ing value to the production process (World Bank, 2020, p. 17). The rise of GVCs has been driven by trade liberalisation, advancements in transportation and communication technologies, and the expansion of transnational corporations (TNCs), which have restructured global production networks to maximise efficiency and reduce costs. As a result, the GVC model has led to a highly fragmented and complex network of subcontractors, suppliers, and multinational companies operating across different jurisdictions.

The structural context within which these governance challenges arise is not accidental. As established in Chapter 2, the dominant economic paradigm operates according to an extractivist logic — the systemic removal of value from territories and communities for the benefit of external actors, with environmental and social costs externalised onto local populations and future generations (Acosta, 2013; Klein, 2014). Global value chains are, in many respects, the organisational architecture through which extractivism operates at scale: dispersed across jurisdictions, insulated from accountability, and structurally resistant to the integrated oversight that human rights protection requires. The international frameworks examined in this chapter represent successive attempts to construct precisely such oversight — and the history of their development is, in no small part, a history of the obstacles that extractivist interests have placed in its path.

The growing influence of TNCs in global trade has also exposed significant governance challenges. The dispersed nature of supply chains, the reliance on subcontracting, and the regulatory gaps across jurisdictions have created an environment where exploitative labour practices, as well as environmental pollution, can thrive, often beyond the reach of effective oversight and enforcement (LeBaron, 2021; Marx et al., 2022). Recognising these risks, the first attempts to regulate corporate conduct date back to 1974, when the Economic and Social Council asked a Group of Eminent Persons to study the role of transnational corporations and their impact on the development process (UN Economic and Social Council, 1972). In parallel with the efforts to draft conduct standards for both states and transnational companies, the Organisation for Economic Co-operation and Development (OECD) issued the first version of the Guidelines for Multinational Enterprises (1976), and the International Labour Organisation (ILO) issued the Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy (1977). These early efforts in the form of «soft law» reflected the growing concerns over the unchecked power of global corporations and laid the groundwork for business and human rights frameworks.

Normative governance frameworks have emerged to address both the transnational nature of the problem and the evolving regulatory landscape. However, it is worth noting that the foundational documents of the business and human rights framework do not introduce new normative legal obligations. Instead, they build upon existing obligations and corporate expectations under international law (United Nations High Commissioner for Human Rights, 2011), reflecting a long-standing process of regulating corporate conduct. Foundational examples include the Declaration on Fundamental Principles and Rights at Work (ILO, 1998) and the United Nations Guiding Principles (UNGPs) (UN, 2011). This chapter presents the normative framework in which the UNGPs are situated, their pillars, and the soft law guidelines that support them.

2. Core Principles and Frameworks: Foundations of Business and Human Rights Governance

The foundational normative framework for governance structures in business and human rights is derived, on the one hand, from key human rights conventions and, on the other, from various International Labour Organisation (ILO) Conventions. In 1998, the ILO introduced the Declaration on Fundamental Principles and Rights at Work (FPRW) as «a declaration that does not bring about new principles but clarifies existing ones and adapts their application to political and structural change» (Tapiola, 2018, p. 1).

The Declaration affirms that all ILO Member States, even if they have not ratified the Conventions in question, have an obligation arising from the fact of membership in the ILO to respect, promote, and realise the principles concerning the fundamental rights which are the subject of those Conventions:

Principle	Conventions and protocols
Freedom of association and the right to collective bargaining	Freedom of Association and Protection of the Right to Organise Convention No.87 Right to Organise and Collective Bargaining Convention No.98
Elimination of all forms of forced labour	Forced Labour Convention No.29 Abolition of Forced Labour Convention No.105 Protocol 29 to the Forced Labour Convention
Effective abolition of child labour	Minimum Age Convention No.138 Worst Forms of Child Labour Convention No.182

Elimination of discrimination in Respect of Employment and Occupation	Equal Remuneration Convention No.100 Discrimination (Employment and Occupation) Convention No.111
Occupational Health and Safety ¹	Occupational Safety and Health Convention No. 155 Promotional Framework for Occupational Safety and Health Convention No.187

There are some key features concerning fundamental principles and rights at work.

They are inseparable, interrelated, and mutually reinforcing. There is a strong link between these principles. Where systemic discrimination exists, violations of other FPRWs are likely to follow. Forced labour is often marked by abusive and discriminatory working conditions. Systemic discrimination and social inequality are among the root causes of child labour and forced labour. Where industrial relations are weak or freedom of association is not respected, workers are less empowered, and the risk of informality — and consequently of child labour and forced labour — increases. It is essential to underscore that the ILO's mandate is not to render exploitative practices safer, but to eliminate child labour and promote genuinely decent working conditions as the foundation of a just economy.

They provide enabling conditions for the realisation of other rights. Fundamental principles are the basis of workers' rights. Their realisation will enable the promotion of other rights such as minimum wages, maternal benefits, and social security. Fundamental principles should not be regarded as the sole obligation of businesses, but rather as the initial and foundational step toward achieving decent work, which constitutes the core vision of the ILO.

Their realisation requires an integrated approach. Isolated or fragmented efforts to promote one fundamental principle while overlooking others are unlikely to succeed. An integrated approach is crucial to benefit from their mutually reinforcing nature and to create lasting positive impact.

The implementation of these state commitments has progressively evolved into approaches that more directly focus on companies.

¹ In 2022, the International Labour Conference added safety and health to the Fundamental Principles and Rights at Work, elevating occupational health and safety to the status of a fifth fundamental principle alongside the original four categories established in 1998.

2.1 ILO Declaration on Fundamental Principles and Rights at Work

The ILO Declaration on Fundamental Principles and Rights at Work (1998) constitutes the normative bedrock of international labour standards as applied to business. As noted above, it does not create new legal obligations but consolidates and clarifies existing ones, establishing a universal floor of workers' rights applicable to all ILO member states regardless of ratification status. Its significance for the business and human rights framework lies in its operationalisation of the relationship between state obligations and corporate conduct: by articulating the five fundamental principles as universal expectations, it provides the labour rights dimension of the broader normative architecture within which the UNGPs and subsequent instruments are situated.

2.2 Guidelines and Principles on Corporate Conduct

ILO Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy (MNE Declaration)

Adopted in 1977, the MNE Declaration provides direct guidance to enterprises on social policy and inclusive, responsible, and sustainable workplace practices. It is the only global instrument in this area elaborated and adopted by governments, employers, and workers from around the world, and has been amended several times (in 2000, 2006, 2017, and most recently in 2022). The ILO MNE Declaration is based on the recognition that certain principles derived from international labour standards are directly relevant to enterprises. The MNE Declaration states that all parties should contribute to the realisation of the ILO Declaration on FPRW and its Follow-up adopted in 1998, adding that multinational enterprises, through their operations, can contribute significantly to the attainment of its objectives.

OECD Guidelines for Multinational Enterprises

The OECD Guidelines provide recommendations for responsible business conduct for multinational corporations operating in OECD member states or countries adhering to the Guidelines. Issued in 1976, the Guidelines cover a broad set of issue areas, including human rights and labour rights, information disclosure, environment, bribery, consumer interests, science and technology, competition, and taxation. Although human rights were stipulated in the 2001 version, a dedicated chapter on human rights — replicating the UNGP formulation — was added in the 2011 amendment, expanding the scope of human rights from the host country's international

commitments to a universal standard. The revisions also include the integration of due diligence principles and measures strengthening National Contact Points (NCPs).

The OECD Guidelines are voluntary standards. Although voluntary measures are often criticised for their lack of enforcement and monitoring capacity, National Contact Points present an important mechanism for protection against human rights abuses by multinational companies (Ruggie et al., 2015). While adhering countries have flexibility in setting up their NCPs, they serve as structures promoting activities, handling enquiries, and contributing to the resolution of issues arising from alleged non-observance of the OECD Guidelines in Specific Instances. Between 2001 and 2019, more than 460 specific instances were initiated through NCPs (Marx et al., 2022).

UN Global Compact (UNGC)

In 2000, the United Nations Global Compact was launched as a global corporate responsibility initiative comprising ten principles highlighting business responsibilities in the areas of human rights, anti-corruption, and the environment. The principles concerning human rights derive from the Universal Declaration of Human Rights (United Nations General Assembly, 1948). The UNGC's focus is on inspiring practical action rather than establishing legal definitions (UNGC, 2015). The UNGC has nonetheless been subject to criticism for the absence of clear definitions of «sphere of influence» and «complicity», as well as for its limited enforcement mechanisms — limitations that, as the following sections demonstrate, the UNGPs sought to address directly (Ruggie, 2008).

3. The Intersection of Environment, Labour Rights, and Community Rights

The human rights impacts of business activity do not occur in an environmental vacuum. As Chapter 2 demonstrates, seven of nine Planetary Boundaries have now been transgressed (Kitzmann et al., 2025), with land-system change and biosphere integrity among the most critically violated — processes directly implicated in the extractive industrial activities examined in this section. The safe and just corridor framework (Gupta et al., 2024) makes explicit what the business and human rights literature has long implied: that the protection of human dignity and the protection of the Earth system are not parallel agendas but structurally interdependent ones. A company operating within the formal requirements of the UNGPs whilst

simultaneously contributing to the transgression of planetary boundaries cannot, in any meaningful sense, be described as respecting human rights — because the ecological systems upon which those rights depend are being irreversibly degraded.

This section primarily focuses on labour rights within the broader framework of human rights responsibilities. However, the scope of human rights impact extends beyond the workplace to include the potential adverse effects of business activities on surrounding communities.

In the mining of critical minerals, there are evident labour-related risks such as child labour and occupational health and safety hazards. Yet the impact extends further: pollution, degradation of land, and violations of land rights can severely affect nearby communities. Notably, an estimated 54% of critical mining projects worldwide are located on indigenous peoples' lands (Climate Rights International, n.d.), underscoring the importance of considering community-level impacts alongside workplace conditions - *a structural dynamic examined in depth in Chapter 9 of this volume [Ed.]*. The extractivist logic described in Chapter 2 is nowhere more visible than in critical mineral supply chains, where the structural removal of value from territories — frequently inhabited by indigenous or marginalised communities — is inscribed in the very business model of the sector.

In the textile and apparel sector, a similar multi-layered perspective is necessary. A fashion brand must assess not only working conditions at the garment factory level but also the broader social and environmental consequences across its supply chain. For instance, water-intensive cotton cultivation can strain local water resources, affecting agricultural communities, whilst the chemical-intensive dyeing process can lead to water pollution - *a dimension developed further in Chapter 8 of this volume, which examines the gendered structure of labour exploitation in global value chains [Ed.]*. Moreover, the growing problem of textile waste contributes to environmental degradation and poses health risks in regions where waste is dumped or incinerated. Companies therefore have a responsibility to evaluate the full range of their impacts — from field to factory to post-consumption waste — ensuring that human rights are respected at every stage.

From another angle, companies' efforts to support the climate transition must be designed carefully to avoid creating new forms of vulnerability. In the textile sector, trade unions and advocacy organisations have underscored the need for a «just transition» that safeguards the rights and livelihoods of workers, particularly those already facing poverty or insecure employment (Industrial, 2024; Business and Human Rights Resource Centre, 2025). With-

out such safeguards, climate mitigation strategies risk deepening existing inequalities — a concern that connects directly to the social foundation of the Doughnut Economics model introduced in Chapter 2, which insists that ecological sustainability and social justice cannot be pursued independently of one another.

4. UN Guiding Principles on Business and Human Rights

Adopted in 2011, the Protect, Respect and Remedy Framework is composed of thirty-one Guiding Principles complemented by a commentary, elaborating the meaning of the foundational elements and their implications for law, policy, and practice. The Guiding Principles are the product of a long process of negotiation on binding guidelines for business, spanning from 2005 to 2011, following two failed attempts to create a normative regulatory framework for TNCs in the late 1990s and 1970s. In 2005, the UN Human Rights Council appointed John Ruggie as Special Representative on the issue of Human Rights and Transnational Companies.

According to Ruggie, the «governance gap» created by globalisation is a fundamental driver of corporate complicity in human rights violations, leading to institutional misalignment. The initial surveys conducted by the Special Representative highlighted that a documented proportion of reported abuses occurred in contexts where governance challenges were most pronounced — disproportionately concentrated in low-income countries, post-conflict or conflict-affected regions, and states characterised by weak rule of law and high levels of corruption.

Ruggie argues that the absence of an authoritative focal point enables both states and corporations to operate with limited oversight, effectively allowing them to «fly below the radar». To address these governance gaps, he emphasises the need for an effective regulatory framework that establishes differentiated yet complementary responsibilities for states and businesses (Ruggie, 2008).

4.1 Pillar 1: State Duty to Protect Human Rights

The state's duty to protect human rights constitutes the core element of the UNGP framework, which seeks to clarify the implications of existing legal standards and practices for states. The first pillar represents the 'hard law' component of the framework, as reflected in the language of the document. The term '*duty*' is used in reference to states, signifying both a legal

and moral obligation, whereas ‘*responsibility*’ is applied to business activities, emphasising accountability rather than a binding legal requirement.

In the context of corporate human rights violations, the positive obligations of states - rooted in international human rights law - serve as the foundational basis for state action. Under human rights law, states are required to respect, protect, and fulfil human rights, which entails not only refraining from direct violations but also ensuring protection from abuses committed by third parties, including corporate actors. The duty to protect encompasses rights that may be affected by both public and private entities (ICCPR General Comment, 2004). The first two principles of the UNGPs explicitly reference these positive obligations as foundational principles.

Ruggie (2008) further emphasised that the duty to protect has both legal and policy dimensions. Consequently, the operational principles addressing states extend beyond legal obligations to include policy measures, such as enforcing laws on corporate conduct, implementing additional safeguards for state-owned or state-controlled enterprises, and ensuring policy coherence across governmental actions.

4.2 Pillar 2: The Corporate Responsibility to Respect Human Rights

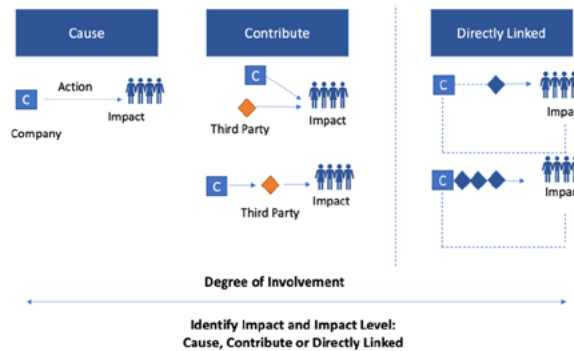
The second pillar of the UNGPs has been established as the ‘soft law’ component of the framework. It defines the baseline corporate responsibility to respect human rights, which extends beyond legal compliance to include social expectations - often referred to as a company’s social license to operate (Ruggie, 2008, 2017).

A key task of the UN Special Representative was to clarify two highly contested terms: «sphere of influence» and «complicity». The concept of sphere of influence conflates two distinct meanings of influence: first, impact, where a company’s activities or relationships directly cause harm, and second, leverage, where a company can influence actors that are causing harm.

Instead of adopting a «sphere of influence», the UNGPs define corporate responsibility through the framework of «causing», «contributing to», or being «directly linked » to adverse human rights impacts (UNGP, 2011, Principle 13). This distinction clarifies the extent of corporate responsibility in different scenarios, ranging from direct involvement in harm to indirect connections through business relationships. The identification of the linkage is indeed critical because it also affects the scope of responsibility of the business for remedy. In cases where it causes an adverse impact, businesses are required to cease or prevent the impact and provide/cooperate in remedi-

ation. In cases where they contributed, they are required to cease or prevent contribution, use leverage to address the remaining impact and provide or cooperate in remediation. In such cases where they are directly linked, they are expected to use leverage to seek to prevent and mitigate (figure 1).

Figure 1 - Degree of Involvement based on UNGP, based on OHCHR Working Group on Business and Human Rights 2018



Source: Adopted from “Putting People First: An Introduction to Navigating Corporate Human Rights,” by Antea Group, 2023 (<https://us.anteagroup.com/news-events/blog/introduction-to-navigating-corporate-human-rights>). Copyright 2023 by Antea Group.

One of the most significant and widely recognised contributions of the UN Guiding Principles is the introduction of the concept of human rights due diligence. This concept outlines the measures that companies must undertake to identify, prevent, mitigate, and address adverse human rights impacts. The UNGPs define due diligence as ‘a process that includes assessing actual and potential human rights impacts, integrating and acting upon the findings, tracking responses, and communicating how impacts are addressed’ (UNGP, 2011, Principle 17).

Due diligence is an operational practice, and its implementation presents various complexities and challenges. Since the adoption of the UNGPs, supplementary guidance has been developed to establish a shared understanding among companies regarding due diligence expectations (OHCHR, 2012, 2018). Nonetheless, the methodologies and tools employed to operationalise due diligence remain highly diverse, reflecting variations in industry practices, regulatory frameworks, and corporate approaches (OHCHR, 2018).

4.3 Pillar 3: Access to Remedy

The third pillar of the Guiding Principles is dedicated to access to remedy through judicial and non-judicial mechanisms. Grievance mechanisms encompass both judicial and non-judicial approaches, including state-based and non-state-based forms. They are defined as ‘any routinised process (State-based or non-state-based or judicial or non-judicial) in which grievances concerning business-related human rights abuse can be raised, and remedy can be sought’ (UN, 2011, Commentary 25).

Unlike state-based mechanisms, non-state-based non-judicial mechanisms operate independently of State control, without State involvement in their creation or activities (Zagelmeyer et al., 2018). The UNGP framework views both forms as complementary components of a broader remedy system. Effective non-judicial mechanisms can offer benefits such as faster remediation, lower costs, and international reach. However, they should not undermine legitimate trade unions or limit access to judicial or other types of grievance mechanisms (UN, 2011, Commentary 29).

The UNGPs present grievance mechanisms as a crucial component of the human rights due diligence processes. This approach is also reflected in other international instruments addressing businesses, such as the OECD Guidelines for Multinational Enterprises (OECD, 2023) and the ILO Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy (ILO 2022). The UNGP framework presents two key functions for non-judicial grievance mechanisms. Firstly, these mechanisms function as early warning systems and support the identification of human rights impacts. Secondly, they contribute to access to remedies. Once issues are identified, these mechanisms facilitate the early and direct remediation of adverse impacts, thereby minimising harm and preventing grievances from escalating further (UN, 2011).

«Effective remedy» is a relatively well-developed legal concept in connection with international human rights law and judicial mechanisms. It encompasses both procedural dimensions – which refer primarily to the availability and accessibility of remedial mechanisms – and substantive dimensions, concerning the type of reparation provided. According to the UNGPs, «remedy may include apologies, restitution, rehabilitation, financial or non-financial compensation, and punitive sanctions, as well as the prevention of harm through, for example, injunctions or guarantees of non-repetition» (UN, 2011, Commentary 25). The nature of the remedy is case-specific, determined by the circumstances and the needs of the affected rights-holders. This variety is often conceptualised as the «bouquet of remedies» – a

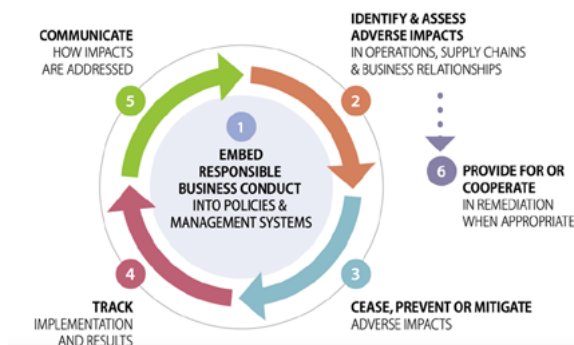
crucial component of comprehensive redress. However, what constitutes an effective remedy remains a subject of debate. Procedurally, the UNGPs underscore that a remedy must be compatible with human rights standards.

5. Implementation and Impact

5.1 How Does Due Diligence Work in Practice? Risk Management Vs Due Diligence

The UN Guiding Principles define due diligence through various interconnected processes: identification, mitigation, and remedy. The due diligence process can be incorporated within a broader enterprise risk management system, provided it goes beyond simply identifying and managing risk. Each process has different objectives. There exist diverse approaches to conducting due diligence, as well as various supporting resources. For instance, the OECD Due Diligence Guidance for Responsible Business Conduct illustrates the due diligence steps as six major activities organised in a cycle rather than a linear process (OECD, 2018): embedding responsible business conduct into policies and management systems; identifying and assessing adverse impacts; ceasing, preventing, or mitigating adverse impacts; tracking implementation and results; communicating impacts; and cooperating in and providing remedy.

Figure 2 - Due Diligence Process



Source: OECD Due Diligence Guidance for Responsible Business Conduct (p. 21), by OECD, 2018, OECD Publishing (<https://doi.org/10.1787/15f5f4b3-en>).

While there is broad consensus on the three core components of due diligence - namely, identification, mitigation, and remedy - the practical implementation of these elements and the selection of appropriate tools remain subjects of ongoing discussions. When examined from the perspective of risk identification, the due diligence process may appear similar to traditional risk management. However, it is important to recognise the limitations of conventional risk management systems in addressing human rights concerns. The table below illustrates some of the differences between ‘impact’ oriented methods, such as human rights impact assessments and risk assessments:

Human Right Impact Assessment vs Risk Assessment

	Human rights impact assessment	Risk assessment
Focus	HRIAs focus primarily on the actual or potential impacts of business activities on the rights of individuals and communities. The objective is to identify, assess, and mitigate adverse human rights impacts on rights-holders, including vulnerable groups.	Traditional risk assessments centre on the risks to the business, such as financial, legal, reputational, and operational risks. Human rights may be included, but from the standpoint of how violations could harm the company.
Scope	HRIAs adopt a rights-holder perspective, emphasising the real-world effects on people rather than just business risks. It examines how the company’s operations, products, and services might affect human rights across the value chain.	The assessment typically covers risks to the business and considers legal compliance, stakeholder expectations, and potential liabilities.
Perspective	The approach prioritises stakeholder engagement and is rooted in international human rights standards, aiming to ensure companies do not cause, contribute to, or are linked to human rights abuses.	This approach is more inward-looking, assessing risks that could affect the company’s success, sustainability, or profitability, with human rights risks considered to the extent that they pose a threat to the business.
Method	Mostly qualitative methods (focus groups, interviews, surveys)	Risk rating methods (severity* likelihood)

When prioritising among identified impacts, the UNGPs suggest three key criteria: scope (how many people could be affected), scale (how serious the impact would be for the victim), and remediability (whether remedy can restore the victim to their prior position).

Organisations may employ both methods at different stages, keeping in mind the key characteristics of due diligence:

Due diligence is a comprehensive and continuous process. Although often interpreted through a risk management lens - where risk is primarily associated with reputational harm - such an approach may fall short in capturing the broader human rights dimensions. A holistic and collaborative approach is required, particularly in the context of global supply chains where all actors are interconnected. Effective risk mitigation, therefore, demands a whole supply chain strategy.

Responsibility for human rights impacts cannot be delegated through contractual arrangements alone. While policy commitments and supplier codes of conduct serve as useful tools to communicate expectations and raise awareness, they do not guarantee compliance. Many human rights violations stem from deeply rooted structural issues and must be addressed at their source - for example, by examining the relationship between purchasing practices and child labour.

Moreover, due diligence is incomplete without a robust remediation mechanism and regular monitoring. Transparency regarding actions taken on the ground and their actual impact is essential for continuous improvement. Due diligence is not a one-time activity; it is an ongoing process that must adapt to the evolving complexities of global supply chains and the systemic nature of human rights challenges.

6. Concluding Remarks

Since their endorsement in 2011, the UNGPs have fundamentally reoriented the international discourse on corporate accountability. They have influenced a proliferation of national action plans, multi-stakeholder initiatives, and certification schemes; prompted major multinational corporations to adopt human rights policies aligned with the three-pillar framework; and catalysed the incorporation of due diligence principles into the standards of the OECD (2023) and the ILO (2022). This normative diffusion represents a genuine achievement — one that would have been difficult to anticipate in the decades of failed attempts that preceded the Ruggie mandate.

Yet the limits of this achievement are equally significant. The voluntary architecture of the UNGPs has produced what Ruggie himself acknowledged as an uneven landscape: robust commitment among leading corporations, persistent non-compliance among others, and a structural absence of ac-

countability mechanisms capable of reaching the most harmful actors in the most opaque supply chains. The governance gap that motivated the creation of the UNGPs has not been closed; in many sectors and jurisdictions, it has widened alongside the expansion of global value chains.

Three structural challenges deserve particular emphasis as this volume moves forward. First, the asymmetry of obligations: states bear legal duties under international human rights law, while corporations bear only a responsibility — a distinction that, as the comparative analysis of due diligence approaches in this chapter demonstrates, generates systematically different incentive structures and outcomes. Second, the complexity of supply chains — *as the case studies in Chapters 5, 6, and 7 of this volume demonstrate in detail [Ed.]*: as the mining and textile examples illustrate, human rights impacts are distributed across multi-tiered networks of suppliers, subcontractors, and intermediaries in ways that render conventional compliance approaches structurally inadequate. Third, the intersection of human rights and ecological harm: the framing established in Chapter 2 makes clear that no due diligence framework can be considered adequate if it addresses labour and community rights whilst ignoring the environmental degradation that underpins them.

These challenges provide the principal rationale for the binding legislative turn examined in Chapter 4, where the European Union's Corporate Sustainability Due Diligence Directive (CSDDD) and the Corporate Sustainability Reporting Directive (CSRD) represent the most ambitious attempt yet to translate the voluntary architecture of the UNGPs into enforceable legal obligations. Whether that translation will prove adequate to the scale of the problem is a question to which this volume returns repeatedly — and one that admits no easy answer. What is clear is that the UNGPs have established the normative foundation upon which any credible binding framework must be built: the recognition that human dignity, corporate accountability, and ecological sustainability are not competing values but mutually constitutive conditions of a just economy.

Box 1 - Guiding Questions

1. To what extent is the state's duty to protect implementable when compared to the scale and influence of large transnational corporations?
2. What role can business play if the state is unable to fulfil its role as a duty-bearer to protect human rights?
3. Can a corporation preform Human Rights Due Diligence if its primary duty is to maximize shareholder value?
4. Will remedy ever restore the victim to the same or equivalent position as before the harm occurred?
5. How do the structural features of global value chains – multi-tiered subcontracting, jurisdictional fragmentation, and supply chain opacity – systematically undermine the effectiveness of human rights due diligence as currently conceived?

Box 2 - Key Facts

- The three pillars of the UNGPs establish differentiated yet complementary responsibilities: the state's duty to protect, the corporate responsibility to respect, and the right to access to remedy.
- The five core principles of business and human rights – freedom of association and collective bargaining, elimination of forced labour, abolition of child labour, elimination of discrimination in employment, and occupational health and safety – apply to all ILO member states regardless of ratification status.
- Corporate conduct at the international level is guided by three principal instruments: the ILO MNE Declaration, the OECD Guidelines for Multinational Enterprises, and the UN Global Compact – all of which are voluntary in nature.
- The UNGPs introduced the concept of human rights due diligence as a continuous, systemic, and rights-holder centred process, distinct from conventional corporate risk management.
- The governance gap identified by Ruggie (2008) – the mismatch between the transnational reach of corporations and the territorially bounded nature of state legal systems – remains the defining structural challenge of the business and human rights field, unresolved by the voluntary architecture of the UNGPs.
- Between 2001 and 2019, more than 460 specific instances were initiated through OECD National Contact Points, demonstrating both the relevance and the limitations of non-judicial grievance mechanisms.
- An estimated 54% of critical mining projects worldwide are located on indigenous peoples' lands, illustrating the structural intersection of environmental, labour, and community rights across extractive supply chains.

Box 3 - Key Concepts: A Working Glossary

Term	Definition
Bouquet of remedies	The concept that effective remedy for human rights violations is not singular but encompasses a range of measures — apologies, restitution, rehabilitation, financial and non-financial compensation, and guarantees of non-repetition — tailored to the circumstances and needs of affected rights-holders.
Complicity	A corporation's involvement in human rights harm caused primarily by another party, whether through direct assistance, facilitation, or the provision of practical support that enables the harm. Under the UNGPs, complicity is operationalised through the concepts of causing, contributing to, and being directly linked to adverse impacts.
Corporate responsibility to respect	The second pillar of the UNGPs, establishing a baseline expectation that all business enterprises avoid causing or contributing to adverse human rights impacts and address such impacts when they occur. Unlike the state's duty to protect, this responsibility does not derive from legal obligation but from social expectations — the company's social licence to operate.
Due diligence (human rights)	A continuous, proactive process through which companies identify, prevent, mitigate, and account for adverse human rights impacts across their operations and value chains. Defined in UNGP Principle 17 as encompassing impact assessment, integration of findings, tracking of responses, and communication of how impacts are addressed.
Global Value Chain (GVC)	The full range of activities involved in the design, production, and delivery of a product or service, typically dispersed across multiple geographical locations and corporate actors. GVCs are the primary organisational structure through which transnational corporations manage production and through which human rights risks are distributed and often obscured.
Governance gap	The structural deficit in international regulation identified by John Ruggie (2008), arising from the mismatch between the transnational reach of corporations and the territorially bounded nature of state legal systems, creating spaces in which corporate human rights violations can occur beyond effective oversight or accountability.
Hard law	Legally binding obligations under international or domestic law, enforceable through judicial or quasi-judicial mechanisms. In the business and human rights context, hard law obligations apply primarily to states under international human rights law.
Human Rights Impact Assessment (HRIA)	A rights-holder centred methodology for identifying and evaluating the actual or potential effects of business activities on the human rights of individuals and communities. Distinguished from traditional risk assessment by its focus on harm to people rather than risk to the business.

National Contact Points (NCPs)	Structures established by governments adhering to the OECD Guidelines for Multinational Enterprises, responsible for promoting the Guidelines and handling complaints — known as Specific Instances — regarding alleged non-compliance by multinational corporations.
Rights-holders	Individuals and communities whose human rights may be affected by business activities, including workers, local residents, indigenous peoples, and other potentially vulnerable groups. The concept shifts the analytical frame from corporate risk to human impact.
Soft law	Non-binding normative instruments — such as guidelines, principles, declarations, and codes of conduct — that establish standards of conduct without creating enforceable legal obligations. Much of the international business and human rights framework, including the UNGPs, operates in this register.
Social licence to operate	The informal, ongoing acceptance or approval granted by local communities and broader society to a corporation's operations. Unlike a legal licence, it is not issued by any authority but must be continually earned through conduct that meets or exceeds social expectations regarding human rights and environmental responsibility.
Sphere of influence	A concept used in earlier corporate responsibility frameworks to define the scope of a company's human rights responsibilities based on proximity and leverage. Rejected by the UNGPs in favour of the more precise causing / contributing to / directly linked framework, which ties responsibility to specific impacts rather than to broad relational proximity.
Transnational Corporation (TNC)	An enterprise that controls production, services, or assets in more than one country through foreign direct investment or other means. TNCs are the primary corporate actors in global value chains

Chapter 4

Corporate Social and Environmental Accountability: EU Regulations for Sustainable Business Practices

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University of Padova

The EU is not just a market. It is a project of values — and those values must be visible in every supply chain that feeds it.

European Parliament (2021)

This chapter examines three landmark European Union legal frameworks at the intersection of corporate conduct, human rights, and environmental sustainability: the Corporate Sustainability Due Diligence Directive (CS3D, 2024/1760), the Regulation on Deforestation-Free Products (EUDR, 2023/1115), and the Conflict Minerals Regulation (2017/821). Building on the international soft law architecture established in Chapter 3, the chapter analyses how the EU has sought to translate voluntary principles into binding legal obligations, thereby addressing the governance gap that voluntary frameworks have proved unable to close. The CS3D mandates large companies to conduct human rights and environmental due diligence across their entire value chains, with enforceable obligations, director liability, and civil remedies for victims. The EUDR establishes stringent traceability and due diligence requirements for seven key commodities linked to deforestation, introducing a risk-based country classification system and significant penalties for non-compliance. The Conflict Minerals Regulation imposes supply chain due diligence on EU importers of tin, tungsten, tantalum, and gold originating from conflict-affected and high-risk areas. For each framework, the chapter analyses origins, core requirements, timeline

of application, and critical limitations — including the influence of industry lobbying, the disproportionate burden on developing-country exporters, and the structural contradictions of a green transition that risks replicating extractivist patterns in new supply chains. The chapter concludes that, whilst the EU legislative turn represents a significant advance, the effectiveness of these frameworks ultimately depends on political will, enforcement capacity, and their integration into a broader cultural paradigm shift away from extractivist growth.

Keywords: Corporate Sustainability Due Diligence Directive (CS3D); EU Deforestation Regulation (EUDR); Conflict Minerals Regulation; human rights due diligence; supply chain accountability; binding regulation; governance gap; extractivism.

Learning Objectives

After reading this chapter, you will be able to:
Explain the rationale for the European Union’s transition from voluntary to binding corporate sustainability frameworks, and situate this transition within the broader governance gap identified in Chapter 3
Describe the core requirements, scope, timeline, and enforcement mechanisms of the CS3D, the EUDR, and the Conflict Minerals Regulation
Compare the UNGPs and the CS3D in terms of their legal nature, scope, and enforcement mechanisms
Critically evaluate the limitations and contradictions of each framework, including the role of industry lobbying, the burden on developing-country exporters, and the structural tensions of the green transition
Assess the extent to which EU binding regulation can drive meaningful change in global supply chains, and identify the conditions — legal, political, and cultural — necessary for effective implementation

1. Introduction

Chapter 3 of this volume established the international normative architecture for business and human rights, analysing the contributions of the ILO, the OECD, and the UN Global Compact, and providing an in-depth analysis of the three pillars of the UN Guiding Principles on Business and Human Rights (UNGPs): the state duty to protect, the corporate responsibility to respect, and the right to access to remedy. As Chapter 3 demonstrates,

the voluntary architecture of the UNGPs, whilst normatively significant, has proved structurally insufficient to close the governance gap that enables corporate human rights violations at scale. The present chapter examines the European Union's response to that insufficiency: a suite of binding legislative instruments that seek to transform soft law expectations into enforceable legal obligations.¹

Early industrialisation saw numerous instances of labour exploitation, poor working conditions, and environmental degradation. The intersection of business practices and human rights has garnered significant attention in recent years, driven by increasing awareness of the impact of corporate activities on individuals and communities. The international community has responded with a series of frameworks aimed at integrating human rights considerations into business operations. More recently, the European Union has taken significant steps to codify corporate human rights responsibilities through the adoption of the Corporate Sustainability Due Diligence Directive (CS3D), which mandates that companies operating within the EU conduct due diligence to identify, prevent, mitigate, and account for the negative human rights and environmental impacts of their operations (Council of the European Union, 2024; Directive [EU] 2024/1760, 2024).

The ecological dimension of this legislative turn is equally significant. As Chapter 2 establishes, seven of nine Planetary Boundaries have been transgressed (Sakschewski & Caesar et al., 2025), with land-system change, biosphere integrity, and biogeochemical flows among the most critically violated – processes directly driven by the commodity supply chains that the EUDR and the Conflict Minerals Regulation seek to govern. The EU frameworks examined in this chapter are therefore not merely instruments of corporate accountability; they are, at least in aspiration, instruments of Earth system governance. Whether their design and enforcement are adequate to that ambition is a central question that this chapter addresses.

European companies, particularly larger ones, operate in increasingly complex environments and rely on global value chains. The vast number of suppliers, both within and outside the EU, coupled with the intricacy of these chains, makes it challenging for firms to identify and mitigate risks related to human rights violations and environmental impacts. However, as more businesses adopt due diligence practices, the availability of data on these adverse impacts grows, making it easier to uncover and address such risks.

¹ See Chapter 3 for a detailed analysis of the UN Guiding Principles on Business and Human Rights (UN, 2011), the OECD Guidelines for Multinational Enterprises (OECD, 2023), and the OECD Due Diligence Guidance for Responsible Business Conduct (OECD, 2018).

Many EU companies are adopting due diligence measures aligned with international voluntary standards for responsible business conduct. These practices help identify risks and enhance the resilience of supply chains. Nonetheless, significant challenges persist, including legal uncertainty, the complexity of value chains, market pressures, information gaps, and the associated costs. As a result, the benefits of voluntary due diligence have not been consistently realised across different sectors and companies.

Larger firms are increasingly integrating due diligence processes to gain a competitive edge and meet the growing demand for sustainable practices. This helps them avoid reputational damage from consumers and investors, who are more attuned to social and environmental concerns. Research shows that companies taking voluntary action often focus on the first tier of the supply chain (tier 1), whereas human rights abuses and environmental harm typically occur further down the value chain. Furthermore, few companies address all human rights and environmental issues in their due diligence processes. Since these practices remain voluntary, they offer neither legal protection for companies nor recourse for victims if harm occurs.

Progress has been slow and uneven. Voluntary efforts have not resulted in widespread improvements across sectors, and negative externalities from EU production and consumption continue to be observed both within and outside the Union. Some EU companies have been linked to human rights violations and environmental damage in their supply chains,² including forced labour, child labour, unsafe working conditions, worker exploitation, greenhouse gas emissions, pollution, and biodiversity loss. Deforestation and forest degradation are among the most pressing environmental challenges, contributing significantly to biodiversity loss. If left unchecked, deforestation could result in the disappearance of undisturbed tropical forests by 2050. Addressing deforestation is therefore crucial to tackling the global crises of climate change and biodiversity loss.

Effective corporate responsibility cannot rely solely on individual corporate willingness to improve practices, nor can it result in fragmented domestic laws. Approximately 70% of companies participating in the 2021 public consultation on Justice and Fundamental Rights³ supported the need for a harmonised EU legal framework on due diligence for human rights and environmental impacts.

² See case studies in Part II of this volume, Chapters 5, 6, 7, 8, and 9, for sectoral and country-level illustrations of the human rights and environmental violations discussed in this chapter.

³ See Summary Report Ares(2021)3297206, https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12548-Sustainable-corporate-governance/F_en

In response, the EU is pursuing legislation to promote corporate responsibility for human rights and environmental protection, both in company operations and across their supply chains. Under the EU Green Deal, more than 150 regulations and directives address the goal of climate neutrality by 2050. Among these, the EU Corporate Sustainability Reporting Directive (2022/2464, CSRD) requires certain companies to report on sustainability performance based on the concept of «double materiality». This means companies must report both on how climate change poses financial risks and opportunities for their business, and on how their business activities impact people and the environment.

Since any recorded economic impact arises from management actions — or inaction — effective risk management at the firm level requires companies to analyse their operations and supply chains thoroughly. Due diligence is thus a critical tool for managing risks that could negatively affect a company's financial health, legal standing, or reputation.

The EU legislation seeks to establish common corporate due diligence standards to ensure respect for human rights and environmental protections, foster a level playing field for businesses, and prevent fragmented approaches among Member States. The new regulations require companies to identify, prevent, mitigate, and address their adverse human rights and environmental impacts through robust governance, management systems, and appropriate measures.

This chapter examines three key legal frameworks directly related to business practices: the Corporate Sustainability Due Diligence Directive (2024/1760), the Regulation on Deforestation-Free Products (2023/1115), and the Conflict Minerals Regulation (2017/821). It explores their origins, principles, and impacts, analysing their influence on corporate behaviour and assessing their strengths and limitations in driving meaningful change.

2. The Corporate Sustainability Due Diligence Directive

2.1 Background

The European Union has recently intensified its focus on promoting corporate responsibility, transitioning from voluntary guidelines to mandatory regulations. This shift aims to enhance sustainability and protect fundamental rights in business practices. Driven by a growing recognition of the need for more robust regulatory frameworks to ensure that businesses do not

contribute to human rights abuses and environmental degradation, a key development is the Corporate Sustainability Due Diligence Directive (CS3D).

Entered into force on 25 July 2024, the CS3D serves two primary purposes: to harmonise regulations across EU member states and to establish fair competition within the EU's internal market by setting consistent standards for corporate sustainability practices. By creating a level playing field and requiring companies to address the impacts in their value chains, the Directive aims not only to improve companies' competitiveness but also to enhance their resilience and long-term financial performance, by directing financial capital toward sustainable business models.

Companies' competitiveness increasingly relies on their ability to ensure sustainable practices throughout their value chains. Consumers are increasingly aware of the choices they make with their purchases, raising demands for sustainable and responsibly sourced products and services. Employees — in particular younger ones — are sensitive to the sustainability performance of their employer. Investors are also increasingly considering sustainability issues when evaluating investment opportunities.

The CS3D represents a significant development in the EU's approach to embedding human rights and environmental considerations into corporate governance, by imposing legally enforceable requirements on major corporations. Under the CS3D, large companies must take proactive measures to prevent and reduce negative impacts on human rights, environmental sustainability, and climate change throughout their entire supply and value chains. This directive is a crucial component of the broader European Green Deal initiative.

This directive builds on existing EU initiatives, such as the Non-Financial Reporting Directive (NFRD 2014/95), concerning environmental, social, and human rights-related risks, impacts, measures, and policies, and the EU Action Plan on Human Rights and Democracy, but introduces more stringent and enforceable requirements.

This Directive will also underpin the Sustainable Finance Disclosure Regulation (SFDR, Regulation 2019/2088) that applies to financial market participants and financial advisers.⁴

⁴ Under the SFDR, financial market participants — including investment funds, portfolio managers, insurance undertakings selling insurance-based investment products, and undertakings providing pension products — and financial advisers are required to publish, among other things, a statement on their due diligence policies with respect to the principal adverse impacts of their investment decisions on sustainability factors, on a comply-or-explain basis. For companies with more than 500 employees, publication of such a statement is mandatory. The Commission is empowered to adopt regulatory technical standards on the sustainability indicators relating to the various types of adverse impacts.

This Directive complements:

- Directive 2011/36/EU on preventing and combating trafficking in human beings and protecting its victims — a comprehensive legal framework to effectively combat all forms of exploitation, in particular forced labour, sexual exploitation, begging, slavery or practices similar to slavery, servitude, or the exploitation of criminal activities, or the removal of organs.
- Directive 2009/52/EC providing for minimum standards on sanctions and measures against employers of illegally staying third-country nationals (Employers' Sanctions Directive) — prohibits the employment of irregularly staying third-country nationals, including victims of trafficking in human beings.
- Regulation (EU) 2020/852 on the establishment of a framework to facilitate sustainable investment (Taxonomy Regulation) — a transparency tool that facilitates investment decisions and helps tackle *greenwashing* by providing a categorisation of environmentally sustainable investments in economic activities that also meet a minimum social safeguard.
- Regulation (EU) 2017/821 laying down supply chain due diligence obligations for Union importers of four specific minerals and metals, and their ores, originating from conflict-affected and high-risk areas (Conflict Minerals Regulation or «3TG» Regulation) — requires EU companies to ensure they import tin, tungsten, tantalum, and gold from responsible and conflict-free sources only, and to put in place independent third-party audits of supply chain due diligence.
- Regulation on Deforestation-Free Products by introducing value chain due diligence related to activities not covered by the Deforestation Regulation but which might be directly or indirectly leading to deforestation (see §3 below).

In addition, the Directive sets out an obligation for large companies to adopt and put into effect a transition plan for climate change mitigation, which aims to ensure, through best efforts, that the business model and strategy of the company are compatible with the transition to a sustainable economy and with the limiting of global warming to 1.5°C in line with the Paris Agreement and the objective of achieving climate neutrality as established in Regulation (EU) 2021/1119, including its intermediate and 2050 climate neutrality targets.

In February 2025, the Omnibus I package was published with the stated goal of simplifying EU rules, boosting competitiveness, and supporting in-

vestment capacity. This «stop-the-clock» proposal was agreed upon in December 2025 through a cooperation of the European Parliament, the Council of the EU, and the European Commission, targeting amendments to both the CSRD and the CS3D (Etifor, 2026). As the European Environmental Bureau (2026) has documented, however, the Omnibus packages have introduced legal uncertainty, rewarded laggards over frontrunners, and – as the European Ombudsman found – involved maladministration in the Commission’s own regulatory process, skipping or curtailing essential steps of its Better Regulation rules.

2.2 Core Requirements

2.2.1 Timeline of Application

The CS3D, as amended by Directive (EU) 2025/794, establishes a gradual and selective application. EU Member States shall comply with this Directive and communicate the relevant texts of adoption to the Commission by 26 July 2026. The rules were additionally postponed and amended through the adoption of the Omnibus I package in December 2025 (see figure 1):⁵

- i. From 26 July 2028, EU-based companies with over 3,000 employees and an annual net worldwide turnover exceeding €900 million, or non-EU companies with a turnover of more than €900 million generated in the European Union.
- ii. From 26 July 2029, EU-based companies with over 1,000 employees and net worldwide turnover exceeding €450 million and ultimate parent companies of a corporate group meeting the thresholds on a consolidated basis, or non-EU companies with a net turnover of more than €450 million generated in the European Union.
- iii. Under the Omnibus I package, the CS3D will apply only to companies with more than 5,000 employees and an annual net turnover of €1.5 billion in the EU, or non-EU companies with a turnover of €1.5 billion in the EU. The due diligence directive will apply from 26 July 2029, with a transposition deadline of 26 July 2028 (see Figure 1 for the full extent of the changes).

Micro companies and SMEs are excluded from the proposed rules. However, they may still be affected as direct or indirect business partners in the

⁵ The Directive applies only if the relevant employee and turnover thresholds are met in two consecutive financial years. Specific rules govern the calculation of employee numbers: part-time employees are counted on a full-time equivalent basis, and temporary agency workers and workers in non-standard forms of employment are included if they fulfil the criteria for worker status as established by the Court of Justice of the European Union (2024).

supply chains of larger companies that are subject to the regulations. As a result, they might be asked to gather and share information on actual or potential adverse impacts, and to take measures to address these in accordance with the obligations of their larger clients. To protect SMEs and reduce their burden, the Directive includes provisions designed to support them and prevent large companies from shifting compliance responsibilities onto smaller partners.

Figure 1 - Changes Introduced by Omnibus I to CSDD

CATEGORY	INITIAL TEXT	FINAL TEXT OMNIBUS I
SCOPE OF REPORTING	Company with more than 1,000 employees on average and had a net worldwide turnover of more than €450 million in the last financial year.	Large EU corporations with more than 5,000 employees and a net annual turnover of over €1.5 billion.
SCOPE OF REPORTING NON-EU COMPANIES	Not-EU companies generated a net turnover of more than €450 million in the Union in the financial year.	Not-EU companies with a net annual turnover of over €1.5 billion in the EU.
TIMELINE	Member States to transpose within 2 years of entry into force (26 July 2027).	Postponement of the CSDD's transposition deadline by another year to 26 July 2028. Companies will have to comply with the new measures by July 2029.
MATERIAL SCOPE OF DUE DILIGENCE	Covered actual and potential adverse impacts across the entire value chain.	Focus narrowed to severe and likely adverse impacts, reducing exposure to marginal risks.
CIVIL LIABILITY	Planned a UE harmonized civil liability regime.	Removed. Remain in force a National civil liability, based on the internal laws of the Member States.
CLIMATE TRANSITION PLAN	Obligation to adopt transition plans aligned with the Paris Agreement.	Removed.
SUPERVISION AND SANCTIONS	Administrative sanctions required, with limited guidance on proportionality.	The maximum applicable penalties are reduced to 3% of the company's global turnover.

Source: Adapted from “Omnibus I: what changes for the CSRD and the CSDDD,” by Etifor, 2026 (<https://www.etifor.com/en/whats-going-on/pacchetto-omnibus-csrd-csddd/>). Copyright 2026 by Etifor S.r.l.

2.2.2 Due Diligence Obligations

Companies are required to conduct human rights and environmental due diligence throughout their operations and supply chains, on a risk-based approach: companies can prioritise their actions when they cannot address all impacts simultaneously, and they must adopt appropriate measures when identifying and addressing adverse impacts.

The core due diligence duties for companies within the scope of the Directive include the following actions:

- i. Integrating due diligence into corporate policies and management systems.
- ii. Identifying and assessing actual and potential adverse human rights and environmental impacts.
- iii. Taking appropriate actions to prevent, mitigate, and, where necessary, remediate adverse impacts. As a measure of «last resort», when all other actions have failed and where severe impacts are at stake — and only where these impacts outweigh the foreseeable adverse consequences

of disengagement — companies are required to suspend or terminate a business relationship.

- iv. Engaging in meaningful consultations with affected stakeholders.
- e. Establishing and maintaining a notification mechanism and a complaints procedure.
- vi. Monitoring and periodically evaluating the effectiveness of their due diligence measures.
- vii. Publicly communicating on their due diligence efforts, according to the Corporate Sustainability Reporting Directive and the European Sustainability Reporting Standards.

The Directive introduces specific responsibilities for company directors to oversee the due diligence process and ensure that sustainability risks are integrated into corporate strategy. Directors are expected to act in the best interests of the company whilst considering the impacts on stakeholders and the environment.

In line with the UNGPs (*see Chapter 3 of this volume*), the Directive emphasises the importance of providing access to remedy for victims of corporate misconduct. Companies must establish grievance mechanisms and cooperate with judicial and non-judicial bodies to address complaints and provide effective redress.

In line with the Paris Agreement and the 2050 climate neutrality target set in Regulation (EU) 2021/1119 (European Climate Law), companies have a legal obligation to adopt and put into effect a transition plan for climate change mitigation which aims to ensure, through best efforts, that the business model and strategy of the company are compatible with the transition to a sustainable economy and with the limiting of global warming to 1.5°C. If a company fails to adopt a transition plan with the required content or to update the plan, including the actions to reach the targets, it may face administrative sanctions.

Companies must publicly disclose information on their due diligence processes and outcomes, providing stakeholders with insights into their efforts to address human rights and environmental risks. This includes annual reports detailing the steps taken to comply with the directive's requirements and the results achieved.

2.3 Implications

The implementation of the CS3D presents both challenges and opportunities for businesses and regulators.

The main benefits are expected to be:

- A harmonised legal framework in the EU, creating legal certainty and a level playing field.
- Greater customer trust and employee commitment.
- Better awareness of negative human rights and environmental impacts.
- Better risk management (including liability risks), enhanced resilience, increased innovation, and competitiveness.
- Increased attractiveness for sustainability-oriented employees, investors, and public procurement procedures.

However, key challenges include ensuring consistency and coherence in the application of due diligence standards across diverse sectors and jurisdictions, as well as addressing the resource constraints faced by smaller companies.

To enforce implementation, the Directive introduces incentives (award criteria for public and concession contracts), injunctions (orders to cease or adopt certain conduct), and sanctions (including fines) by the competent national supervisory authorities. Sanctions must be effective and dissuasive, but also proportionate. A European Network of Supervisory Authorities will ensure a coordinated approach among national authorities and allow for co-operation in enforcement cases and information sharing.

When companies intentionally or negligently fail to comply with their duty to prevent, mitigate, bring to an end, and minimise adverse impacts, and this failure causes or contributes to damage, they can be held liable for the damage suffered. They will not be liable if only the business partner(s) in their chain of activities caused the damage. Where a company is found liable, it will be required to provide full compensation to the victim for the damage suffered. This shall not, however, lead to overcompensation through punitive damages.

The directive also offers significant opportunities to enhance corporate accountability and foster a culture of respect for human rights and environmental sustainability. By mandating rigorous due diligence processes, the CS3D aims to create a level playing field for businesses and drive improvements in corporate conduct.

2.4. Comparative Analysis of the UNGPS and the CS3D

The UN Guiding Principles on Business and Human Rights and the EU Directive on Corporate Sustainability Due Diligence represent two critical frameworks for promoting corporate accountability and protecting human rights. Both frameworks aim to influence corporate behaviour by promoting respect for human rights and environmental sustainability, whilst the

UNGPs have contributed to the development of national and international standards and have been integrated into various corporate policies and practices.

However, the UNGPs and the CS3D differ significantly in their scope and application. The UNGPs provide a global framework applicable to all businesses, regardless of size, sector, or location. In contrast, the CS3D specifically targets large companies and certain high-risk sectors within the EU, with defined thresholds for employee numbers and turnover.

A key distinction between the two frameworks lies in their enforcement mechanisms. The UNGPs are non-binding guidelines that rely on voluntary adoption and implementation by states and businesses. In contrast, the CS3D is a binding directive with enforceable obligations, backed by potential sanctions for non-compliance. With its binding requirements, the CS3D is expected to drive more consistent and comprehensive implementation of due diligence processes within the EU. The CS3D's enforcement mechanisms further illustrate its robust nature, as it delineates penalties for non-compliance, including significant fines and operational repercussions. This contrasts sharply with the UNGPs, which primarily rely on voluntary compliance — necessitating a cultural shift within business practices that has proved challenging to achieve at the required pace and scale.

As these frameworks continue to be implemented and refined, they hold the potential to drive substantial improvements in corporate conduct and the protection of human rights globally. They offer a comprehensive roadmap for businesses to integrate human rights and sustainability into their operations and supply chains. Despite the progress made, challenges remain in ensuring consistent implementation and enforcement — particularly following the narrowing of the CS3D's scope under the Omnibus I package, which raises fundamental questions about the durability of regulatory ambition in the face of competitiveness pressures.

3. The EU Regulation on Deforestation-free Products

3.1 Background

The European Union's Regulation 2023/1115 (EUDR) marks a significant milestone in the global effort to mitigate deforestation and forest degradation. This comprehensive regulation imposes stringent requirements on operators and traders, ensuring that products and commodities introduced to

the EU market are sustainably sourced and do not contribute to deforestation.

The regulation is underpinned by several key considerations and objectives outlined in its preamble:

- **Global deforestation crisis:** Recognising the urgent need to address the global deforestation crisis, a major contributor to climate change and biodiversity loss. The regulation aims to reduce the EU's consumption footprint on land and promote sustainable consumption patterns.
- **International commitments:** Aligning with international agreements such as the Paris Agreement, the UN Sustainable Development Goals (SDGs), and the Convention on Biological Diversity. It emphasises the EU's leadership role in global efforts to halt deforestation and forest degradation.
- **Legislative framework:** Building upon existing EU legislation, such as the EU Timber Regulation and the EU Action Plan on Forest Law Enforcement, Governance and Trade (FLEGT). It aims to create a coherent and comprehensive framework for addressing deforestation and forest degradation.
- **Due diligence system:** Establishing a robust due diligence system that operators and traders must follow to ensure their products are deforestation-free. This includes collecting detailed information, conducting risk assessments, and implementing risk mitigation measures.
- **Risk-based approach:** Introducing a risk-based approach to due diligence, categorising countries and regions into high, standard, and low-risk categories. This allows for tailored due diligence requirements based on the level of risk associated with deforestation in different regions.
- **Transparency and accountability:** Emphasising transparency and accountability in supply chains. Operators and traders are required to submit due diligence statements to competent authorities and make relevant information available to the public.
- **Support for SMEs:** Recognising the challenges faced by small and medium-sized enterprises (SMEs) in complying with the regulation. It provides specific provisions to support SMEs, such as allowing them to rely on due diligence statements from their suppliers.
- **Capacity building and technical assistance:** Highlighting the need for capacity building and technical assistance to support countries and stakeholders in implementing the regulation. This includes cooperation

with producing countries to improve governance and enforcement of forest laws.

- **Penalties and enforcement:** Establishing penalties for non-compliance, including fines, confiscation of non-compliant products, and exclusion from public procurement processes. It also outlines the responsibilities of competent authorities in monitoring and enforcing the regulation.
- **Review and reporting:** Setting out provisions for regular review and reporting on the implementation and effectiveness of the regulation. The European Commission is required to submit periodic reports to the European Parliament and the Council.
- **Stakeholder engagement:** Recognising the importance of engaging stakeholders, including civil society organisations, indigenous peoples, and local communities, in the implementation of the regulation. It aims to ensure that their rights and interests are respected.
- **Environmental and social safeguards:** Emphasising the need to consider environmental and social safeguards, including the protection of human rights, labour rights, and the rights of indigenous peoples. The regulation requires that products comply with the relevant legislation of the country of production concerning these safeguards.
- **Innovation and technology:** Encouraging the use of innovative technologies and practices to enhance the traceability and transparency of supply chains. This includes the use of remote sensing, blockchain, and other digital tools to monitor compliance with the regulation.
- **Long-term vision:** Setting out a long-term vision to achieve deforestation-free supply chains and promote sustainable development. It emphasises the need for continuous improvement and adaptation to address emerging challenges and opportunities.

3.2 Core Requirements

The regulation is founded on three core conditions that must be met for products and commodities to be marketed or exported in the EU:

1. **No contribution to deforestation or forest degradation:** Products must not contribute to deforestation or forest degradation. The regulation applies to seven key commodities (cattle, cocoa, coffee, palm oil, rubber, soya, and wood) and numerous derived products. This broad coverage ensures comprehensive oversight of supply chains. The regulation applies to goods produced on or after 29 June 2023, with specific provisions for timber and timber products. Notably, products must not be sourced from land that has been converted from forest

to agricultural use after 31 December 2020, even if such conversion is legal in the country of production.

2. Compliance with relevant legislation: Products must comply with the social and environmental regulations of the country of production, including those related to land-use rights, forest management, environmental protection, labour, tax, and human rights.
3. Due diligence statement: Products must be accompanied by a due diligence statement, resulting from a process that involves collecting detailed information, conducting risk assessments, and mitigating identified risks. This ensures compliance with the regulation and poses a negligible risk of contributing to deforestation. The due diligence statement is central to the regulation, outlining the obligations of operators and traders. Before introducing products into the market, a due diligence statement must be submitted to the competent authorities via a European register. The European Commission will categorise countries based on risk levels to aid this process. SMEs are exempt from carrying out due diligence statements themselves and can instead rely on due diligence statements provided by the operators or traders supplying them with the products.

The European Commission selected 2020 as the cut-off date for determining whether products are considered deforestation-free under the regulation. The choice of this date warrants critical scrutiny. The impact assessment provides several justifications — alignment with international commitments, cost moderation for operators, and the availability of modern monitoring tools. However, the proposals submitted during the legislative process by influential industry associations reveal a clear pattern of lobbying pressure toward later cut-off dates: the European Cocoa Association proposed 2018, the Roundtable on Sustainable Palm Oil proposed 2018, and FEFAC's Soy Sourcing Guidelines suggested no later than 2020. These proposals, advanced by economically powerful actors with direct financial interests in the outcome, stand in tension with the European Parliament's more ambitious proposal of no later than 2015 — a date more consistent with the regulation's stated objective of halting EU-driven deforestation.

The 2020 cut-off risks leaving unaddressed a significant period of forest conversion that preceded formal regulatory scrutiny. As this volume argues throughout, the governance of extractivist supply chains cannot be reduced to compliance with thresholds established through negotiation with the very actors whose conduct the regulation seeks to constrain. If monitoring data following implementation reveals significant deforestation occurring

between 2015 and 2020 in EU-linked commodity supply chains, a revision of the cut-off date will be both analytically warranted and politically necessary.

3.2.1 Timeline of Application

The new EU regulation came into effect on 29 June 2023. Initially, compliance requirements were scheduled to take effect from 30 December 2024. However, in October 2024, the European Commission proposed to postpone applicability to 30 December 2025 for large companies and 30 June 2026 for micro- and small enterprises.

As of 17 December 2025, the European Parliament adopted a further postponement, allowing one additional year for compliance. Large companies and traders have until 30 December 2026, whilst small and micro-companies — with under 50 employees and an annual turnover of less than €10 million — have until 30 June 2027.

These extensions were intended to provide additional preparation time for EU member states, businesses, traders, and exporting countries to establish comprehensive due diligence frameworks covering relevant commodities and products associated with deforestation risks.

The postponements of the compliance deadlines present an opportunity for businesses to strengthen their compliance approaches and develop robust, deforestation-free supply chain mechanisms. Although the extensions provide temporary respite, it is imperative that companies take proactive measures not merely to fulfil EUDR requirements when they become applicable, but also to demonstrate their commitment to sustainability and environmental stewardship. This window should be leveraged to strengthen systems, enhance due diligence processes, and cement a commitment to eliminating deforestation from their operations and supply networks.

3.2.2 Enforcement and Penalties

National authorities will enforce the regulation through regular checks and potential penalties for non-compliance:

Financial penalties that correlate with the environmental impact and product value. These fines can escalate for repeat offenders, potentially reaching up to 4% of the company's previous year's annual turnover in the EU, with the possibility of surpassing the economic advantage gained.

Seizure of the products in question or the profits derived from their sale.

Temporary bans from participating in public tenders or receiving government funding.

In cases of severe or repeated violations, businesses may be temporarily barred from trading specific products within the EU. Additionally, they could lose the privilege of using simplified due diligence procedures.

3.3 Implications

Regulation (EU) 2023/1115 represents a comprehensive and ambitious effort by the European Union to address the global deforestation crisis and promote sustainable consumption and production patterns, protect biodiversity, and combat climate change. By establishing strict requirements for due diligence, transparency, and accountability, the regulation aims to ensure that products and commodities introduced to the EU market do not contribute to deforestation, forest degradation, and biodiversity loss.

The success of the regulation will depend on its effective implementation and enforcement by Member States and EU institutions. The regulation has significant implications for global trade, particularly for countries that export agricultural and forestry products to the EU. Exporting countries will need to ensure that their products meet the EU's stringent requirements, which may involve significant changes to production practices and supply chain management.

3.3.1 Disproportionate Burden on Exporters From Developing Countries

Many developing countries rely heavily on agricultural and forestry products for their economic stability and growth. The stringent requirements of the regulation may pose significant challenges for these countries:

- **Resource constraints:** Developing countries often lack the financial resources, technological infrastructure, and institutional capacity to implement the detailed due diligence processes required by the regulation. Where bribery and corruption are common practices, the effectiveness of the due diligence process may be compromised. This can make it difficult for exporters to comply, potentially leading to a loss of market access to the EU.
- **Cost of compliance:** The costs associated with compliance — including the implementation of new production practices, supply chain traceability systems, and independent audits — can be prohibitively high for small-scale producers and exporters in developing countries. These costs can erode profit margins and reduce the competitiveness of their products in the global market.
- **Risk of market exclusion:** Non-compliance with the regulation can result in exclusion from the EU market, which is a significant export

destination for many developing countries, with severe economic repercussions including job losses and decreased foreign exchange earnings.

To address these challenges, it is crucial that the EU provides support to developing countries through capacity-building initiatives, financial assistance, and technology transfer.

3.3.2 Lobbying From Multinational EU-based Firms

Another significant aspect of the regulation's development and implementation is the lobbying efforts by multinational EU-based firms. In the context of Regulation (EU) 2023/1115, multinational firms may lobby for:

Flexible compliance mechanisms that allow them to leverage existing sustainability initiatives and certifications, reducing compliance costs and administrative burden.

Differentiated risk categories based on country of origin, allowing them to benefit from simplified due diligence processes for low-risk countries.

Support for SMEs, recognising the challenges faced by small suppliers in developing countries, including technical assistance and financial support.

Whilst lobbying efforts can help shape more practical and implementable regulations, there is a risk that they may also lead to loopholes and weakened enforcement if not adequately balanced with robust oversight and stakeholder engagement.

4. The EU Conflict Mineral Regulation

4.1 Background

Minerals such as tin, tungsten, tantalum, and gold (known as 3TG) originating from conflict zones can fund armed groups, forced labour, human rights abuses, corruption, and money laundering. These «conflict minerals» may end up in everyday products like mobile phones, automobiles, electronics, and jewellery. It is challenging for consumers to ascertain whether a purchased product inadvertently finances violence and illegal activities abroad.

Conflict-affected and high-risk areas (CAHRAs) are those with highly sought-after mineral resources involved in armed conflicts, fragile post-conflict states, or weak governance and systematic violations of international law and human rights. Various stages of the 3TG mineral supply chain — such as extraction, refining, and transportation — present opportunities to

divert proceeds towards armed groups or criminals, perpetuating conflicts, violence, and abuses.

This issue is prevalent in resource-rich but conflict-prone countries, as exemplified by the well-documented situation in eastern Democratic Republic of Congo and neighbouring nations, which has drawn significant attention from advocacy groups over the past 10–15 years.

The EU Conflict Minerals Regulation 2017/821, aligned with the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas,⁶ aims to prevent human rights abuses related to mineral extraction by ensuring EU imports of 3TG originate solely from responsible and conflict-free sources — covering all EU imports, regardless of origin.

This regulation complements other global responsible sourcing regulations, such as OECD guidelines since 2011, the US Dodd-Frank Act Section 1502 since 2010, the Chinese Due Diligence Guidelines for Responsible Mineral Supply Chains, and laws in some African countries. However, four years after enforcement, there remains significant room for improvement in transparency, traceability, enforcement, and the EU's active engagement with producing countries and supply chain stakeholders.

4.2 Core Requirements

The EU regulation is founded on three pillars:

1. Due diligence: EU-based importers of raw material must implement management systems and conduct independent third-party supply chain due diligence audits to identify and assess risks in their supply chains, ensuring minerals are sourced responsibly.
2. Responsible sourcing by global and EU smelters and refiners: Smelters and refiners worldwide must source these minerals responsibly, not contributing to conflict.
3. Transparency and public reporting: Companies must publicly disclose information about their supply chain due diligence policies and practices.

Annual import volume thresholds are set to exempt small importers from the obligations and avoid imposing an excessive burden on them, provided that such thresholds guarantee the application of importers' obligations to

⁶ Organisation for Economic Co-operation and Development (OECD), Due Diligence Guidance on Responsible Mineral Supply Chains from Conflict-Affected and High-Risk Areas, Version 3, 2016. <https://mneguidelines.oecd.org/OECD-Due-Diligence-Guidance-Minerals.pdf>

no less than 95% of the total volumes imported into the European Union (Article 1(3)).

4.2.1 Timeline of Application

The European Union's Conflict Minerals Regulation 2017/821 was signed in June 2017 and came into full force for EU importers from 1 January 2021.

4.3 Implications

The regulation applies directly to between 600 and 1,000 EU-based raw material importers. Indirectly, the EU Regulation affects approximately 500 smelters and refiners, whether based inside the EU or not. This is because EU importers are required to identify the smelters and refiners in their supply chains and verify whether they have adequate due diligence practices in place. Whenever EU importers find smelters' and refiners' practices to be insufficient or associated with risks, they must manage and report on this.

To assist companies, the European Commission will create a «white list» of global smelters and refiners which source responsibly. By leveraging these mechanisms, downstream companies can more effectively ensure responsible sourcing throughout their supply chains.

4.3.1 The Definition of CAHRAs

The EU Conflict Minerals Regulation applies to imports of 3TG minerals «originating in conflict-affected and high-risk areas» (Article 2(f)), defined as areas experiencing armed conflict, fragile post-conflict situations, weak or non-existent governance such as failed states, and widespread violations of international law, including human rights abuses (Regulation [EU] 2017/821, Art. 2[f]).

Whilst these categories are not explicitly defined in the Regulation itself, the European Commission's Recommendation 2018/1149 clarifies that the definition aligns with the OECD Due Diligence Guidance. It covers key concepts such as «state of armed conflict» under international humanitarian law, «fragile post-conflict» areas with weak governance capacity, and «failed states» with a collapse of state authority.

To provide guidance, the Commission tasked RAND Europe to publish an indicative, regularly updated list of conflict-affected and high-risk areas (CAHRAs). The latest list (as of June 2025), reviewed and updated on a quarterly basis, includes 30 countries — among them Ukraine, Lebanon, and Pakistan — due to ongoing cross-border conflicts, as well as specific con-

flict-affected regions within some countries such as Colombia, South Sudan, Ethiopia, Mozambique, and Myanmar.⁷

The omission of the Occupied Palestinian Territories from the CAHRAs list is analytically significant and warrants explicit acknowledgement. The definition of CAHRAs encompasses areas of armed conflict, fragile governance, and systematic violations of international law – criteria that, by any objective assessment, apply to the Occupied Palestinian Territories under Israeli military control since 1967. The International Criminal Court issued arrest warrants for senior Israeli officials for war crimes and crimes against humanity in November 2024 (ICC, 2024); the International Court of Justice found it «plausible» that Palestinian rights under the Genocide Convention were at risk, issuing binding provisional measures (ICJ, 2024). The structural absence of the Occupied Palestinian Territories from a list designed precisely to identify such contexts raises serious questions about the political determinants of regulatory scope and the selective application of international legal standards. The corporate dimension of this omission – including the role of business enterprises in sustaining the infrastructure of occupation – is examined in depth in Chapter 9 of this volume, whilst Chapter 12 addresses the structural analysis of Albanese (2025) on the relationship between economic activity and the occupation's political economy.

Conversely, mineral extraction is often linked to human rights abuses beyond armed conflicts or fragile states. For instance, Ghana – ranked sixth in world gold production – has documented widespread child labour in mining (Human Rights Watch, 2015), but is not currently on the CAHRAs list as it is considered relatively stable. Whilst the list may not capture all contexts of mineral-related abuses, its expansive approach covering all continents aims to create a level playing field for conflict and non-conflict regions, thereby preventing market distortions.

4.3.2 The Material Scope of the Regulation

Regulation (EU) 2017/821 covers the general classification of tin, tantalum, tungsten, and gold (3TG), including raw minerals, ores, concentrates, and refined metals. The geographical scope applies to imports from or transiting through Conflict-Affected and High-Risk Areas (CAHRAs).

Responsible trade in minerals from CAHRAs is put to the test where limited scope, downstream exemptions, and transit routes are utilised to obscure a mineral's true origin. The first important example is the DRC–Rwan-

⁷ Remarkably, Israel and the Occupied Territories of Palestine – since 1967 and including the ongoing conflict in Gaza – are not included in this list. See §4.3.1 for analytical discussion and cross-references to Chapters 9 and 12.

da Mineral Corridor. The due diligence obligations under Regulation (EU) 2017/821 formally bind only EU importers of 3TG raw minerals, excluding semi-finished or finished products (Macchi, 2022). The situation in the DRC reveals that the M23 movement⁸ operates at a local level, sustaining its military objectives through a criminal economy facilitated by laundering illicitly extracted minerals through Rwanda (Behalal, 2025). MEPs in the European Parliament have called for the suspension of the EU–Rwanda memorandum of understanding on critical raw materials, which underscores the systemic tensions and points to the links between the regional mineral trade and the destabilisation of the Democratic Republic of Congo (European Parliament, 2025).

A second example is Sudanese gold, which illustrates the necessity of a regional approach to supply chain due diligence. Research by Soliman and Baldo (2025) demonstrates that gold acts as a primary fuel for the Sudanese civil war, with the Sudanese Armed Forces (SAF) and the Rapid Support Forces (RSF) utilising gold revenues to sustain military operations and navigate smuggling networks extending beyond Sudanese borders. Despite the best efforts of EU importers to adhere to their due diligence requirements and institutional sanctions to regulate this trade, targeted action in cooperation with the UAE – the main pipeline – is imperative (Soliman & Baldo, 2025).

4.4. Comparative Analysis of U.S. Dodd-Frank Act and the EU Conflict Minerals Regulation

The US Dodd-Frank Act Section 1502 (2010) was the pioneering legislation that addressed the link between mineral trade and armed conflict, focusing on due diligence in the mining industry. Whilst the EU Conflict Minerals Regulation (2017/821) draws inspiration from the US Dodd-Frank Act, the two instruments also feature significant differences (see Figure 2).

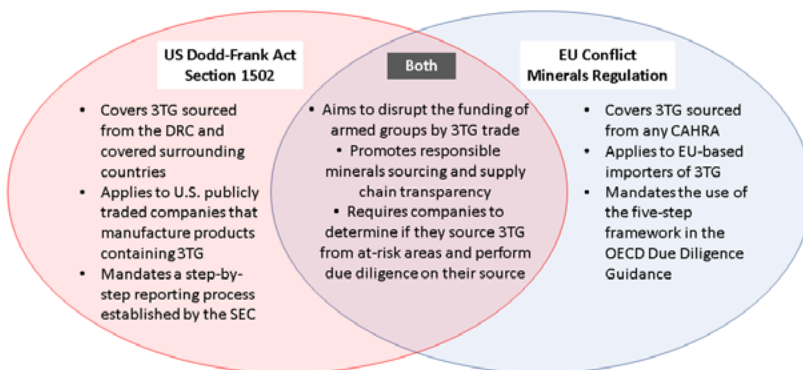
The geographic distinction defines a relevant divergence in scope: the US Dodd-Frank Act focuses primarily on the Democratic Republic of the Congo and its adjoining countries (Angola, Burundi, Central African Republic, Republic of the Congo, Rwanda, South Sudan, Tanzania, Uganda, and Zambia) (U.S. Securities and Exchange Commission, 2012). The EU regulation adopts a global risk-based approach through the regularly updated CAHRAs list.

⁸ The March 23 Movement (M23) is a rebel military group primarily operating in the eastern Democratic Republic of the Congo. Its name derives from the failed peace agreement of 23 March 2009. The group has been documented as a major actor in the illicit mineral trade that finances armed conflict in the region.

Another significant difference lies in the regulatory mechanism. In the US, the framework applies only to publicly traded companies for which 3TG is determined to be essential to the functionality of production or the product. Such companies are required to file a report to the US Securities and Exchange Commission, trace the 3TG to the smelter of origin via a Reasonable Country of Origin Inquiry (RCOI), and complete a Specialised Disclosure (SD) form to verify how the origin of the 3TG was determined. If the 3TG did not originate from the DRC or surrounding countries, the results of the RCOI are included in the SD form; if it did originate from those countries and was not sourced from scraps or recycled materials, due diligence must be conducted and a Conflict Minerals Report (CMR) produced. The EU regulation, by contrast, imposes direct and binding due diligence obligations on all mineral importers regardless of corporate status, requiring adherence to the OECD Due Diligence Guidelines.

Despite their notable differences, the US Dodd-Frank Act Section 1502 and the EU Conflict Minerals Regulation share a fundamental objective: to disrupt the funding of armed groups through 3TG trade, to promote responsible mineral sourcing and supply chain transparency, and to require companies to determine whether they source 3TG from at-risk areas and perform due diligence on their sourcing (Source Intelligence, 2024).

Figure 2 -Differences and similarities between the EU Conflict Minerals Regulation and Section 1502 of the U.S. Dodd-Frank Act



Source: Adapted from “EU Conflict Minerals Regulation vs. U.S. Dodd-Frank Act Section 1502”: Intelligence, 2020.

5. Concluding Remarks

The three EU frameworks examined in this chapter — the CS3D, the EUDR, and the Conflict Minerals Regulation — were conceived as instruments of a regulatory paradigm that placed human rights and environmental protection at the centre of corporate governance. Their ambition was genuine: to close the governance gap that voluntary frameworks had proved unable to bridge, and to make European consumption accountable for the harms it generates at the far ends of global supply chains.

Yet, as this chapter has demonstrated throughout, that ambition has been progressively diluted. The EUDR's 2020 cut-off date reflects the fingerprints of industry lobbying on regulatory design. The Conflict Minerals Regulation's downstream exemptions create structural vulnerabilities that mineral laundering networks have already learnt to exploit — as the DRC–Rwanda corridor and Sudanese gold cases illustrate. And the CS3D, which entered into force in July 2024 as the most ambitious due diligence instrument in the world, was significantly narrowed by the Omnibus I package of December 2025 before it had produced a single enforcement action: its threshold raised from 1,000 to 5,000 employees, its application delayed to 2029, its scope compressed under the banner of «simplification» and «competitiveness».

The Political Wind Has Shifted — And the Direction Matters

The EU's sustainability debate has undergone a structural reorientation. What began as an ecological project — anchored in the European Green Deal, the Paris Agreement, and the recognition that planetary boundaries set non-negotiable limits on economic activity — has been progressively reframed as an industrial strategy. The «Clean Industrial Deal» paradigm prioritises economic competitiveness, strategic autonomy, and industrial decarbonisation over the ecological and social foundations that motivated the original legislative framework. Policymakers and industry leaders now openly debate how to «reconcile» climate ambitions with economic burdens — a framing that Chapter 2 of this volume identifies as structurally flawed, because it treats the economy and the Earth system as negotiating parties of equivalent standing, when they are not.

The European Environmental Bureau's letter to EU Heads of State and Government of 5 February 2026 documents the consequences of this reorientation with precision: the poor implementation of existing environmental laws costs the EU €180 billion annually; soil degradation alone costs €97 billion per year; PFAS pollution could cost €1.7 trillion by 2050; industrial air

pollution between 2012 and 2021 cost an estimated €2.7–4.3 trillion. These are not abstract externalities — they are costs borne by citizens, ecosystems, and future generations, whilst the profits that generate them are captured by a small number of corporate actors (European Environmental Bureau, 2026). The EEB's conclusion is unambiguous: «there is no competitiveness on an ever more degraded planet». The Omnibus packages, rather than achieving simplification, have introduced legal uncertainty, rewarded laggards over frontrunners, and — as the European Ombudsman found — involved maladministration in the Commission's own regulatory process (European Environmental Bureau, 2026).

From the Global South, the Verdict Is Equally Unambiguous

Francois Kamate — activist from North Kivu, winner of the 2026 Alexander Langer International Prize, and co-founder of Extinction Rebellion Rutshuru — speaks from the ground on which these regulatory abstractions land. In the forests of the Democratic Republic of Congo, where approximately half of the world's coltan reserves lie beneath a conflict that has lasted thirty years, the green transition is not experienced as progress. It is experienced as a new iteration of the same extractivist logic: «We need justice and progress, not colonialism labelled green» (Kamate, in Segantin, 2026). The cobalt that powers European electric vehicles is extracted by an estimated 100,000 miners, including children, in conditions of toxic exposure and legal impunity. The minerals that flow through Rwanda and Uganda into certified international supply chains are laundered through the same governance gaps that the EU Conflict Minerals Regulation was designed to close — but has not. The Virunga National Park, a UNESCO World Heritage Site and one of the largest carbon sinks on the continent, faces oil and gas concessions granted by a government whose fiscal choices are constrained by external debt mechanisms that, as Kamate argues, constitute a form of economic neocolonialism: «Debt is the chain that prevents economic decolonisation» (Kamate, as cited, in Segantin, 2026).

The question that emerges from these two testimonies — the EEB's from Brussels, Kamate's from Rutshuru — is not a technical question about regulatory thresholds or compliance timelines. It is a political and cultural question of the deepest order: who decides what counts as progress, and for whom?

Culture as Foundation: Zagrebelsky's Challenge to The Volume's Readers

It is here that Gustavo Zagrebelsky's argument in *Fondata sulla cultura* (2014) becomes directly pertinent. Zagrebelsky — one of Italy's foremost

constitutional scholars and a former President of the Constitutional Court — argues that culture is not an ornament of democracy but its foundation. A constitutional order grounded in the dignity of the person, in the equality of rights, and in the responsibility of each generation toward those that follow, cannot be sustained by legal instruments alone. It requires a culture capable of recognising the difference between law as an instrument of justice and law as an instrument of power; between regulation that protects the commons and deregulation that privatises it; between a green transition that is genuinely just and one that merely displaces exploitation to new supply chains and new continents.

The legislative frameworks examined in this chapter were constructed by lawyers, economists, and policymakers. Their effectiveness, however, ultimately depends on something that no directive can mandate: a cultural disposition toward accountability — an insistence, embedded in the values of citizens, consumers, investors, and educators, that the costs of production must be borne by those who capture its profits, and that the dignity of the person does not end at the borders of the European single market.

This volume is written in that spirit. Its claim is not that the CS3D, the EUDR, or the Conflict Minerals Regulation are irrelevant — they are not. Its claim is that they are necessary but insufficient; that the gap between their stated ambitions and their actual effects is not primarily a technical gap but a political and cultural one; and that closing it requires precisely the kind of transdisciplinary, critical, and engaged scholarship that this volume attempts to practise.

« Peace in the Congo depends on your consumer choices and on the courage of the young people who, here and there, defend the land and human dignity with their bodies and their ideas.»

Francois Kamate (as cited in Segantin, 2026)

Once again, the choices made today will shape the planet that future generations inherit. The legal frameworks are in place, however imperfect. The science is unambiguous, however contested. What remains is the will — cultural, political, and individual — to act on what we already know.

The regulatory frameworks examined in this chapter establish the legal architecture within which corporate conduct across global supply chains is — or ought to be — governed. How that architecture intersects with the most severe forms of labour exploitation — forced labour, modern slavery, and human trafficking — embedded in those same supply chains is the subject of Chapter 5.

Box 1 – Guiding Questions

1. What are the three core conditions that products must meet to be marketed or exported in the EU under Regulation (EU) 2023/1115?
2. What is the significance of the due diligence statement in the regulation?
3. How does the regulation impact Small and Medium-sized Enterprises (SMEs)?
4. What are some potential challenges associated with the implementation of the regulations?
5. How can technology aid in the successful implementation of the regulation?

Box 2 – Key Facts

- The EU's transition from voluntary to binding corporate sustainability frameworks represents a structural response to the governance gap identified by Ruggie (2008): voluntary measures have proved unable to drive consistent improvement across sectors and jurisdictions.
- The CS3D (2024/1760), as amended by the Omnibus I package (December 2025), applies from July 2029 to companies with more than 5,000 employees and an annual net turnover exceeding €1.5 billion – a significantly narrower scope than the original proposal, reflecting the influence of competitiveness concerns on the legislative process.
- The EUDR (2023/1115) covers seven key commodities (cattle, cocoa, coffee, palm oil, rubber, soya, and wood) and requires that products marketed in the EU not be sourced from land converted from forest after 31 December 2020 – a cut-off date shaped in part by industry lobbying against the European Parliament's more stringent 2015 proposal.
- The Conflict Minerals Regulation (2017/821) applies to EU importers of tin, tungsten, tantalum, and gold (3TG) from conflict-affected and high-risk areas (CAHRAs), but excludes downstream manufacturers and finished products, creating structural vulnerabilities in enforcement.
- The poor implementation of existing EU environmental laws costs €180 billion annually – approximately 1% of EU GDP – whilst soil degradation alone costs at least €97 billion per year and PFAS pollution could cost €1.7 trillion by 2050 (European Environmental Bureau, 2026). These figures illustrate the immense cost of inaction relative to the cost of regulation.
- In a scenario consistent with Paris Agreement goals, lithium demand from clean energy technologies is projected to reach almost 90% of total demand by 2040, with nickel and cobalt at 60–70% – making the extension of due diligence to critical minerals beyond 3TG an urgent governance priority (IEA, 2021; Amnesty International, 2017).
- SMEs are excluded from direct CS3D and EUDR obligations but remain indirectly affected as suppliers to larger companies subject to the regulations, creating cascading compliance pressures throughout supply chains.

Box 3 - A Working Glossary

Term	Definition
Conflict-Affected and High-Risk Areas (CAHRAs)	Areas experiencing armed conflict, fragile post-conflict situations, weak or non-existent governance, or widespread violations of international law, including human rights abuses. Defined under the EU Conflict Minerals Regulation (2017/821) and operationalised through an indicative list maintained by RAND Europe on behalf of the European Commission, updated quarterly.
Conflict minerals (3TG)	Tin, tungsten, tantalum, and gold – four minerals and metals whose extraction and trade in conflict-affected regions can fund armed groups, perpetuate violence, and enable human rights abuses. The designation derives from the US Dodd-Frank Act Section 1502 (2010) and is adopted by the EU Conflict Minerals Regulation (2017/821).
Corporate Sustainability Due Diligence Directive (CS3D)	EU Directive 2024/1760, as amended by Directive (EU) 2025/794 and the Omnibus I package, requiring large companies operating in the EU to conduct human rights and environmental due diligence across their operations and value chains, with enforceable obligations, director liability, and civil remedies for victims.
Corporate Sustainability Reporting Directive (CSRD)	EU Directive 2022/2464 requiring certain companies to report on sustainability performance based on the principle of double materiality – reporting both on how sustainability issues pose financial risks to the company and on how the company’s activities impact people and the environment.
Cost of inaction	The aggregate economic, social, and environmental costs generated by the failure to implement existing regulatory obligations or to prevent environmental harm. As documented by the European Environmental Bureau (2026), the cost of poor implementation of existing EU environmental laws reaches €180 billion annually – a figure that fundamentally challenges the framing of environmental regulation as an economic burden rather than an investment.
Double materiality	The principle, embedded in the CSRD, that corporate sustainability reporting must address two dimensions simultaneously: financial materiality (how environmental and social factors affect the company’s financial performance) and impact materiality (how the company’s activities affect people and the environment). This dual lens distinguishes EU sustainability reporting from purely financial disclosure frameworks.

EU Deforestation Regulation (EUDR)	Regulation (EU) 2023/1115 requiring operators and traders placing seven key commodities (cattle, cocoa, coffee, palm oil, rubber, soya, and wood) and their derived products on the EU market to ensure these products are deforestation-free, legally produced, and accompanied by a due diligence statement.
Greenwashing	The practice of making misleading or unsubstantiated claims about the environmental benefits of a product, service, or corporate practice, creating a false impression of sustainability. EU regulatory frameworks, including the Taxonomy Regulation and the CSRD, are partly designed to counteract greenwashing by establishing standardised, verifiable disclosure requirements.
Just transition	A framework for managing the shift to a low-carbon economy in ways that are fair and inclusive, ensuring that the costs and benefits of the transition are equitably distributed and that workers and communities dependent on fossil fuel industries or extractive supply chains are not left behind. As Kamate (in Segantin, 2026) argues from the DRC, a genuinely just transition cannot be one that merely displaces extraction to new supply chains and new continents: it requires extending human rights due diligence to critical minerals and ensuring that the communities bearing the environmental and social costs of extraction are not sacrificed in the name of progress.
Omnibus I package	A legislative package published in February 2025 and agreed in December 2025 by the European Parliament, Council, and Commission, introducing significant amendments to both the CSRD and the CS3D with the stated aim of simplifying EU sustainability rules and boosting competitiveness. Key changes include raising the CS3D threshold to companies with more than 5,000 employees and €1.5 billion turnover, and delaying application to July 2029. The European Ombudsman found that the Commission committed maladministration in preparing the package, having skipped or curtailed essential steps of its own Better Regulation rules (European Environmental Bureau, 2026).
Risk-based approach	A methodology for prioritising due diligence efforts according to the likelihood and severity of adverse impacts, rather than applying uniform obligations across all operations and supply chains. Both the CS3D and the EUDR adopt a risk-based approach, allowing companies to focus resources on the highest-risk segments of their value chains.
Taxonomy Regulation	Regulation (EU) 2020/852 establishing a classification system for environmentally sustainable economic activities, designed to help investors identify genuinely sustainable investments and prevent greenwashing. Activities must meet minimum social safeguards — including alignment with the UNGPs and OECD Guidelines — to qualify as taxonomy-compliant.

Transition plan (climate)	Under the CS3D, a legally required corporate plan setting out how the company’s business model and strategy will be made compatible with the transition to a sustainable economy and with limiting global warming to 1.5°C in line with the Paris Agreement and Regulation (EU) 2021/1119 (European Climate Law). Failure to adopt or update the plan may result in administrative sanctions.
Value chain	The full sequence of activities — from raw material extraction through production, distribution, use, and end-of-life management — that contributes to the delivery of a product or service. The CS3D extends due diligence obligations across the entire value chain, not merely the first tier of direct suppliers, addressing the structural limitation of earlier voluntary frameworks.

Chapter 5

Supply Chains, Forced Labour, Modern Slavery, and Human Trafficking

Case Study: Prada and the Forced Labour of Uyghurs in China

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Forced labour, modern slavery, and human trafficking represent some of the most severe violations of human rights persisting in the contemporary global economy, sustained in large part by the structural opacity of complex, multi-tiered supply chains. This chapter examines how companies operating within geographically dispersed production networks become complicit in these practices through inadequate oversight, weak enforcement of labour standards, and an over-reliance on voluntary corporate commitments that lack binding accountability mechanisms. Through a qualitative case study of the Italian luxury holding company Prada S.p.A. and its alleged connection to the forced labour of the Uyghur population in China's Xinjiang Uyghur Autonomous Region (XUAR), the chapter analyses how supply chain opacity enables human rights violations to remain concealed within luxury production networks, with particular attention to Anhui Huamao Group Co., Ltd., a key supplier with documented ties to state-sponsored labour transfer programmes. The findings evaluate the effectiveness of international frameworks — including the UNGPs, OECD Guidelines, and emerging EU legislation — and critically assess Prada's blockchain traceability initiative as a promising yet currently insufficient response. Collectively, the evidence underscores the urgent need for mandatory human rights due diligence, binding transparency obligations, and coordinated multistakeholder action to align corporate conduct with fundamental labour rights standards.

Keywords: Forced Labour, Modern Slavery, Human Trafficking, Supply Chain Transparency, Luxury Fashion, Human Rights Due Diligence, Corporate Complicity.

Learning Objectives

After reading this chapter, you will be able to:
Explain the structural features of global supply chains that enable forced labour, modern slavery, and human trafficking to persist across sectors and jurisdictions.
Analyse the specific mechanisms through which state-sponsored labour transfer programmes in the Xinjiang Uyghur Autonomous Region have become embedded in luxury fashion supply chains.
Evaluate the adequacy of existing international frameworks – including the UNGPs and OECD Guidelines – and emerging EU legislation in addressing forced labour in complex, multi-tiered supply chains.
Assess the gap between corporate human rights commitments and operational practice, using Prada S.p.A. as a case study in the limits of voluntary due diligence.
Critically reflect on the structural conditions – governance gaps, regulatory asymmetries, and the primacy of profit – that allow corporations to benefit from forced labour while maintaining deniability.

1. Introduction: Supply Chains, Forced Labour, and the Governance Gap

The persistence of forced labour, modern slavery, and human trafficking in the contemporary global economy is not a symptom of ignorance or isolated corporate misconduct. As established in Chapter 1, corporate harm rarely results from a lack of awareness: companies typically knew, or had reasonable means to know, that their supply chains were implicated in human rights violations. The Prada case examined in this chapter confirms that pattern.

Forced labour, as defined by the International Labour Organisation (ILO), involves “work or service exacted from any person under the menace of a penalty and for which the person has not offered themselves voluntarily” (ILO, 1930). According to the 2022 Global Estimates of Modern Slavery, 27.6 million individuals are currently subjected to forced labour, constituting 55.6% of the estimated 49.6 million people living in modern slavery worldwide (ILO, Walk Free, & IOM, 2022). Modern slavery encompasses forced labour, debt bondage, forced marriage, and human trafficking — a spectrum of coercive practices that share a common structural enabler: the opacity of global supply chains.

The fashion industry, characterised by geographically dispersed production networks, short lead times, and transient buyer–supplier relationships, represents one of the sectors most vulnerable to these systemic failures. These structural features substantially diminish supply chain visibility and hinder corporate ethical accountability (OECD, 2018). As Chapter 3 established, the “*governance gap*” – the structural mismatch between the transnational reach of corporations and territorially limited legal systems (Ruggie, 2008) – is the primary driver of these violations, not the failure of individual actors (see Chapter 3 for the full elaboration of the governance gap concept).

The apparel industry provides a pertinent illustration of the practical implications of this gap. Many leading brands have adopted human rights policies and implemented due diligence processes in response to frameworks such as the UNGPs and the CS3D, yet challenges including lack of transparency, subcontracting opacity, and weak enforcement of labour standards persist (Egels-Zandén & Lindholm, 2015). In fast fashion, brands such as H&M have faced repeated scrutiny over low wages in their indirect supply chains despite public commitments to ethical sourcing (Business & Human Rights Resource Centre, 2023). In food and agriculture, Nestlé has acknowledged the presence of child labour in its cocoa supply chains in West Africa, reflecting the same structural gap between corporate policy and upstream realities (Busquet et al., 2021). Across all sectors, a common thread emerges: the deeper and more fragmented the supply chain, the greater the risk of exploitation, and the harder it becomes to hold any single actor accountable.

As Chapter 4 demonstrated, even binding instruments such as the CS3D (Directive 2024/1760) have been weakened before their first enforcement action – raising the threshold from 1,000 to 5,000 employees and delaying application to 2029 through the Omnibus I package (see Chapter 4, §3). The result is a regulatory environment in which voluntary commitments remain the dominant mode of corporate response, despite their demonstrated insufficiency.

The risks of human rights abuses are not confined to mass-market production. They extend to the luxury segment, where the paradox between brand narratives of exclusivity and craftsmanship and the reality of exploitative labour practices is most pronounced. The assumption that luxury equates to ethical production is not merely a marketing fiction: it is a structural mechanism that deflects scrutiny and sustains impunity. The social licence to operate – the informal acceptance that corporations must

continuously earn from communities and society (as defined in Chapter 3) — is effectively manufactured through brand narrative rather than earned through practice.

The case study of Prada S.p.A. and its alleged connection to forced labour in the Xinjiang Uyghur Autonomous Region (XUAR), examined in Section 2, is not an isolated example. It illustrates a pattern that Chapter 6 will further develop through two complementary cases: DuPont's decades-long concealment of PFAS contamination, and the collapse of the Aral Sea ecosystem driven by Soviet-era cotton quotas and the systematic use of forced child labour — contexts in which, as here and elsewhere across sectors and geographies, the costs of harmful corporate and state-directed activity were externalised onto politically and economically marginalised communities while corrective action was delayed by concealment and weak enforcement.

2. Case Study: Prada and the Forced Labour of Uyghurs in China¹

The fashion industry plays a crucial role in the global economy, employing millions of workers and serving as a significant entry point into the formal workforce in many countries. However, the sector grapples with a structural challenge: complex supply chains characterised by widespread human rights abuses, environmental harm, and a lack of transparency. These structural shortcomings, compounded by demand-side and supply-side dynamics, intensify exploitative labour practices and undermine sustainable business conduct across the industry (ILO, Walk Free, & IOM, 2022).

Within this context, the risks of human rights abuses and labour exploitation are not confined to mass-market production but extend to the luxury fashion sector, revealing a paradoxical reality: industries traditionally associated with exclusivity and craftsmanship can contribute to and even facilitate severe human rights violations. The emphasis on quality,

¹ Section 2 of this chapter — Prada and the Forced Labour of Uyghurs in China — is based on a group assignment prepared by Valeria Ceban, Laura Vaiani, and Sabaeta Zeneli, master's students at the University of Padova, within the Master's Programme in Human Rights and Multi-level Governance [Original assignment title: Prada and the Forced Labor of Uyghurs in China. Spelling uniformed to British English for publication]. The chapter author gratefully acknowledges their contribution in documenting this case study. The analytical framing, integration with Section 1, and editorial adaptation are the responsibility of the chapter author.

conventionally understood as a hallmark of artisanal expertise, is incompatible with the documented integration of forced labour within luxury supply chains. This divergence between the industry's avowed standards and its systemic failure to uphold fundamental human rights underscores the urgent need for critical scrutiny and accountability frameworks.

The United Nations Agenda 2030, with its Sustainable Development Goals (SDGs), provides a comprehensive framework to address these global challenges. Responsible production and decent work (SDGs 8, 10, and 12) play a crucial role in this agenda, emphasising fair labour conditions and underpinning efforts to ensure a socially sustainable and ethical luxury fashion industry.

Against this background, this case study examines the prevalence of human rights violations within luxury fashion supply chains, with a specific focus on Prada S.p.A. and its alleged connection to forced labour involving the Uyghur population in China's Xinjiang Uyghur Autonomous Region (XUAR). It examines the implications for social sustainability, human rights, and ethical business practice, with a focus on the systemic barriers to transparency and accountability. Acknowledging the constraints of investigating human rights in censored regions such as China, this research draws on academic contributions and specialised Uyghur research. To enhance the credibility of the findings, data triangulation was employed, incorporating satellite imagery and information from reports by initiatives such as KnowTheChain and Morningstar Sustainalytics.

2.1 Human Rights Implications

Forced labour, as defined by the ILO, involves “work or service exacted from any person under the menace of a penalty and for which the person has not offered themselves voluntarily” (ILO, 1930; ILO, 2014). According to the 2022 Global Estimates of Modern Slavery, 27.6 million individuals are currently subjected to forced labour, constituting 55.6% of the estimated 49.6 million people living in modern slavery worldwide (ILO, Walk Free, & IOM, 2022). The limited transparency throughout supply chains, a common characteristic of the fashion industry, compounds this issue, hindering visibility into the origins of materials and labour practices.

This paradox — wherein luxury fashion is frequently presented as a symbol of ethical superiority and artisanal craftsmanship — fosters a dangerous assumption that such values inherently align with fair labour practices. As this chapter documents, investigations reveal that many luxury brands fail to adequately assure compliance with labour rights, and in some

cases are implicated in severe human rights violations. Given their significant profit margins and market influence, luxury brands are uniquely positioned to lead in fostering sustainability. Despite this, their emphasis on exclusivity and profitability has often overshadowed social accountability.

Legal frameworks such as the UNGPs, the OECD Guidelines for Multinational Enterprises, and the ILO Tripartite Declaration on Multinational Enterprises call for companies to respect human rights and implement due diligence processes to identify and mitigate risks (European Centre for Constitutional and Human Rights, 2020). As established in Chapter 3, the UNGPs outline a multifaceted approach for companies to fulfil their responsibility to respect human rights: assessing actual and potential human rights impacts, integrating and acting upon the findings, tracking responses, and communicating how impacts are addressed (see Chapter 3 for the full elaboration of the UNGPs three-pillar framework). Disregarding these components not only hinders efforts to address forced labour but also enables companies to evade comparable accountability. The case of Prada exemplifies these dynamics, with allegations of forced labour in the XUAR posing significant ethical and reputational risks.

2.1.1 The Cotton Supply Chain in Xinjiang

Understanding the connection between cotton production and forced labour in the XUAR requires an analysis of the region's supply chain structure. In 2018, China produced approximately 24% of the world's cotton (Our World in Data, 2021). According to the Tailoring Responsibility report, around 85% of China's cotton originated from the Xinjiang Uyghur Autonomous Region (Uluyol et al., 2024). This significant concentration resulted from policies implemented by the People's Republic of China (PRC) government starting in 2014, with the support of Xinjiang's local authorities, aimed at transforming the region into one of the world's major cotton production hubs.

Cotton harvesting, along with other labour practices in the region, often relies on the so-called hashar system: a mechanism involving the forced mobilisation of workers without compensation. Despite official claims by the Xinjiang government that it has abolished this system, documented evidence indicates its continued practice (Uluyol et al., 2024). These forms of forced labour are perpetuated principally by the Xinjiang Production and Construction Corps (XPCC), a state-owned enterprise and paramilitary or-

ganisation in the XUAR, which imposes exploitative labour conditions on the local population.²

The issue of forced labour extends well beyond cotton fields, encompassing textile factories as well. In recent years, cotton mills and textile factories in the XUAR have emerged as major sites of labour exploitation. This trend results from a deliberate combination of state land transfers and the expansion of textile manufacturing infrastructure, aimed at reinforcing China's dominance in the global textile industry.

China's textile industry benefits from a uniquely structured vertical integration, enabling all production stages — from cotton cultivation to spinning, fabric creation, and apparel manufacturing — to be concentrated within a single country. This integration, coupled with vast production capacity, provides a competitive advantage unmatched by any other nation. However, the complexity of this supply chain makes tracing the origins of materials deeply challenging. The involvement of intermediaries and commodity traders, along with the blending of cotton and yarn at various stages, further obscures transparency in sourcing. Brand sourcing decisions also influence supply chain opacity, as companies may either select their textiles directly or delegate these decisions to tier-one suppliers, effectively distancing themselves from upstream realities.

Many companies have profited from this market over the years, often relying on repeated human rights violations within their supply chains. This chapter examines one of these actors: Anhui Huamao Group Co. Ltd.

2.1.2 The Case of Anhui Huamao Group Co., Ltd.

Anhui Huamao Group Co., Ltd. represents a central case within the broader discussion of forced labour in the textile supply chain, particularly due to its substantial presence in the XUAR and its extensive international market reach. As one of China's largest vertically integrated textile companies, Anhui Huamao has established a production network spanning cotton processing to garment manufacturing, enabling it to exert substantial control over its supply chain. The company's deep entrenchment in Xinjiang — through direct subsidiaries and strategic partnerships, including collaborations with the paramilitary XPCC — raises critical concerns regarding its involvement in state-sponsored labour transfer programmes (Uluyol et al., 2024).

² The XPCC's inclusion on the US UFLPA Entity List in June 2022 constitutes formal governmental recognition of its role in forced labour practices. See: <https://www.dhs.gov/uflpa-entity-list> (last accessed: 12 June 2025).

Reports indicate that its facilities in Alashankou and Alar have accommodated transferred Uyghur workers subjected to ideological training and strict labour discipline policies, a practice aligned with broader state efforts to regulate minority labour. Furthermore, the proximity of its Alar facility to Tamen Prison — less than 1.53 km — raises additional concerns about potential connections to forced prison labour being integrated into its supply chain (Uluyol et al., 2024).³

Given these factors, the case of Anhui Huamao highlights the inherent challenges in tracing and verifying labour conditions within China's highly opaque textile industry. Its commercial ties with luxury brands such as Prada illustrate the ethical and reputational risks that global fashion companies face when sourcing from suppliers operating in high-risk regions — and the extent to which the governance gap (see Chapter 3) enables these relationships to persist without legal consequence.

2.2 Stakeholder Mapping

2.2.1 The Uyghur Population

The Uyghurs are a Turkic ethnic group native to Central and East Asia, primarily residing in the XUAR in northwest China. Historically, they have inhabited the oases of the Tarim Basin, developing distinct cultural traditions influenced by multiple civilisations. By the 16th century, Islam had become a central aspect of Uyghur identity. Today, while most Uyghurs still live in Xinjiang, significant diasporic communities exist in Kazakhstan, Kyrgyzstan, Uzbekistan, Turkey, and beyond (Kamalov, 2021).

Despite their official recognition as one of China's 55 ethnic minorities, the Uyghurs have been subjected to severe repression by the Chinese government, particularly since 2017. Under the guise of counterterrorism and poverty alleviation, the PRC has implemented a systematic campaign of surveillance, mass internment, and forced labour targeting Uyghurs and other ethnic minorities in the XUAR. Estimates suggest that between 900,000 and 1.8 million Uyghurs and other minority groups were detained in internment camps between 2017 and 2019 (Zenz, 2019; Australian Strategic Policy Institute, 2020; British Broadcasting Corporation, 2020; 2023).

By late 2018, reports revealed that the internment camps were part of a broader system of forced labour affecting not only those detained within the camps (Murphy & Elimä, 2021). Detainees were coerced into labour

³ Prisoners held in Tamen Prison are reported to work for both internal prison companies and external corporations (Uluyol et al., 2024)

during their confinement, and upon release, were often transferred directly into so-called “labour placements”, where they faced both implicit and explicit threats of re-detention should they resist compliance (Australian Strategic Policy Institute, 2020).

Simultaneously, regional and local governments implemented programmes requiring at least one person per household to participate in state-sponsored labour transfers as part of a poverty alleviation campaign. By September 2020, the XUAR government reported conducting 2.6 million such transfers involving Uyghurs and other minority populations; this figure rose to 3.2 million transfers by 2021, indicating a significant expansion of the programme (Murphy & Elimä, 2021). Those conscripted into these schemes were required to work on farms and in factories within the XUAR and other parts of China. By December 2021, directives changed, demanding that all employable individuals engage in some form of work.

Today, various scholars, human rights organisations, and governments consider the Uyghur population to be subjects of human rights violations committed by the government itself or with its direct consent. As rights-holders – individuals and communities whose rights are at stake in corporate and state conduct (see Chapter 3) – the Uyghur people are largely absent from any meaningful remedy mechanism, a structural consequence of the governance gap that Chapter 3 identifies as the primary driver of impunity in business and human rights contexts.

2.2.2 The Xinjiang Uyghur Autonomous Region Government

The XUAR government bears primary responsibility for the human rights violations occurring in the region. The system of repression, initiated in 2014 and intensified in 2017, was promoted by the government itself, which framed the detention camps as part of efforts to alleviate poverty and address perceived extremism. Mounting evidence, however, suggests that this programme is designed to exert control, forcibly relocate populations, conduct pervasive surveillance, and fundamentally reshape the cultural behaviours and beliefs of Uyghurs and other regional minorities. Numerous testimonies indicate that detainees are subjected to torture, sterilisation, and sexual violence while confined in the camps (Zenz, 2019; Murphy & Elimä, 2021).

The government further facilitates the mass relocation of Uyghur labourers through land transfer policies that strip them of their farms (Murphy, 2023). Authorities seize agricultural land, often without proper compensation, under the guise of collectivisation, forcing former farmers into industrial labour. In many cases, Uyghurs are assigned to continue

working on land they once owned, but as low-paid labourers rather than independent farmers. This state-directed process not only ensures a steady supply of cheap labour but also disrupts traditional Uyghur ways of life, advancing the government's broader agenda of cultural assimilation (Murphy & Elimä, 2021).

The government's role is further underscored by the presence of the XPCC — a state-owned enterprise and paramilitary organisation that plays a central role in the region's economic, political, and military affairs, and whose inclusion on the US UFLPA Entity List in June 2022 formally acknowledged its role in forced labour practices.

2.2.3 European Union

The adoption of the US Uyghur Forced Labor Prevention Act (UFLPA) in 2021, which prohibits the importation of goods produced through forced labour in the Xinjiang region, catalysed a strategic redirection of Chinese manufacturing supply chains towards the European market. This redirection has highlighted a critical vulnerability in the EU's trade policy: the absence, at the time of writing, of a comprehensive and legally binding prohibition on the importation and sale of goods manufactured using forced labour.

Researchers and human rights advocates have emphasised the urgent necessity for decisive EU action to safeguard European consumers from unintentionally purchasing products implicated in these human rights abuses. The urgency is especially pronounced given the ongoing policy discourse surrounding the proposed EU Forced Labour Regulation, which represents a pivotal opportunity to develop a comprehensive framework capable of tackling this complex ethical and legal challenge (Clean Clothes Campaign, 2023).

Despite the existence of regulatory frameworks including the CS3D and the OECD Guidelines for Responsible Supply Chains in the Garment and Footwear Sector, the luxury fashion industry continues to encounter significant challenges in realising substantial transparency and accountability within its supply chains. As Chapter 4 established, the CS3D (Directive 2024/1760) marks an essential step in formalising corporate responsibility by introducing mandatory human rights due diligence (HRDD) for companies operating within the EU (see Chapter 4, §2). However, its effectiveness is undermined by the absence of binding transparency requirements specifically addressing forced labour in supply chains, and further weakened

by the Omnibus I package, which raised the application threshold and delayed enforcement to 2029 (see Chapter 4, §3). This regulatory gap enables companies to evade accountability and contributes to the continued perpetuation of human rights violations within their supply networks.

2.2.4 Anhui Huamao Group Co., Ltd.

Founded in 1958, Anhui Huamao is one of the PRC's largest vertically integrated textile and apparel companies. Its ability to compete internationally has been recognised through notable government awards, including its designation as one of the "20 Enterprises with Strong Competitiveness in China's Cotton Textile Industry". This distinction highlights the company's strategic importance within China's industrial landscape. Anhui Huamao's products are exported to prestigious domestic and international high-end markets, including Italy, Germany, Japan, and Hong Kong, and supplied to a clientele that includes renowned global brands such as Burberry, Max Mara, and Prada (Uluyol et al., 2024).

A defining feature of Anhui Huamao is its highly integrated vertical production model, enabling the company to oversee multiple stages of the supply chain — spanning spinning, weaving, fabric production, and garment manufacturing. Such an organisational structure not only reduces operational costs but also ensures higher quality control over final products and greater adaptability to market demands.

The company's significance to this case study is also underscored by its consolidated presence in the XUAR, where it operates multiple subsidiaries. According to its 2022 annual report, one subsidiary — Alar Xinkai Textile Co. Ltd. — is located in the No. 1 Industrial Park of Alar City, a key area for economic and technological development. Alashankou Boyuan Textile Co. Ltd., another subsidiary, operates within the Alashankou Bonded Zone as a joint venture, with Anhui Huamao holding a 37.5% stake and its subsidiary Anhui Huajing New Textile Co. Ltd. holding the remaining 62.5%. A third subsidiary, Alashankou Huatai Import and Export Co. Ltd., has ceased operations, as reported in the 2023 semi-annual report (Uluyol et al., 2024).

Additionally, the company's network extends beyond direct subsidiaries to encompass collaborations with local entities. Between 2010 and 2020, Anhui Huamao held a significant stake in Xinjiang Lihua (Group) Co. Ltd., a joint venture established in partnership with the Xinjiang Zhongtai

Group — a state-owned corporate conglomerate operating chemical, plastic, textile, and agricultural projects across the XUAR.⁴ (Uluyol et al., 2024).

As documented in the *Tailoring Responsibility* report (Uluyol et al., 2024), derived from an analysis of state media reports, local and regional government documents, and corporate website content, the company's operations in Xinjiang are closely intertwined with state-sponsored labour transfer programmes. For instance, a facility in Alashankou housed transferred workers who, alongside their employment, underwent mandatory training sessions on political ideology and regulations emphasising the modernisation of socialist ideology and labour discipline. Such practices, documented as early as 2015 at the Xinjiang Huamao Aral Textile Co., located at 40°55'12.52" N, 81°23'39.03"E (hereinafter Alar facility), reveal systemic social pressures on Uyghur workers to conform to company standards and workflows.

The Alar Economic and Technological Zone, where the Alar facility is situated, is one of China's key cotton yarn production hubs. This industrial zone is part of the 2016 Action Plan for the Development of the Textile and Apparel Industry, which seeks to promote regional employment through the "headquarters + satellite factory" model — a strategy encouraging major national textile companies such as Anhui Huamao to establish subsidiaries or satellite factories in smaller urban centres within the autonomous region, facilitating the transfer of Uyghur labour.

The proximity of the Alar facility to Tamen Prison (less than 1.53 km) raises further concerns about potential connections to forced labour (see Figure 1). While geographical proximity does not constitute definitive evidence, it represents a risk factor that warrants further investigation, particularly given the documented use of prison labour in external production activities (Uluyol et al., 2024).

As the findings demonstrate, the identification of forced labour in Xinjiang presents significant challenges: many traditional corporate due diligence instruments, such as labour audits, prove largely ineffective within this context. The pervasive system of control and surveillance prevalent in the region⁵ inherently impedes the definitive substantiation of forced labour, primarily due to restricted access to relevant facilities (Lehr & Bechrakis, 2019).

⁴ In September 2023, Xinjiang Zhongtai Group Co. Ltd was added to the US UFLPA Entity List. See: <https://www.dhs.gov/uflpa-entity-list> (last accessed: 12 June 2025).

⁵ In March 2020, the Better Cotton Initiative declared that, owing to state surveillance in the region, it was no longer able to conduct independent visits to Xinjiang.

Figure 1 - Proximity of Alar facility (40°55'12.52" N, 81°23'39.03"E) to Tamen Prison (red pin)



Source: Adopted from Google Maps (2023).

2.2.5 Prada S.p.A.

Prada S.p.A. is a central stakeholder in this discussion owing to its global prominence and its alleged connection to unethical labour practices within its supply chain. As a leading luxury fashion brand, Prada is celebrated for its exclusivity, high-end craftsmanship, and public commitment to ethical standards, articulated through its Human Rights Policy, Modern Slavery Statement, and annual Sustainability Reports (Prada Group, 2023a; 2023b; 2023c). Despite these commitments, investigations have raised serious doubts about the effectiveness of Prada's ethical policies, particularly regarding supply chain transparency and the enforcement of labour standards (KnowTheChain, 2021).

A critical issue concerns Prada's potential exposure to forced labour risks linked to the XUAR through indirect supplier relationships. Reports suggest that Prada, like many luxury brands, may source cotton from this region via multi-tiered supplier networks in which visibility beyond the first tier is severely limited (KnowTheChain, 2021). Prada's lack of independent audits and its failure to disclose comprehensive supplier lists further complicate efforts to assess and address these risks (Business & Human Rights Resource Centre, 2024).

Prada's alleged sourcing relationship with suppliers such as Anhui Hua-mao Group illustrates the challenges faced by luxury brands in enforcing ethical labour practices. While Prada engages with its suppliers through con-

tractual obligations and internal codes of conduct, the absence of third-party verification mechanisms and binding agreements creates structural gaps in ensuring the integrity of its supply chain. This pattern — public commitment, operational opacity, and deniability through supply chain complexity — is, as Chapter 1 established, rarely a product of ignorance (see Chapter 1, §5).

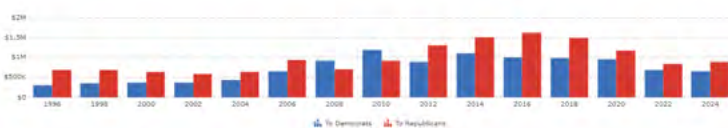
2.3 Human Rights and Legal Implications

This section critically examines Prada's response to allegations of forced labour involving Uyghur workers and evaluates the company's adherence to international human rights and due diligence frameworks. By analysing Prada's policies, sustainability reports, and third-party assessments, this discussion reveals significant discrepancies between the company's public commitments and its practical enforcement mechanisms.

2.3.1 Prada's Due Diligence Measures

Prada asserts its commitment to human rights through documents such as its *Human Rights Policy and Modern Slavery Statement*, which emphasise ethical sourcing, labour protections, and compliance with international labour standards (Prada Group, 2023a). However, while these policies reflect aspirational goals, they fall short in terms of actionable detail and lack mechanisms for operational accountability. This is evident in Prada's score of 5 out of 100 in the 2021 KnowTheChain benchmark, which ranked it 35th out of 37 companies assessed, indicating significant deficiencies in transparency and responsible sourcing (KnowTheChain, 2021).

This low score highlights a core paradox: despite commanding high retail prices and substantial profit margins, Prada continues to rely on opaque and fragmented supply chains with inadequate labour oversight. The assumption that luxury equates to ethical production is challenged by the brand's limited disclosures and accountability gaps. As Chapter 3 established, the corporate responsibility to respect human rights under the UNGPs constitutes a baseline expectation — a social licence to operate — that applies regardless of the adequacy of state regulation in any given jurisdiction (see Chapter 3, §3). Prada's performance against this baseline is demonstrably inadequate (see figure 2).

Figure 2 - Prada's KnowTheChain score

Source: Adapted from KnowTheChain 2021 Benchmark Report: Forced Labor and Transparency in Global Supply Chains (p. 6), by KnowTheChain, 2021, <https://media.business-humanrights.org/media/documents/2021-KTC-AF-Benchmark-Report.pdf>

2.3.2 Supply Chain Vulnerabilities and Lack of Oversight

Prada's sustainability reports highlight ongoing initiatives aimed at improving traceability and reducing environmental impact (Prada Group, 2023c). However, independent investigations reveal that the brand relies heavily on indirect suppliers, with limited oversight beyond the first tier of its supply chain — precisely where the risks of forced labour, particularly in regions such as Xinjiang, are highest (KnowTheChain, 2021). The absence of robust third-party audits or independent verification mechanisms exacerbates these risks, undermining Prada's claims of transparency and ethical responsibility (Prada Group, 2023b).

This limitation is not unique to Prada. It reflects a sector-wide structural failure rooted in the same extractivist logic that Chapter 2 identifies as foundational to the dominant economic paradigm: the externalisation of costs — environmental, social, and human — onto the most vulnerable actors in the value chain (see Chapter 2, §3). In the context of Xinjiang, those costs are borne by Uyghur workers subjected to state-directed coercion, while the financial benefits accrue to brands operating at a safe distance from the point of production (The Guardian, 2020).

2.3.3 Risk Assessments and Monitoring

The OECD Guidelines for Multinational Enterprises and the UNGPs require companies to conduct thorough human rights impact assessments (HRIAs) and maintain accessible grievance mechanisms. As Chapter 3 established, an HRIA is a rights-holder-centred methodology, distinct from a risk assessment centred on the company's own exposure (see Chapter 3, §5). Prada's current risk assessment practices primarily focus on direct suppliers, failing to address risks associated with subcontracting and raw material sourcing — the tiers where the greatest dangers lie.

Reports have linked suppliers such as Anhui Huamao Group to labour transfer programmes in Xinjiang, highlighting the insufficiency of Prada's current risk mitigation strategy (Uluyol et al., 2024). Although Prada engages suppliers through codes of conduct and contractual obligations, the lack of independent audits and full supplier disclosure weakens the credibility of these efforts. KnowTheChain and the Business & Human Rights Resource Centre have both criticised Prada's minimal engagement with third-party verification and the brand's failure to publish comprehensive supplier lists, especially in high-risk areas such as Xinjiang (KnowTheChain, 2021; Business & Human Rights Resource Centre, 2024).

2.3.4 Prada and Xinjiang: Ethical and Legal Repercussions

Prada markets itself as a symbol of craftsmanship, exclusivity, and ethical values. However, its entanglement with allegations of forced labour presents an apparent ethical contradiction and exposes it to escalating legal risks. Regulatory frameworks such as the US UFLPA (2021) and the CS3D are creating legal obligations for companies to identify, prevent, and address human rights abuses throughout their supply chains, including at the level of raw material sourcing (see Chapter 4, §2).

The European Centre for Constitutional and Human Rights (ECCHR) has emphasised that voluntary CSR approaches are insufficient, calling instead for enforceable legal standards (ECCHR, 2023). Prada's failure to act meaningfully — despite scoring 9 out of 100 in the 2016 KnowTheChain assessment, it has made little to no progress over the past five years, with its rating even declining to just 5 out of 100 in the 2021 benchmark. — signals that the company remains out of step with emerging legal expectations (KnowTheChain, 2016; 2021).

Without stronger governance, supply chain transparency, and operationally robust human rights due diligence, Prada risks sanctions, import bans, and reputational damage. Legal pressure from both EU and US jurisdictions makes compliance not only an ethical necessity but a financial and operational imperative. Crucially, as the pattern established in Chapter 1 makes clear, this exposure is not the product of ignorance: the risks associated with Xinjiang sourcing have been extensively documented in the public domain since at least 2018 (Zenz, 2019; Lehr & Bechrakis, 2019; Murphy & Elimä, 2021). The question is not whether Prada could have known, but why knowing was insufficient to prompt action. As Chapter 6 will demonstrate, this question is not unique to the fashion industry: in the DuPont PFAS case, corporate knowledge of harm preceded public disclosure by decades — and the answer lay not in ignorance, but in the deliberate construction of con-

cealment, regulatory capture, and disinformation as instruments of value maximisation.

2.3.5 Prada's Blockchain Initiative: A Step Forward?

In response to growing pressure for supply chain transparency and compliance with human rights regulations, Prada has partnered with the Aura Blockchain Consortium to implement blockchain technology that enhances product traceability and authenticity (Planet Tracker, 2022). Aura's Digital Product Passport solution enables Prada to provide consumers with verified information about product origin, sustainability, and lifecycle through NFC⁶ or QR codes, while protecting sensitive data via private or public blockchain options (Aura Blockchain Consortium, 2025).

This technology aligns with emerging EU regulatory requirements, including the Digital Product Passport provisions under development in connection with the CS3D framework, which require companies to identify and mitigate human rights risks across their supply chains (see Chapter 4, §2). Prada has also introduced digital collectables linked to physical products as part of its customer engagement strategy, offering benefits such as warranty verification, resale authentication, and exclusive access (Aura Blockchain Consortium, 2025).

However, while blockchain holds genuine promise for improving transparency at the consumer-facing end of the supply chain, its effectiveness in preventing forced labour depends on two conditions that Prada has not yet demonstrated: comprehensive integration across all supply chain tiers, including raw material sourcing, and independent verification of the data entered into the system. Blockchain technology can only record what is reported to it. If the underlying data — particularly regarding tier-two and tier-three suppliers operating in opaque environments such as Xinjiang — is incomplete, inaccessible, or deliberately obscured, then the technology functions as a traceability instrument for finished products rather than a due diligence mechanism for labour conditions. Without these foundations, the initiative risks functioning primarily as a reputational tool rather than a substantive advance in human rights compliance.

⁶ Near Field Communication (NFC) is a short-range wireless technology enabling data exchange between devices when brought close together, typically within a few centimetres. In luxury product authentication, NFC tags embedded in items allow consumers to scan products using smartphones to access verified digital information.

2.4 Case Study Conclusion

The case study of Prada and the forced labour of Uyghurs in China highlights critical operational and ethical deficiencies within the luxury fashion industry and offers insights for informing future regulatory, corporate, and multistakeholder initiatives aimed at advancing social sustainability. The key lessons are as follows.

- **Supply chain transparency as a structural imperative.** The lack of traceability in global multi-tiered supply chains constitutes a substantial barrier to the enforcement of labour standards and the prevention of human rights violations. Ensuring full supply chain transparency — including the disclosure of supplier identities and the geographic location of all production facilities — is essential to promoting accountability. In the absence of these conditions, efforts to monitor and address forced labour remain substantially compromised.
- **The necessity of mandatory human rights due diligence.** The limitations of voluntary corporate commitment underscore the urgent need for binding legal obligations. A mandatory HRDD framework — as the CS3D begins to establish, despite its weakening through the Omnibus I package (see Chapter 4, §3) — should require companies to conduct comprehensive risk assessments, implement robust mitigation strategies, and report their progress transparently. Effective enforcement must also encompass meaningful sanctions for non-compliance and accessible mechanisms through which workers can seek redress (ECCHR, 2023).
- **Coherence between brand narrative and practice.** The reputational positioning of luxury brands as ethical and sustainable necessitates alignment with operational practice. As the case of Prada illustrates, the contradiction between profitability and social responsibility cannot be resolved through policy documents alone. It requires operationally robust due diligence processes that extend across all tiers of the supply chain.
- **Systemic reform requires multistakeholder action.** Addressing the structural drivers of exploitation within fashion supply chains calls for coordinated efforts from both corporate actors and public authorities. Companies operating within or exporting to the EU should reinforce their commitment to transparent and robust HRDD by integrating ethical considerations across all tiers of their supply chains. Concurrently, public authorities — particularly at the EU level — bear a pivotal responsibility in fostering a regulatory

environment that promotes responsible business conduct, including the advancement of the proposed Forced Labour Regulation, robust international cooperation, and proportionate enforcement measures where appropriate.

3. Concluding Remarks

The Prada case study offers a lens through which to examine a far wider and more entrenched crisis: the systemic embedding of forced labour, modern slavery, and human trafficking within the architecture of global supply chains. As the ILO estimates, over 27.6 million individuals are currently subjected to forced labour worldwide (ILO, Walk Free, & IOM, 2022), with the fashion industry — spanning fast fashion, sportswear, and luxury — representing one of the highest-risk sectors due to its dependence on geographically dispersed, multi-tiered production networks.

The structural features that enable these abuses are not incidental but inherent to the dominant model of global supply chain organisation: the fragmentation of production across jurisdictions with weak labour governance, the delegation of sourcing decisions to intermediaries, and the absence of binding transparency obligations create conditions in which exploitation can persist largely invisible to the brands that ultimately profit from it. This is, as Chapter 2 established, a direct expression of the extractivist logic that governs the dominant economic paradigm — the systematic externalisation of costs onto those least able to resist (see Chapter 2, §3). In the case of Xinjiang, that externalisation operates at the intersection of corporate supply chain management and state-directed political repression, producing a form of harm that is simultaneously economic, cultural, and physical.

Modern slavery and human trafficking compound these dynamics by introducing coercive elements that extend well beyond poor working conditions. In contexts such as the XUAR, state-directed labour transfer programmes, ideological detention, and systematic surveillance transform labour exploitation into a mechanism of political repression, rendering conventional corporate due diligence instruments — social audits and supplier codes of conduct — structurally ineffective in such contexts (Lehr, 2020). The inability of third-party auditors to operate independently in such environments, as evidenced by the Better Cotton Initiative's withdrawal from the region in 2020, underscores the fundamental limitations of voluntary, market-based approaches to human rights compliance. As Chapter 3 established,

where soft law instruments are the dominant mode of governance, the governance gap remains structurally open (see Chapter 3, §2).

Addressing these challenges requires a fundamental reorientation of both corporate strategy and regulatory frameworks. Companies must move beyond aspirational policy commitments towards operationally robust due diligence processes that extend across all tiers of their supply chains, encompassing raw material sourcing, subcontractors, and commodity traders. This includes the mandatory public disclosure of supplier networks, investment in independent verification mechanisms, and the integration of grievance channels accessible to workers at every level of production.

Equally, public authorities — particularly within the EU — bear a critical responsibility to close the regulatory gaps that currently allow goods produced through forced labour to enter European markets without meaningful consequence. The advancement of the Forced Labour Regulation and the full implementation of the CS3D, coupled with robust enforcement and international coordination, represents a necessary step towards a trade environment in which human rights compliance is a legal obligation rather than a reputational choice.

The persistence of forced labour, modern slavery, and human trafficking within global supply chains is ultimately a governance failure — and an expression of the structural power imbalance between corporations operating across jurisdictions and the rights-holders whose labour sustains them. Correcting it demands urgent, coordinated, and binding action from corporations, legislators, and civil society alike.

Chapter 6 extends this analysis to the intersection of business, environmental destruction, and human rights, examining how the same extractivist logic — profit maximised through the externalisation of harm onto those least able to resist — operates in the case of DuPont and PFAS contamination, where corporate knowledge of harm preceded public disclosure by decades. Chapter 8 returns to the supply chain dynamics examined here, showing how gender inequality functions as a structural mechanism of labour exploitation in the Indian tea industry — a different sector, a different geography, and the same logic.

Box 1 - Guiding Questions

1. Luxury fashion brands command premium prices precisely because they claim to embody superior craftsmanship, exclusivity, and ethical values. Given their profit margins, the cost of robust human rights due diligence across their supply chains would be financially negligible. What structural incentives explain the systematic choice to externalise labour costs onto the most vulnerable workers instead — and what does that choice reveal about the relationship between brand narrative and operational reality?
2. Who bears the greatest responsibility in a forced labour situation of this kind: the state that designs and implements the coercive system, the company that directly employs the workers, or the brand that sources from that company at multiple removes? Does the answer change depending on the legal framework applied?
3. The UNGPs establish a corporate responsibility to respect human rights as a baseline expectation independent of state enforcement. Given Prada's documented performance against this standard, at what point does a failure to investigate become legally and morally indistinguishable from knowing participation?
4. Who is notably absent from the stakeholder mapping in this chapter? What structural factors explain this absence, and what would meaningful access to remedy require in this specific context?
5. Blockchain technology has been presented as a solution to supply chain opacity. Under what conditions could it function as a genuine due diligence mechanism, and under what conditions does it operate primarily as a reputational instrument?

Box 2 - Key facts

- An estimated 27.6 million people are subjected to forced labour globally, constituting 55.6% of the 49.6 million people living in modern slavery worldwide (ILO, Walk Free, & IOM, 2022).
- Approximately 85% of China's cotton originates from the XUAR, where between 900,000 and 1.8 million Uyghurs were detained in internment camps between 2017 and 2019 (Zenz, 2019; Uluyol et al., 2024).
- The XUAR government reported conducting 2.6 million state-sponsored labour transfers of Uyghurs and other minorities by September 2020, rising to 3.2 million by 2021 (Murphy & Elimä, 2021).
- Anhui Huamao, a documented supplier to Prada, Burberry, and Max Mara, operates XUAR facilities linked to state labour transfer programmes and located less than 1.53 km from Tamen Prison (Uluyol et al., 2024).
- Despite public human rights commitments, Prada scored 5 out of 100 in the 2021 KnowTheChain benchmark, ranking 35th out of 37 companies assessed (KnowTheChain, 2021).
- The Better Cotton Initiative withdrew from independent auditing in Xinjiang in March 2020, citing the impossibility of conducting independent visits under state surveillance conditions.
- The US UFLPA (2021) establishes a rebuttable presumption that all goods mined, produced, or manufactured wholly or in part in Xinjiang involve forced labour — a standard the EU has not yet adopted.

Box 3 - Key Concepts: A Working Glossary

Term	Definition
Forced labour	Work or service exacted from any person under the menace of a penalty and for which the person has not offered themselves voluntarily (ILO Convention No. 29, 1930).
Modern slavery	An umbrella term encompassing forced labour, debt bondage, forced marriage, and human trafficking; characterised by coercion, deception, or abuse of power (ILO, Walk Free, & IOM, 2022)
Human trafficking	The recruitment, transportation, transfer, harbouring, or receipt of persons by means of threat, force, coercion, or deception for the purpose of exploitation
Supply chain opacity	The limited visibility of a brand or company into the labour and environmental practices of its indirect suppliers, particularly at tier two and beyond.
Labour transfer programme	State-directed scheme relocating workers — typically from minority communities — into industrial employment, combining economic incentives with coercive elements including surveillance and ideological conditioning.
Hashar system	A historically rooted mechanism in the XUAR involving the forced mobilisation of workers without compensation, documented as continuing despite official claims of abolition (Uluyol et al., 2024).
UFLPA (Uyghur Forced Labor Prevention Act)	US legislation (2021) establishing a rebuttable presumption that goods produced wholly or in part in Xinjiang involve forced labour, prohibiting their importation unless the importer can demonstrate otherwise.
Xinjiang Production and Construction Corps	A state-owned enterprise and paramilitary organisation in the XUAR playing a central role in labour transfer programmes and cotton production; included on the US UFLPA Entity List in June 2022.
Digital Product Passport	An emerging EU regulatory instrument requiring products to carry traceable digital records of their origin, composition, and supply chain history, designed to enhance transparency and support due diligence.
Blockchain traceability	The use of distributed ledger technology to create immutable records of supply chain transactions; effective as a transparency tool only when integrated across all supply chain tiers and independently verified.
KnowTheChain benchmark	A benchmarking initiative assessing company performance on forced labour risks in global supply chains, covering disclosure, traceability, audits, worker voice, and remedy (scores out of 100).

Chapter 6

Business, Environmental Destruction, and Human Rights

Case Studies: DuPont's PFAS Production and The Aral Sea Disaster

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*We do not inherit the earth from our ancestors;
we borrow it from our children.*
Antoine de Saint-Exupéry, *Terre des Hommes* (1939)

This chapter examines the intersection of business activity, environmental destruction, and human rights violations through two case studies drawn from the chemical and agricultural sectors. The first concerns DuPont's decades-long production and concealment of per- and polyfluoroalkyl substances (PFAS), in which a deliberate value-maximising strategy led to the contamination of drinking water supplies across the United States and beyond, infringing upon communities' fundamental right to clean water. The second examines Uzbekistan's cotton industry and the state-driven environmental catastrophe of the Aral Sea, where Soviet-era irrigation policies, coercive cotton quotas, and the systematic use of forced child labour produced one of the most severe and irreversible ecological disasters of the twentieth century. Across both cases, the costs of harmful industrial and agricultural activity were externalised onto politically and economically marginalised communities, while corrective action was delayed by concealment, weak regulatory enforcement, and the absence of binding

accountability mechanisms. Both cases ultimately demonstrate that where the financial incentives to externalise harm are high and the probability of enforcement is low, neither voluntary corporate responsibility nor state regulation alone is sufficient to protect human rights and the environment.

Keywords: PFAS; DuPont; Aral Sea; Cotton industry; Child labour; Ecocide; Corporate accountability; Environmental justice; Pollution Offshoring.

Learning Objectives

After reading this chapter, you will be able to:
Explain how industrial and agricultural business activities can generate irreversible environmental destruction and human rights violations, with reference to the PFAS and Aral Sea cases.
Analyse the corporate decision-making logic that makes environmental harm privately rational even when it is socially inefficient, using the Expected Cost framework developed in the DuPont case.
Evaluate the role of state policy, regulatory capture, and disinformation campaigns in delaying corrective action in contexts of environmental harm.
Apply the concepts of ecocide, novel entities, and freshwater boundaries – established in Chapter 2 – to the specific cases examined in this chapter.
Critically assess the structural conditions under which neither voluntary corporate responsibility nor existing regulatory frameworks are sufficient to prevent severe and irreversible environmental harm, and identify what binding institutional responses would be required.

1. Introduction: When Business Destroys the Environment – and Human Rights With It

The intersection of business operations and environmental destruction is not accidental. As Chapter 2 established, the dominant economic paradigm is extractivist by design: it systematically externalises environmental and social costs onto those least able to resist, while concentrating the financial benefits among corporate and state actors (see Chapter 2, §3). The two cases examined in this chapter – DuPont’s PFAS contamination and the Aral Sea disaster – illustrate this logic with particular force, because in both cases the harm was not only foreseeable but foreseen, and concealment was chosen over correction.

As Chapter 5 demonstrated, this pattern — corporate knowledge of harm preceding public disclosure, deniability maintained through structural opacity — is not confined to any single sector. In the Prada/Uyghur case, supply chain complexity enabled brands to maintain distance from the consequences of their sourcing decisions. In the cases examined here, the mechanisms differ — deliberate concealment of scientific data, state-directed coercion, and regulatory capture — but the underlying logic is identical: the externalisation of harm onto politically and economically marginalised communities while corrective action is delayed for as long as the probability of enforcement remains low (see Chapter 1, §5).

Both cases speak directly to the planetary boundaries framework established in Chapter 2. DuPont's PFAS contamination is a paradigmatic example of the transgression of the novel entities boundary — synthetic chemicals introduced into the environment without precedent, persisting indefinitely, and accumulating across ecosystems and human bodies (see Chapter 2, §2). The Aral Sea disaster exemplifies the simultaneous crossing of the freshwater change and biosphere integrity boundaries: the irreversible diversion of two major river systems for cotton irrigation destroyed one of the world's largest inland water bodies, eliminated 24 native fish species, and produced ecological damage that independent scientific assessment now classifies as effectively permanent (see Chapter 2, §2; Kitzmann et al., 2025).

The governance gap — the structural mismatch between the transnational reach of corporations and states and the territorially limited systems of legal accountability (Ruggie, 2008; see Chapter 3) — is a central enabling condition in both cases. In the DuPont case, the gap operated at the level of domestic regulatory oversight: the absence of PFAS-specific regulation, combined with information asymmetry between the corporation and public authorities, allowed harm to persist for decades. In the Aral Sea case, the gap operated at the level of international accountability for state-directed environmental destruction: Soviet-era and post-Soviet Uzbek policies generated ecocide-scale harm with no binding international mechanism capable of intervention.

The cost of inaction in both cases is staggering. As Chapter 4 established, the projected cost of PFAS pollution in Europe alone reaches €1.7 trillion by 2050 (EEB, 2026; see Chapter 4, §1). These figures represent not hypothetical future risks but the quantified consequences of decisions already made — decisions that, as this chapter documents, were made with full awareness of the harm they would cause.

The chapter is structured as follows. Section 2 examines the DuPont PFAS case, with particular attention to the corporate decision-making logic that made pollution privately rational. Section 3 examines the Aral Sea disaster, focusing on the interaction between state policy, forced child labour, and irreversible ecological destruction. Section 4 draws comparative conclusions and identifies the institutional responses required to address harms of this nature and scale.

2. Case Study: DuPont's PFAS Production - Forever Chemicals and Forever Consequences

DuPont, founded in 1802, is a multinational conglomerate known for its substantial contributions to the chemical industry. Among its various products, Teflon — a non-stick coating containing per- and polyfluoroalkyl substances (PFAS) — has been particularly notable. PFAS are synthetic chemicals used in various industrial and consumer products for their water-, grease-, and stain-resistant properties. However, these chemicals are persistent in the environment and the human body, earning the name “forever chemicals”. DuPont's extensive production and use of PFAS led to severe environmental contamination and serious public health consequences, raising fundamental questions about corporate ethical and legal responsibility.

In May 1984, senior executives at DuPont convened at the company's Delaware headquarters for a meeting whose minutes would later become central evidence in decades of litigation. By that date, DuPont was aware of PFAS toxicity, its persistence in the environment, its accumulation in human blood, its transmission from pregnant women to their fetuses, and its infiltration into local drinking water supplies. The executives noted that the legal and medical departments would advise ceasing the use of C8 (i.e. the internal code assigned to the PFAS product) entirely, and also contemplated investments in mitigation measures. Despite these considerations, the business division decided to disregard these recommendations and instead chose to continue — and increase — PFAS emissions. The calculation was explicit: it was value-maximising to pollute if the probability of being held liable was less than 19% (Shapira & Zingales, 2017).

The question this chapter returns to — posed at the close of Chapter 5 in relation to the Prada case — is not whether DuPont knew. It did. The question is why knowing was insufficient to prompt corrective action. Section 2.2 provides a structural answer.

2.1 Allegations of Human Rights and Environmental Violations

2.1.1 The Story

In the 1940s, DuPont began producing PFAS, primarily used in Teflon® manufacturing. By the 1950s, internal documents revealed that the company was already aware of the toxic effects of PFAS on laboratory animals. Despite this knowledge, DuPont continued to produce and dispose of PFAS without adequate safety measures. By the 1980s, the company had discovered high levels of PFAS in the drinking water near its Washington Works plant in West Virginia. Rather than disclosing these findings to the public or to regulatory authorities, DuPont chose to conceal the contamination.

The turning point came in the early 2000s, when attorney Robert Bilott filed a class-action lawsuit against DuPont on behalf of affected residents. The case uncovered extensive evidence of the company's knowledge and deliberate concealment of PFAS's harmful effects. In 2005, DuPont settled with the Environmental Protection Agency (EPA) for USD 16.5 million — at the time, one of the largest civil administrative penalties in EPA history. This settlement was, however, only the beginning of the company's legal exposure.

Subsequent lawsuits and studies revealed that PFAS contamination was not confined to West Virginia but had spread across the United States and globally. Communities near DuPont facilities reported elevated rates of cancer, liver damage, thyroid disease, decreased fertility, high cholesterol, obesity, hormone suppression, and other serious conditions. A peer-reviewed study published in *Environmental Science & Technology Letters* estimated that more than 200 million Americans could have PFAS in their drinking water at concentrations exceeding the threshold considered safe by independent scientific studies (Andrews & Naidenko, 2020).

2.1.2 Negative Effects on the Environment

PFAS contamination has far-reaching environmental consequences. These chemicals have been detected in soil, air, and water bodies worldwide — from urban centres to remote regions. Their resistance to degradation means they accumulate over time, producing persistent environmental pollution that poses a significant and ongoing threat to ecosystems, affecting wildlife and plant life across trophic levels. Studies have documented reproductive and developmental harm in fish, birds, and mammals. The bioaccumulation of PFAS in the food chain further exacerbates the issue, producing higher concentrations in top predators — including humans.

This contamination profile exemplifies the transgression of the novel entities planetary boundary: synthetic substances introduced into Earth systems without evolutionary precedent, circulating globally, and resisting elimination (see Chapter 2, §2). Unlike many forms of pollution, PFAS contamination cannot be remediated through conventional techniques — it is, in the most literal sense, permanent, a “*forever chemical*”.

2.1.3 Negative Effects on Children and Adults

Children are particularly vulnerable to PFAS exposure due to their developing bodies and their higher relative consumption of water and food. Prenatal exposure has been linked to adverse birth outcomes including low birth weight, preterm birth, and developmental delays. Studies have shown that PFAS suppresses immune function, reducing vaccine efficacy and increasing susceptibility to infection. Children exposed to PFAS have also been found to exhibit higher cholesterol levels and impaired liver function, with long-term health consequences that are not yet fully understood.

In adults, PFAS exposure has been associated with a range of serious conditions including kidney and testicular cancer, liver damage, thyroid disease, decreased fertility, high cholesterol, obesity, and endocrine disruption. Research published in *Frontiers in Endocrinology* documents in detail how PFAS interferes with hormonal regulation, producing systemic health impacts across populations (Di Nisio et al., 2022). The bioaccumulative nature of these substances means that even low-level chronic exposure over time produces significant health risks — a pattern that is structurally similar to the cumulative harm documented in the Uyghur forced labour context in Chapter 5, where harm accumulates precisely because it is distributed, diffuse, and difficult to attribute to any single corporate actor.

2.1.4 Fundamental Human Rights Violations

The widespread contamination and health impacts of PFAS raise critical human rights questions. Access to clean water is a fundamental human right, formally recognised by the United Nations General Assembly in 2010. DuPont’s actions — which directly caused the contamination of community drinking water supplies — constitute an infringement of this right affecting millions of people who are, in the framework of the UNGPs, rights-holders with respect to the company’s conduct (see Chapter 3, §3).

The affected communities experienced not only physical health harm but also psychological and social stress. Many families faced substantial medical expenses, loss of income, and a significant decline in quality of life. These impacts fell disproportionately on low-income and marginalised communi-

ties, exacerbating pre-existing social inequalities — a pattern consistent with the broader extractivist logic that Chapter 2 identifies as foundational to the dominant economic paradigm (see Chapter 2, §3).

2.1.5 Broader Implications

The implications of PFAS contamination extend well beyond DuPont and the United States. PFAS production has been licensed to companies globally, generating widespread environmental and health consequences. In Europe, investigative journalism coordinated by *Le Monde* and its partners in the Forever Pollution Project (2023) identified 23,000 contaminated sites, including 2,300 classified as hazardous to human health, affecting water supplies across multiple countries.

Among the contaminated areas is the Veneto region of Italy, where the chemical company Miteni produced PFAS in Trissino (Vicenza) for several decades, releasing waste without control and polluting surface and groundwater as well as the food chain. More than 300,000 people have been affected by contamination of drinking water, dairy products, and fresh vegetables (Orellana, 2022).

As regulations in developed countries become stricter, producers are shifting operations to countries with less stringent environmental protections — a dynamic known as pollution offshoring (Saussay & Zugravu-Soilita, 2023). This regulatory arbitrage replicates the governance gap logic identified in Chapter 3: the costs of production are externalised to jurisdictions with weaker enforcement capacity, while the financial benefits accrue to corporations headquartered in regulated markets. The CS3D's value chain obligations, discussed in Chapter 4, represent one regulatory response to this dynamic — though their scope and enforcement timeline have been significantly weakened by the Omnibus I package (see Chapter 4, §3).

2.2 Business Ethics and Corporate Finance Decisions

In May 1984, DuPont held a crucial board meeting that would prove pivotal due to the events that followed, shedding light on the consequences of 'profit maximization culture' or 'value-based management' (Shapira & Zingales, 2017) - a cornerstone in corporate finance courses. The board deliberated over three options:

- Cease production — recommended by legal and medical services; would have forfeited approximately USD 150 million in annual net profits. By 2013, when production effectively ceased (28 years later),

the present value of anticipated profits amounted to approximately USD 1.1 billion.

- Abatement strategy — invest in a new incineration plant to reduce emissions; required technology investment of USD 19 million, substantially lower than the estimated external health benefits of approximately USD 350 million.
- Continue production without abatement (*status quo*) — chosen.

The third option was internally rational within the dominant value-based management framework if the present value of expected fines was less than the present value of foregone profits. If the probability of detection was under 19%, the expected financial benefit from continued production and pollution — and even increasing it — exceeded the legal costs: this is the profit-maximising choice.

In formal terms, what the firm calculates within a mainstream corporate finance framework is:

$$\text{Expected Cost} = p \times D \times \delta$$

Where:

p = probability of detection/enforcement

D = magnitude of damages (fines, compensation, cleanup)

δ = discount factor (reflecting time delay of sanctions)

In the DuPont case, all three components were systematically low from the firm's perspective:

- Low p : scientific uncertainty about regulatory response; absence of PFAS-specific regulation; information asymmetry (internal knowledge not public).
- Delayed D : harm would materialise decades later due to disease latency and the slow spread of groundwater contamination; legal processes are inherently slow.
- Heavy discounting ($\delta \ll 1$): future liabilities were heavily discounted in present-value terms.⁷

As a result, expected liability appeared negligible in 1984 terms — and the decision to continue, and to increase, production was privately rational, even though it was socially catastrophic.

The crucial insight of Shapira and Zingales (2017) is that this logic is not aberrant: it is the predictable output of a value-maximisation framework that discounts future liabilities and externalises social costs. The DuPont board

⁷ At a 10% discount rate, a USD1 billion future liability translates into a present value of approximately USD 150 million or USD 57 million, if realised in 20 or 30 years, respectively.

did not make an irrational decision. It made a decision that was entirely coherent within the dominant corporate finance model — and that is precisely the problem. As Chapter 4 established, voluntary corporate responsibility frameworks cannot correct for this structural incentive; only binding legal obligations with credible enforcement can alter the expected cost calculation sufficiently to change corporate behaviour (see Chapter 4, §2; and Chapter 3 for the insufficiency of soft law).

2.3 Discussion

2.3.1 Why it Happened

DuPont's handling of PFAS production and disposal can be attributed to several interacting factors. First, the absence of stringent regulatory oversight during the initial decades of PFAS production created a permissive environment in which the chemical industry, including DuPont, operated with minimal transparency and accountability. Second, there was a fundamental conflict of interest: DuPont prioritised profits over public health and environmental safety, suppressing internal knowledge of PFAS dangers to avoid regulatory scrutiny and financial losses. Third — and most structurally significant — the company actively shaped its regulatory environment through what the concluding case study section identifies as reverse lobbying: the use of disinformation campaigns, strategic doubt, and political pressure to delay and dilute regulatory action. This dynamic closely parallels the regulatory capture documented in Chapter 4 in the context of the Omnibus I weakening of the CS3D (see Chapter 4, §3).

2.3.2 How to Avoid Similar Incidents

Preventing similar incidents requires institutional responses commensurate with the scale and permanence of the harm. Regulatory agencies must implement and enforce stringent standards for chemical production and disposal, including clear safety thresholds, regular inspections, and substantial penalties for non-compliance. Critically, enforcement probability — the p in the Expected Cost formula — must be raised to the point where continuing to externalise harm is no longer privately rational.

Corporations must move beyond aspirational sustainability commitments towards operationally robust human rights and environmental due diligence processes, as the CS3D begins to require (see Chapter 4, §2). The EUDR's model of product-specific due diligence obligations — requiring companies to demonstrate that commodities do not contribute to environmental harm before they can be placed on the EU market — offers one tem-

plate for extending similar obligations to chemical production (see Chapter 4, §4).

2.3.3 The Role of Civil Society and Legal Advocacy

In the DuPont case, whistleblowers were not the primary mechanism of accountability. It was civil society, working in partnership with determined legal advocates — most notably attorney Robert Bilott — that exposed the company's knowledge and cover-up through persistent litigation. This underscores a critical structural point: where internal governance mechanisms fail and regulatory oversight is captured, the burden of accountability falls on civil society and the justice system. The same pattern will recur in Chapter 10, in the context of human rights defenders and SLAPPs.

Legal protections for whistleblowers must be strengthened to encourage individuals to come forward without fear of retaliation. Creating anonymous reporting channels and offering legal protections can further support those who seek to expose corporate misconduct. The uncovering of DuPont's violations, had it occurred earlier through effective whistleblower mechanisms, could have prevented decades of contamination and the associated human rights harm.

2.4 Case Study Conclusion

The DuPont PFAS case illustrates, with unusual analytical clarity, the structural conditions under which corporate harm becomes privately rational. The board's 1984 decision was not a moral failure in isolation: it was the predictable output of a value-maximising framework that discounted future liabilities, externalised social costs, and operated in a regulatory environment where the probability of enforcement was low. The case therefore demonstrates not only the essential role of a fair and effective justice system, but also the power of persistent civil society advocacy in countering entrenched economic interests and achieving accountability.

Four lessons emerge with particular force.

- **The cost-benefit logic of harm requires institutional correction.** The Expected Cost framework ($p \times D \times \delta$) shows that corporations will continue to externalise harm as long as the probability of enforcement is low, damages are delayed, and future liabilities are heavily discounted. Correcting this requires raising enforcement probability through credible regulation, shortening the time lag of liability, and ensuring that damages reflect the full social cost of harm — including harm to

rights-holders who are not party to any contractual relationship with the corporation.

- **Concealment is a deliberate strategy, not a failure of communication.** DuPont did not fail to communicate the risks of PFAS: it actively suppressed that information for decades through disinformation campaigns, strategic doubt, and regulatory capture. This pattern — which Chapter 3 identifies as a structural feature of the governance gap — demands transparency obligations backed by legal enforcement, not voluntary disclosure frameworks (see Chapter 3, §2; Chapter 4, §2).
- **Irreversibility demands precaution.** PFAS cannot be removed from the environment. More than 200 million Americans may have these chemicals in their drinking water; 23,000 European sites are contaminated. The projected cost of PFAS pollution in Europe alone reaches €1.7 trillion by 2050 (EEB, 2026; see Chapter 4, §1). These figures are the quantified consequence of a decision made in 1984. They argue, with considerable force, for precautionary regulatory frameworks that prevent harm before it becomes permanent — rather than liability frameworks that compensate for harm after the fact.
- **The shift to weaker jurisdictions extends the harm globally.** As regulations tighten in developed countries, PFAS production is migrating to jurisdictions with lower environmental standards, replicating the governance gap in new geographies. Addressing this requires binding international standards, not voluntary corporate commitments — and it requires extending the scope of human rights due diligence obligations to cover chemical production across the full value chain (see Chapter 4, §2).

*3. Case Study: The Aral Sea Disaster — Child Labour and Environmental Degradation*⁸

For approximately nine hundred years, the cotton industry has represented one of the most significant sectors in the global economy, both in

⁸ Section 3 of this chapter — The Aral Sea Disaster - Child Labour and Environmental Degradation — developed for educational purposes, is based on the master's thesis of Anna Ilaria Racalbutto (University of Padova, 2024), titled "*Social and Environmental Impacts of the Global Cotton Industry: An Analysis of Organic and Fairtrade Standards*", prepared within the Master's Programme in Human Rights and Multi-level Governance. The thesis was supervised by the author of this chapter. The author gratefully acknowledges her contribution

terms of employment and international trade. Today, cotton cultivation provides livelihoods for 300 million people, of which 99% are in lower-income countries (World Vision Australia, 2012).

In *The Empire of Cotton* (Beckert, 2015), Sven Beckert traces the global conflicts inherent in the cotton industry across centuries: slaves and producers, merchants and politicians, farmers and traders. Wars have been fought over fertile lands, individuals enslaved, child labour exploited, and workers denied fair wages. Small landholders have been displaced, indigenous peoples forced off their lands, and women — who traditionally spun and wove within household economies — pushed into cycles of debt and industrial labour.

The lack of transparency in textile supply chains limits the bargaining power of farmers and workers, exacerbated by government subsidies that distort global trade and keep cotton prices artificially low. Conventional cotton is considered by the Environmental Justice Foundation (2007) to be the world's "dirtiest" crop: despite covering only 2.4% of the world's cultivated land, it consumes 6% of global pesticides and 16% of all insecticides, generating a harmful dependency on toxic chemicals that causes significant environmental and ecological damage.

This structural context — low prices sustained by externalised labour and environmental costs, within a global value chain characterised by opacity and weak governance — is directly continuous with the supply chain dynamics examined in Chapter 5. The Uzbekistan case introduces an additional dimension: state coercion as an amplifier of corporate extractivism, operating at the intersection of forced child labour, ecological destruction, and authoritarian governance.

Uzbekistan, the fifth-largest global exporter of cotton, has faced severe documented issues with forced and child labour in its cotton fields, alongside significant environmental damage caused by intensive cotton farming. State policies have played a central role in perpetuating these abuses and their negative consequences for people, communities, and ecosystems. Against this background, this case study examines the ethical and human rights issues within Uzbekistan's cotton industry, focusing on child labour and the environmental catastrophe of the Aral Sea.

in unveiling this issue. The analytical framing, integration with Sections 1 and 2, and editorial adaptation are the responsibility of the chapter author.

3.1 Uzbekistan's Cotton Industry: Background

3.1.1 Child Labour

The Uzbek cotton industry has historically relied on forced child labour. The mobilisation of children for cotton harvesting can be traced to the Soviet era, when state-imposed cotton quotas required a massive labour force. Children were treated as a cheap and expendable source of labour, frequently removed from school to work in the fields.

Despite international condemnation and episodic reform commitments, the practice persisted well into the twenty-first century. Initially, children between the ages of 15 and 16 were primarily mobilised for cotton picking; over time, the average age decreased, with children as young as five documented as working in the fields (Bhat, 2013). This systemic exploitation was driven by government policies that consistently prioritised cotton production over education and child welfare.

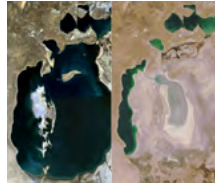
According to ILO (2016) reports, children were exposed to toxic pesticides while working long hours in hazardous conditions. Estimates suggest that tens of thousands of children were involved in cotton picking each year, with significant documented impacts on their education and health. The use of child labour in this context constitutes a clear violation of the ILO Worst Forms of Child Labour Convention (1999) and the UN Convention on the Rights of the Child (1989) — instruments whose significance for the volume's legal framework is established in Chapter 3 (see Chapter 3, §2).

As rights-holders — individuals whose rights are directly implicated by corporate and state conduct (see Chapter 3) — child cotton workers in Uzbekistan had no meaningful access to remedy: no independent labour unions, no functioning grievance mechanisms, and no international accountability mechanism capable of intervention. This is the governance gap in its most acute form: not merely a mismatch between corporate reach and legal systems, but the complete absence of protection for the most vulnerable members of a coerced labour force.

3.1.2 The Aral Sea Disaster

Beginning in the 1960s, the Soviet regime diverted water from the Amu Darya and Syr Darya rivers to irrigate cotton fields, drastically reducing inflow into the Aral Sea (Whish-Wilson, 2002; Loodin, 2020). The intensive use of water for cotton farming led to the destruction of what had been the world's fourth-largest inland body of water. This environmental catastrophe caused the disappearance of 24 native fish species and produced severe and cascading consequences for local communities and regional biodiversity (Bhat, 2013).

Figure 1 - Comparison of the Aral Sea between 1989 (left) and 2008 (right)



Source: Left: NASA Earth Observatory, Landsat 4 Thematic Mapper, 1989, University of Maryland Global Land Cover Facility. Right: NASA Earth Observatory, Terra/MODIS, 18 August 2008. <https://science.nasa.gov/earth/earth-observatory/aral-sea-3730> ; <https://science.nasa.gov/earth/earth-observatory/world-of-change/aral-sea>.

The environmental consequences extend far beyond the desiccation of the sea itself: progressive soil degradation, public health crises, and the near-total collapse of the regional economy. Excessive use of chemical fertilisers and pesticides contaminated soil and water bodies, destroying agricultural productivity and biodiversity, rendering the region one of the most ecologically damaged on the planet.

Historically, Central Asian communities — including the Uzbek people — practised sustainable agriculture through crop rotation, alternating between cotton, alfalfa, and pasture over a three-year cycle. The region's reliance on the Aral Sea supported a robust fishing industry and diversified agriculture, providing livelihoods for thousands. The “Cotton First” policy severely disrupted this balance: the fishing industry collapsed, displacing thousands of workers and forcing large-scale migration. Salinity levels rose from 10 grams per litre in 1960 to 100 grams per litre by 2000, rendering the water unsuitable for consumption or agricultural use.

The case goes further still. The island of Kantubek — situated in the middle of the Aral Sea until the end of the twentieth century, now accessible on foot — was the location of Aralsk 7, a Soviet biological weapons facility. Once the sea receded, the island became a peninsula, and hundreds of tonnes of hazardous materials, including weaponised anthrax, were left exposed and at risk of seeping into the surrounding ecosystem (Whish-Wilson, 2002). The consequences of this legacy for regional biosafety remain incompletely assessed.

The Aral Sea disaster exemplifies the simultaneous transgression of two planetary boundaries identified in Chapter 2: freshwater change — through the irreversible diversion of major river systems — and biosphere integrity — through the elimination of an entire aquatic ecosystem and the biodiversity it sustained (see Chapter 2, §2; Kitmann et al., 2025). Unlike most planetary

boundary transgressions, which are characterised as potentially reversible given sufficient corrective action, the Aral Sea case approaches effective irreversibility: the sea cannot be restored within any practically meaningful timeframe.

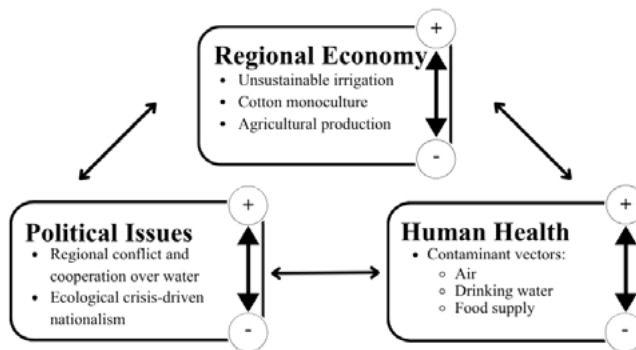
3.2 Business and State Impacts

3.2.1 Environmental Impact

The environmental impact of the cotton industry in Uzbekistan is profound and multidimensional. The overuse of water resources has not only destroyed the Aral Sea but exacerbated water scarcity across the region. The diversion of river systems for irrigation has reduced water availability for drinking, agriculture, and ecosystem maintenance – simultaneously infringing upon the human right to water and destroying the ecological foundation of regional livelihoods.

The systemic nature of this harm is illustrated in Figure 2, which maps the mutually reinforcing dynamics between the regional economy, political structures, and human health outcomes in the Aral Sea region. The diagram captures what the preceding analysis has described in narrative terms: a self-reinforcing cycle in which unsustainable irrigation and cotton monoculture degrade the economic base, generate political conflict over water resources, and contaminate the vectors – air, drinking water, and food supply – through which human health is most directly affected.

Figure 2 - Dimensional interrelationships in the Aral Sea region



Source: Adapted from White, K. D. (2013). Nature–society linkages in the Aral Sea region. *Journal of Eurasian Studies*, 4(1), 18–33. <https://doi.org/10.1016/j.euras.2012.10.003>

The excessive use of chemical pesticides and fertilisers produced severe soil and water contamination. These substances accumulated in soil and water bodies, causing long-term ecological damage, destroying local biodiversity, rendering agricultural land infertile, and generating serious public health consequences — including respiratory disease and cancer — among exposed communities. Jensen et al. (1997) documented significantly higher levels of pesticide residues in the blood of children from agricultural areas compared to those from non-agricultural areas, with residues of banned pesticides including DDT linked to developmental and cognitive impairment.

3.2.2. *Ecocide*

The concept of ecocide — defined by the Stop Ecocide Foundation (2021) as

“unlawful or wanton acts committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environment being caused by those acts”

is directly applicable to the Aral Sea case. The deliberate diversion of two major river systems, sustained over decades in full knowledge of its ecological consequences, produced one of the most dramatic examples of irreversible environmental destruction in the twentieth century.

The case of the Aral Sea represents a paradigmatic instance of state-directed ecocide: the destruction was not an unintended side effect of cotton production, but a foreseeable and foreseen consequence of policies maintained for their economic and political returns, at the expense of the region's ecology and population. The International Criminal Court is currently considering the recognition of ecocide as an international crime (Stop Ecocide Foundation, 2021). Were such a framework in place retrospectively, the Aral Sea case would constitute one of its most compelling test cases — and one that would implicate not only state actors but the international commodity trading system that sustained demand for Uzbek cotton throughout the period of destruction.

3.3 *Ethical and Human Rights Implications*

The use of child labour in Uzbekistan's cotton industry is a clear violation of international human rights standards. Children — as rights-holders — were deprived of their right to education, subjected to hazardous working conditions, exposed to toxic chemicals without protection, and denied access to remedy through any functioning mechanism. These violations breach the ILO Worst Forms of Child Labour Convention (1999), the UN Convention on the Rights of the Child (1989), and the ILO's Fundamental Principles and

Rights at Work — the framework established in Chapter 3 as the baseline of international labour standards (see Chapter 3, §2).

The role of state policy in perpetuating these abuses is unambiguous. The Uzbek government set unrealistic cotton quotas, controlled the entire production process, closed schools during the harvest season, mobilised children through teachers and local authorities under threat of penalties, and suppressed independent labour unions (Human Rights Watch, 2013). This coercive system is structurally analogous to the XUAR labour transfer programmes examined in Chapter 5: in both cases, state direction transformed labour exploitation into a mechanism of political control, rendering conventional due diligence instruments — social audits, supplier codes of conduct — largely ineffective (see Chapter 5, §2.2).

The ethical implications extend to the global community. International buyers of Uzbek cotton — brands and retailers throughout Europe, North America, and Asia — profited from a supply chain whose cost structure depended on coerced child labour and ecologically destructive production methods. The human rights due diligence framework established by the UN-GPs, and now partially codified in the CS3D, requires companies to identify and address these risks across their full value chains — including at the level of raw material sourcing (see Chapter 3, §5; Chapter 4, §2). The Uzbekistan case illustrates, with considerable force, why the restriction of that obligation to tier-one suppliers is insufficient.

3.4 Responses and Their Limitations

3.4.1 International Pressure and Trade Sanctions

International organisations and governments can exert pressure on state actors to enforce labour law and environmental regulation. Trade measures — including import restrictions on cotton produced using forced labour, analogous to the US UFLPA examined in Chapter 5 — provide one mechanism for raising the cost of non-compliance. International bodies including the ILO and the UN can monitor compliance and support reform processes. However, as Chapter 3 established, where the governance gap is most acute, soft law instruments and monitoring mechanisms are insufficient without binding enforcement (see Chapter 3, §2).

3.4.2 Sustainable Cotton Farming

Promoting sustainable farming practices — organic cotton production, efficient irrigation techniques, crop rotation — can mitigate environmental

damage and reduce the structural dependency on cheap, coerced labour. The Fairtrade Cotton Standard, launched in 2005, provides one model: requiring democratic farmer organisation, minimum price guarantees, prohibition of child labour, and minimisation of agrochemical use (Williams & Mancini, 2015). International aid and investment in sustainable agriculture can support these transitions, creating better economic conditions for rural communities and reducing the structural incentives for child labour exploitation.

The Fairtrade Standards distinguish between core requirements for the certification process and development requirements, which are intended to produce community and environmental improvements over time. To be labelled as Fairtrade, the entire production chain of end-products must be verified by an independent and transparent certification body (namely, FLO-CERT), which ensures that traders and producers address the social, economic, and environmental norms at every step of the supply chain. The Cotton Standard for small farmers' organizations was launched in 2005 to provide cotton farmers with an alternative model to the highly volatile conventional cotton market and the economic-related risks derived from environmental issues and excessive water use. The Cotton Standard in fact requires that: i) farmers shall be organised into cooperatives based on open, democratic, and transparent processes; ii) they shall receive a Minimum Price (or the market price, if higher) and the Fairtrade Premium Price used to support social and economic investments in their communities; iii) no child shall be involved in cotton picking; iv) the ban of genetically modified organisms (GMOs) and that the use of agrochemicals is minimised, to protect the health and safety of farmers and their families.

3.4.3 Corporate Responsibility and Supply Chain Due Diligence

Multinational companies sourcing cotton from high-risk jurisdictions have both a responsibility and a legal obligation — under frameworks including the CS3D and the OECD Guidelines — to conduct meaningful human rights due diligence across their full value chains (see Chapter 4, §2; Chapter 3, §5). This requires moving beyond first-tier supplier audits to engage with the conditions of raw material production — precisely the level at which the Uzbekistan abuses were concentrated. Sourcing from certified suppliers, investing in community development, and publishing transparent supplier lists are necessary but insufficient steps; binding due diligence obligations with credible enforcement are required to change the structural incentives.

3.4.4 Education and Awareness

Raising awareness among consumers, businesses, and policymakers about child labour and environmental degradation in cotton supply chains builds pressure for systemic change. Educational initiatives — including university curricula of the kind that motivates this volume — can foster a generation of informed professionals capable of identifying and challenging these structures from within corporate, regulatory, and civil society institutions.

3.5 Case Study Conclusion

The case of Uzbekistan's cotton industry illustrates the intricate and mutually reinforcing relationship between state policy, corporate demand, labour exploitation, and ecological destruction. Child labour was not an incidental feature of Uzbek cotton production: it was a structural requirement of a cost model that maintained artificially low prices by externalising labour costs onto the most defenceless members of the workforce. The Aral Sea was not collateral damage: it was the predictable consequence of an irrigation policy sustained in full awareness of its ecological effects, for as long as the political and economic returns outweighed the probability of accountability.

Addressing these challenges requires the same multifaceted institutional response identified in the DuPont case: binding due diligence obligations extending to raw material sourcing; credible enforcement mechanisms capable of altering the cost-benefit calculus of both corporate and state actors; and international frameworks that can reach the governance gap where it is most acute — in jurisdictions where state policy itself is the primary driver of harm.

4. Concluding Remarks

The two case studies presented in this chapter illustrate the mechanisms through which economic and political imperatives override environmental and human rights considerations, and the conditions under which such overrides are sustained over time.

DuPont's management of PFAS contamination represents a case of deliberate corporate concealment, in which the decision to continue and expand production was made with full knowledge of the associated health and environmental risks, on the basis of a cost-benefit calculation that discounted the probability of legal accountability. The Aral Sea disaster, by contrast,

originates in state policy: the Soviet-era prioritisation of cotton output, maintained through coercive labour practices and ecologically destructive irrigation, generated an environmental catastrophe whose demographic, economic, and ecological consequences remain largely irreversible.

Despite their structural differences, both cases share a common analytical logic. In each, the costs of harmful activity were externalised onto populations with limited political and economic power — the rights-holders whose water, land, health, and livelihoods were destroyed — while the benefits accrued to corporations or states. In each, early awareness of harm did not produce corrective action; it produced concealment. And in each, remedy came not from internal governance mechanisms but from external pressure: litigation, civil society advocacy, and, belatedly, regulatory intervention.

This pattern — which Chapter 1 identifies as structural rather than exceptional across the cases of this volume (see Chapter 1, §5) — suggests that voluntary corporate responsibility frameworks and self-regulatory mechanisms are systematically insufficient in contexts where the financial stakes of disclosure are high and the probability of enforcement is low. The Expected Cost framework developed in Section 2.2 makes this point with formal precision: until p , D , and δ are adjusted through binding institutional intervention, the rational corporate choice will continue to be externalisation of harm.

The cases also raise questions about the appropriate scope of legal liability. The concept of ecocide, discussed in the context of the Aral Sea, and the class-action litigation that eventually forced accountability on DuPont, both represent attempts to extend legal frameworks to cover harms that existing regulatory instruments failed to prevent. Whether through the recognition of ecocide as an international crime, the strengthening of domestic environmental enforcement, or the extension of mandatory human rights and environmental due diligence to cover the full value chain — as the CS3D begins to require — the cases argue for institutional responses commensurate with the scale and irreversibility of the damage caused (see Chapter 4, §2).

As Chapter 2 established, seven of nine planetary boundaries have already been transgressed (Kitzmann et al., 2025). The cases in this chapter are not historical curiosities: they are illustrations of the mechanisms through which those transgressions occur, and of the governance failures that allow them to persist. The extractivist logic that drove DuPont's board in 1984

and sustained Soviet cotton quotas through the collapse of an inland sea continues to operate — in new sectors, new geographies, and new supply chains. Recognising it as structural, rather than exceptional, is the analytical precondition for addressing it.

Chapter 7 extends this analysis to the intersection of deforestation and corporate finance, examining how the same logic — the externalisation of ecological and social costs onto the most vulnerable, sustained by opacity and weak enforcement — operates in the Indonesian palm oil sector, where the financial instruments of the global capital market have become direct enablers of forest destruction and the human rights violations that accompany it.

The Gibe III hydroelectric project, examined in Chapter 9, extends this logic into the domain of green infrastructure: a project classified as environmentally beneficial at the macro level, financed through instruments designed to promote sustainable development, whose consequences for the Omo River basin and Lake Turkana — a trajectory that independent researchers have compared to the Aral Sea disaster — illustrate that the label of sustainability does not suspend the extractivist logic, nor the obligations of states and corporations under international human rights law.

Box 1 - Guiding Questions

1. DuPont's 1984 board decision was internally coherent within a value-maximising framework. What changes to the Expected Cost equation would have been required to make continued PFAS production irrational from the firm's own perspective? What institutional mechanisms could produce those changes?
2. The Aral Sea cannot be restored. PFAS cannot be removed from the environment. How should irreversibility factor into the legal and regulatory frameworks governing industrial and agricultural activity — and does the existing precautionary principle, as applied in EU environmental law, go far enough?
3. Both cases demonstrate that remedy came from outside the corporation or state — through litigation, civil society advocacy, and investigative journalism. What does this reveal about the structural limitations of internal compliance mechanisms, and what implications does it have for the design of mandatory due diligence frameworks?
4. Both the DuPont and Aral Sea cases involved early internal awareness of harm followed by deliberate concealment or inaction. At what point does a corporation's or state's failure to act on known risks become legally indistinguishable from intentional harm — and what standard of proof should apply?
5. The concept of ecocide has been proposed as an addition to the Rome Statute of the International Criminal Court. Using the Aral Sea case as your primary example, make the strongest possible argument both for and against its inclusion?

Box 2 - Key facts

→

More than 200 million Americans may have PFAS in their drinking water at concentrations exceeding the threshold considered safe by independent scientific studies (Andrews & Naidenko, 2020).

→

In Europe, 23,000 PFAS-contaminated sites have been identified, including 2,300 classified as hazardous to human health; the projected cost of PFAS pollution in Europe reaches €1.7 trillion by 2050 (Forever Pollution Project, 2023; EEB, 2026).

→

DuPont’s internal cost-benefit analysis in May 1984 determined that continuing PFAS production was value-maximising if the probability of enforcement was below 19% – a calculation made with full knowledge of the substance’s toxicity (Shapira & Zingales, 2017).

→

The diversion of the Amu Darya and Syr Darya rivers caused the Aral Sea to lose 24 native fish species and saw salinity rise from 10 to 100 grams per litre between 1960 and 2000 (Whish-Wilson, 2002; Bhat, 2013).

→

Despite covering only 2.4% of the world’s cultivated land, cotton consumes 6% of global pesticides and 16% of all insecticides (Environmental Justice Foundation, 2007).

→

Children as young as five years old were documented working in Uzbek cotton fields; tens of thousands of children were mobilised annually under state coercion, with measurable impacts on education and health (Bhat, 2013; ILO, 2016).

→

In the Veneto region of Italy, PFAS production by Miteni affected more than 300,000 people through contamination of drinking water, dairy products, and fresh vegetables (Orellana, 2022).

Box 3 - Key Concepts: A Working Glossary

Term	Definition
PFAS (per- and polyfluoroalkyl substances)	A family of more than 10,000 synthetic chemicals used for their water-, grease-, and stain-resistant properties; persistent in the environment and human body; known as “forever chemicals” due to their resistance to degradation.
Forever chemicals	Informal designation for PFAS, reflecting their effective permanence in environmental and biological systems and the impossibility of conventional remediation.
Ecocide	Unlawful or wanton acts committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environment being caused by those acts (Stop Ecocide Foundation, 2021); proposed addition to the Rome Statute of the ICC.
Value-maximising strategy	A corporate decision-making framework that prioritises the maximisation of shareholder value, sometimes at the expense of social and environmental costs that are externalised onto third parties.
Expected Cost formula ($p \times D \times \delta$)	A corporate finance framework for evaluating the expected cost of liability: probability of enforcement (p) multiplied by the magnitude of damages (D) multiplied by a discount factor (δ) reflecting the time delay of sanctions.

Term	Definition
Pollution offshoring	The relocation of environmentally harmful production activities to jurisdictions with lower environmental standards, driven by regulatory arbitrage; replicates the governance gap in new geographies (Saussay & Zugravu-Soilita, 2023).
Regulatory capture	The process by which a regulatory agency designed to act in the public interest advances the commercial or political interests of the industries it is supposed to regulate, often through lobbying, disinformation campaigns, and strategic doubt.
Reverse lobbying	The active shaping of regulatory environments by affected industries through disinformation, strategic generation of scientific doubt, and political pressure, with the aim of delaying or diluting restrictive regulation.
“Cotton First” policy	The Soviet-era and post-Soviet Uzbek state policy that prioritised cotton monoculture production above all other economic, social, and ecological considerations, sustained through coercive labour practices and ecologically destructive irrigation.
Fairtrade Cotton Standard	A certification framework launched in 2005 requiring democratic farmer organisation, minimum price guarantees, prohibition of child labour, and minimisation of agrochemical use in cotton production.
Bioaccumulation	The progressive increase in the concentration of a substance in an organism’s tissues over time, particularly relevant to PFAS and persistent pesticides that accumulate through the food chain.

Chapter 7

Deforestation, Green Finance, and Corporate Accountability

Case Study: Michelin, BNP Paribas, and Green Bond

*The forest is not a resource for us, it is life itself, and it
directly controls our life.*

Ailton Krenak, Ideas to Postpone
the End of the World (2019)

Alberto Lanzavecchia
University of Padova

Deforestation is among the most consequential and structurally determined environmental challenges of our time, driven overwhelmingly by the expansion of a small number of agricultural commodity supply chains — principally beef, soy, palm oil, and paper — concentrated in the tropical regions of Brazil and Indonesia. This chapter examines the structural drivers of global deforestation and their intersection with corporate finance, using the case of Michelin and BNP Paribas's Royal Lestari Utama (RLU) green bond in Indonesia as a primary analytical lens. The case reveals how green finance instruments, despite their stated environmental objectives, can obscure rather than mitigate deforestation when certification frameworks lack independent verification and mandatory disclosure requirements, and when the pattern of deliberate concealment — documented across multiple sectors in this volume — reasserts itself in a new institutional register. The chapter further examines palm oil's role in European biofuel policy as an illustration of how demand-side climate instruments can generate perverse environmental outcomes when decoupled from supply-side regulation, and considers the EU Deforestation Regulation (EUDR) as the most substantial binding regulatory response to date. Together, the evidence raises fundamental questions about the adequacy of market-based mechanisms as responses to systemic ecological destruction rooted in extractivist logic.

Keywords: Deforestation; Green Bond; Greenwashing; Palm Oil; Tropical Forests; Land System Change; EUDR; Michelin.

Learning Objectives

After reading this chapter, you should be able to:
Identify and explain the principal commodity supply chains driving tropical deforestation, with reference to the specific roles of Brazil and Indonesia.
Analyse the structural conditions — regulatory, financial, and institutional — that allow green finance instruments to obscure rather than prevent environmental harm.
Apply the concepts of governance gap, soft law insufficiency, and supply chain opacity to the Michelin/BNP Paribas case study.
Evaluate the EU Deforestation Regulation (as a binding regulatory instrument and assess its potential and limitations in addressing the structural drivers of deforestation examined in this chapter.
Critically reflect on the relationship between market-based certification mechanisms, corporate accountability, and the rights of indigenous and local communities affected by land-use change

1. Introduction¹

The analysis of deforestation in this chapter builds directly on the argument developed in Chapter 6: that deliberate concealment — not ignorance — is the corporate standard response to internally known harm (see Chapter 6, §2.3.1). As the Royal Lestari Utama case will demonstrate, this pattern extends into the domain of green finance, where institutional endorsement and certification frameworks can function as mechanisms of deniability rather than accountability. It also connects to the broader structural argument running through this volume: that the land system change and biosphere integrity boundaries identified in Chapter 2 are not transgressed accidentally but as the foreseeable result of extractivist logic operating within governance gaps that voluntary instruments have systematically failed to close (see Chapter 2, §2; Chapter 3, §2)

¹ Sections 1.1 to 1.5 of this chapter present a condensed version of Ritchie, H. (2021a). *Drivers of deforestation*. Our World in Data. <https://archive.ourworldindata.org/20260417-112857/drivers-of-deforestation.html> [archived 17 April 2026]. Sections 1.6 to 1.10 present a condensed version of Ritchie, H. (2021b). *Palm oil*. Our World in Data. <https://ourworldindata.org/palm-oil>. The analytical framing, cross-references, and integration with Section 2 are the responsibility of the chapter author.

1. Drivers of Deforestation

Every year, the world loses around 5 million hectares of forests. 95% of this occurs in the tropics. At least three-quarters of this is driven by agriculture – clearing forests to grow crops, raise livestock, and produce products such as paper (Geist & Lambin, 2002; Gibbs et al., 2010; Hosonuma et al., 2012).

If we want to tackle deforestation, we need to understand two key questions: where we're losing forests and what activities are driving it. This allows us to target our efforts towards specific industries, products, or countries where they will have the greatest impact.

1.1 Brazil and Indonesia Account for Almost Half of Tropical Deforestation²

The study by Pendrill et al. (2019a) found that, between 2005 and 2013, the tropics lost an average of 5.5 million hectares of forest per year to agricultural land. That was over a decade ago, but the world is still losing a similar amount today: using satellite data, researchers at Global Forest Watch estimate that annual global deforestation is around 4 million hectares. 95% of this was in the tropics (Global Forest Watch, 2023; Curtis 2018).

One-third of tropical deforestation happened in Brazil. That was 1.7 million hectares each year. The other single country where large forest areas are lost is Indonesia – it accounted for 14%. This means around half (47%) of tropical deforestation occurred in Brazil and Indonesia. Annual deforestation is over 4 million hectares, with Brazil and Indonesia accounting for the majority of it (see Figure 1). The expansion of pasture for beef production, croplands for soy and palm oil, and, increasingly, the conversion of primary forest to tree plantations for paper and pulp have been the key drivers (Pendrill et al. 2019b). Increases in pasture lands have also had a major impact on land use in the rest of the Americas – outside of Brazil, Latin America accounted for around one-fifth of tropical deforestation.

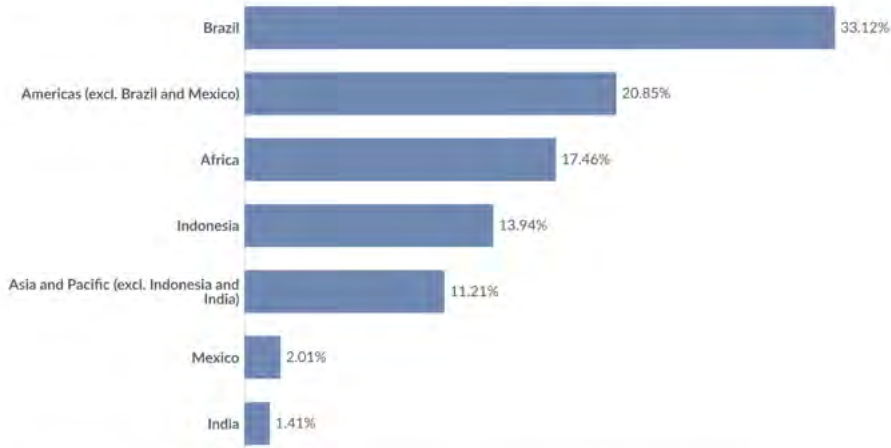
The growth of agricultural land in Africa accounted for around 17.5% of tropical deforestation. This may slightly underestimate the loss of forests in Africa for two reasons. Much of Africa's deforestation has been driven by subsistence agricultural activities, which are not always fully captured in national statistics. Secondly, depending on the permanence of agricultural activities

² The deforestation patterns documented in this section directly implicate two of the Planetary Boundaries examined in Chapter 2: the land system change boundary – transgressed by the conversion of tropical forests to agricultural land at the scale described – and the biosphere integrity boundary, reflected in the biodiversity losses associated with habitat destruction in Brazil and Indonesia (see Chapter 2, §2). The extractivist logic underpinning these patterns is analysed in Chapter 2, §3

such as slash-and-burn farming, some of this forest loss might be classified as temporary forest degradation rather than permanent deforestation (Pendrell et al., 2019b).

Figure 1 - Share of tropical deforestation

Share of tropical deforestation from commodity production – this includes forest clearance for croplands, pasture and tree plantations for logging. It's measured as the annual average between 2010 and 2014.



Data source: Pendrell et al. (2019). Agricultural and forestry trade drives large share of tropical deforestation emissions. OurWorldinData.org/forests-and-deforestation | CC BY

Source: Pendrell et al. (2019b), *Global Environmental Change*, 56, pp. 1–10. CC BY licence

1.2 Beef, Soy, and Palm Oil Are Responsible for 60% of Tropical Deforestation

If we want to tackle deforestation, we also need to know what causes it (see Figure 2). The expansion of pasture land to raise cattle was responsible for 41% of tropical deforestation. That's 2.1 million hectares every year – about half the size of the Netherlands. Most of this converted land came from Brazil; its expansion of beef production accounts for one-quarter (24%) of tropical deforestation. This also means that most (72%) deforestation in Brazil is driven by cattle ranching. Cattle in other parts of Latin America – such as Argentina and Paraguay – also accounted for a large amount of deforestation – 11% of the total. Most deforestation for beef, therefore, occurs in Latin America, with another 4% happening in Africa (Pendrell et al., 2019a).

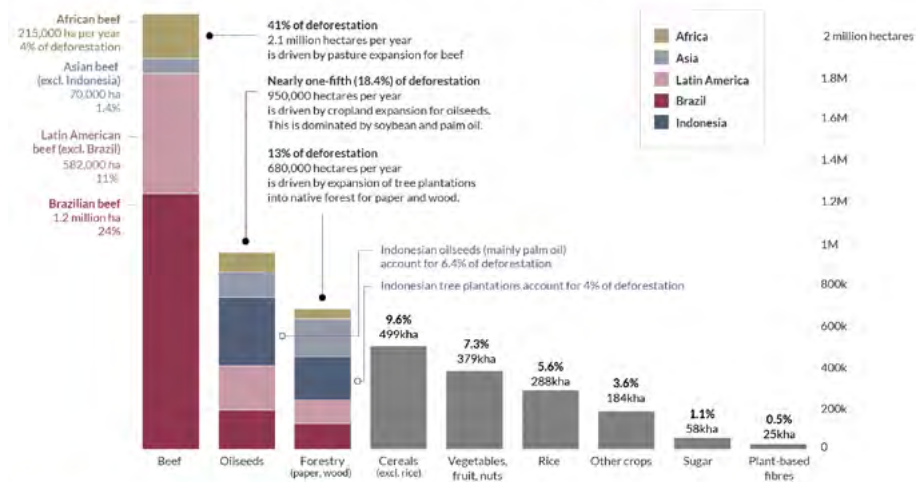
Palm oil and soy often claim the headlines for their environmental impact. They are categorized as 'oilseeds,' which also include a range of smaller

commodities such as sunflower, rapeseed, and sesame. They drove 18% of deforestation. Indonesian palm oil was the biggest component, in neighboring Malaysia, the expansion of oil seeds was also a major driver of forest loss. Soybeans are the most common oilseed in Latin America. Combined, beef and oilseeds account for nearly 60% of deforestation. While many people immediately think of food products such as tofu or soy milk, most of the global soybean production is used as feed for livestock or biofuels. Just 6% is used for direct human food (Fraanje & Garnett, 2020).

The third largest driver – forestry products, which is dominated by paper but also includes timber – then we cover almost three-quarters. Across Europe and North America, forestry products mainly come from managed plantation forests that have been established for a long period of time or are grown on previously unforested land. This is different from most tropical countries where forestry products also come from the logging of primary rainforests or their replacement with plantations. This destroys primary rainforests and, as shown in the chart, has been an important driver of deforestation in Indonesia and elsewhere in Asia.

Figure 2 - Drivers of tropical deforestation

Nearly all of global deforestation occurs in tropical and subtropical countries, 70% to 80% is driven by conversion of primary forest to agriculture or tree plantations. Shown is the breakdown of these drivers averaged over the years 2005 to 2013. Further observations since 2013 suggest that drivers have not changed substantially over this period.



Data source: Florence Pendrill et al. (2019). Deforestation displaced: trade in forest-risk commodities and the prospects for a global forest transition. OurWorldinData.org – Research and data to make progress against the world's largest problems.

Licensed under CC-BY by the author Håkan R. Håkan.

Source: H. Ritchie, Our World in Data, based on Pendrill et al. (2019a). CC BY licence.

1.3 We Can Tackle a Lot of Deforestation by Focusing on A Few Key Supply Chains³

If almost three-quarters of tropical deforestation is driven by the production of a few key products – beef, soybeans, palm oil, and paper – then we can achieve a lot by focusing our efforts on these supply chains. Soybean production in Brazil was once also an important driver of deforestation in the Amazon region (Tyukavina et al., 2017). In 2006, under pressure from retailers and NGOs, the world's major soybean traders signed Brazil's Soy Moratorium (SoyM) – the world's first voluntary zero-deforestation agreement. Traders agreed that they would not purchase soy that was grown on deforested lands in the Brazilian Amazon after July 2006. Overall, it was a success: (see Figure 3) in the two years before the agreement, 30% of soybean expansion in the region came at the expense of forest; afterwards, deforestation declined dramatically, and by 2014 only 1% of expansion was turning forests into land for oilseed production (Gibbs et al., 2015; Boucher et al., 2013).

There is evidence that while the moratorium reduced deforestation rates in the Brazilian Amazon, some of this deforestation may have 'leaked' to neighboring regions. Soybean production has shifted from the Amazon to the Cerrado region south of the Amazonas, often at the expense of forests there (Kuschnig et al. 2019). This suggests that zero-deforestation agreements can be effective but must be considered in the wider context of how they shape forest and agricultural changes elsewhere. To combat this, researchers have suggested that the SoyM be expanded to include not only the Amazon but also regions such as the Cerrado (Gibbs et al., 2015). If we can take similar action in the other industries – beef, palm oil and paper – then there is the potential to cut out a large share of deforestation today.

Looking to the future, a shift in focus towards sub-Saharan Africa looks likely. The demands for increased agricultural production in Africa are going to be large and could come at the cost of forests (Clark et al., 2020). Solutions there will have to focus on major improvements in crop yields so African farmers can produce more food without increasing the amount of land they need to do so.

Alternative ways of making high-quality protein could also be transformative. Beef is the leading driver of deforestation, and the demand for meat across the world will continue to grow in the coming decades. Technological innovations in meat substitute and cultured meat products would allow peo-

³ The displacement of deforestation from regulated to unregulated geographies – observable in the shift from the Amazon to the Cerrado following the Soy Moratorium – is structurally analogous to the pollution offshoring dynamic documented in Chapter 6, §2.1.5: regulatory pressure does not eliminate the harm but relocates it to jurisdictions with weaker enforcement.

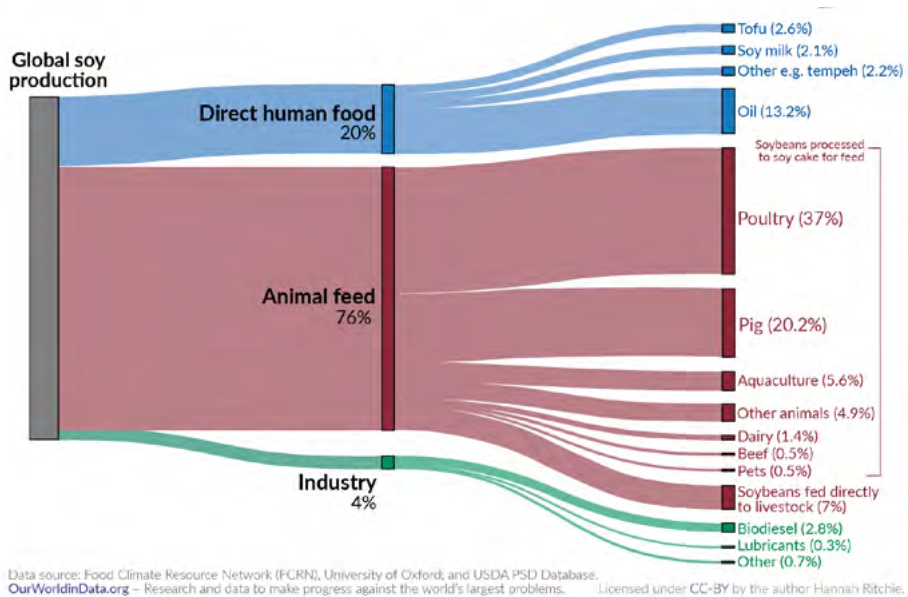
ple to continue eating meat-like products without the destruction of tropical forests that come with it (see Figure 3)

1.4 More Than Three-quarters of Global Soy Is Fed to Animals

Before we look at the evidence for whether Brazilian soy is responsible for the clearing of the Amazon, we should first understand what products have been driving this growth.

When someone mentions soy, we often think about foods such as tofu, soy milk, tempeh, or edamame beans. This feeds into the argument that meat and dairy substitutes – such as switching from meat to high-protein tofu or from dairy to soy milk – is in fact worse for the environment. But only a small percentage of global soy is used for these products. More than three-quarters (77%) of soy is used as feed for livestock.

Figure 3 - The world's soy: food, fuel or animal feed?



Source: H. Ritchie, Our World in Data. CC BY licence.

In the chart, we see the breakdown of what the world's soy was used for in 2018. On the left, we have total global soy production; in the middle, the three categories of uses (direct human food, animal feed, and industrial processes); and on the right, we have the end-use products. Over one-third (37%) of global

soy is fed to chickens and other poultry, one-fifth to pigs, and 6% to aquaculture. Very little soy is used for beef and dairy production – only 2%.

One-fifth of the world's soy is used for direct (i.e. not from meat and dairy) human consumption. Most of this is first processed into soybean oil. Typical soy products such as tofu, soy milk, tempeh, and edamame beans account for just 7% of global demand.

Soy can also be used for industrial purposes. Around 4% is used for biofuels, lubricants and other industrial processes. Biodiesel alone accounts for 2.8% (Fraanje & Garnett, 2020).

We might therefore conclude that the increased demand for soy has been driven by a growing appetite for meat, dairy and soybean oil. But to double-check we should look beyond this static single-year view and see how demand has changed over time. Maybe demand for these products has always been high, and instead the growth in demand has come from the increased popularity of products such as soy milk and tofu.

In the chart we see the allocation of soybeans to three categories. Processed products include all animal feed from soybean cake; soybean oil; and industrial products such as biofuels. Direct human food includes all non-animal-sourced foods from soy excluding oils. Direct animal feed is soybeans fed directly to livestock (rather than been processed into soybean cake first).

We see that most of this growth has come from the increased demand for processed soy – animal feed, biofuels, and vegetable oil. This rise has been particularly steep since 1990. By 2016, it had tripled from around 90 million to nearly 270 million tonnes. Over this period, demand for human food products such as tofu and soy milk increased by only 3 million tonnes (from around 7 to 10 million). Global meat production has more than tripled over the last 50 years. This increase has been most marked for poultry – the largest consumer of soy feed.

1.5 The Indirect Impacts of Soy Production

Soy may no longer be a direct driver of deforestation in the Brazilian Amazon. But we should also think about the indirect impacts of increased production. We know that the area being used to grow soy is still increasing and that land has to come from somewhere (Pendrell et al., 2019b). In particular regions, such as Mato Grosso, studies have found that instead of replacing forest, these croplands are replacing pasture (Barona et al., 2010). If this pasture land is simply shifting into forested areas, we could argue that soy is still a major underlying cause of deforestation.

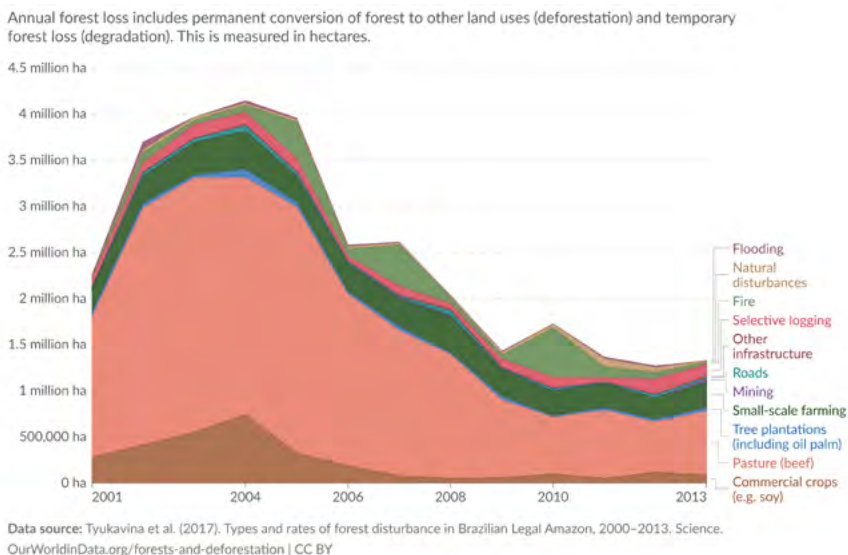
A recent study by researchers Nikolas Kuschnig, Jesús Crespo Cuaresma, and Tamás Krisztin reached this conclusion (Kuschnig et al., 2019). They combined high-resolution satellite imagery from the Mato Grosso region in Brazil

with socioeconomic panel data to quantify not only the direct impacts of soy production but also the spillover effects. The results suggest that by only looking at direct impacts, we underestimate the role that soy continues to play in deforestation.

It's also the case that the Amazonas region in Brazil gets most of the attention. But most soy is now grown in other regions of the country. In 2015, only 13% came from the Amazon, while 48% came from the Cerrado region (Soterroni et al., 2019). Some researchers, therefore, make a strong case that interventions such as the 'Soy Moratorium' need to be extended to cover regions beyond the Amazon if they are to be effective. Without wider implementation of these policies, we will continue to see deforestation simply shift elsewhere.

Whilst the expansion of pasture for beef production is the leading driver of deforestation in Brazil, soy still plays a significant role when we take its indirect impacts into account. There are a couple of key actions we can take to end deforestation. For consumers, since most deforestation is driven by expanding pastures for beef or soy to feed poultry and pigs, reducing meat consumption is an effective way to make a difference. For companies and regulators, zero-deforestation policies must be more widely implemented (i.e., not only focused on the Amazon) and must be more carefully designed to take spillover effects into account.

Figure 4 - Drivers of forest loss in the Brazilian Amazon



Source: H. Ritchie, Our World in Data, based on Tyukavina et al. (2017). CC BY licence.

1.6 Palm Oil Production and Use

Palm oil production has increased rapidly since the 1960s. Between 1970 and 2020, the world's production of palm oil increased by about 40 times. Global production went from only 2 million tones to around 80 million tones (Ritchie, 2021b).

The story of palm oil is less about it as an isolated commodity and more about the rising demand for vegetable oils.

Palm oil is very versatile and is used in a range of products across the world (Noleppa & Carlsburg, 2016):

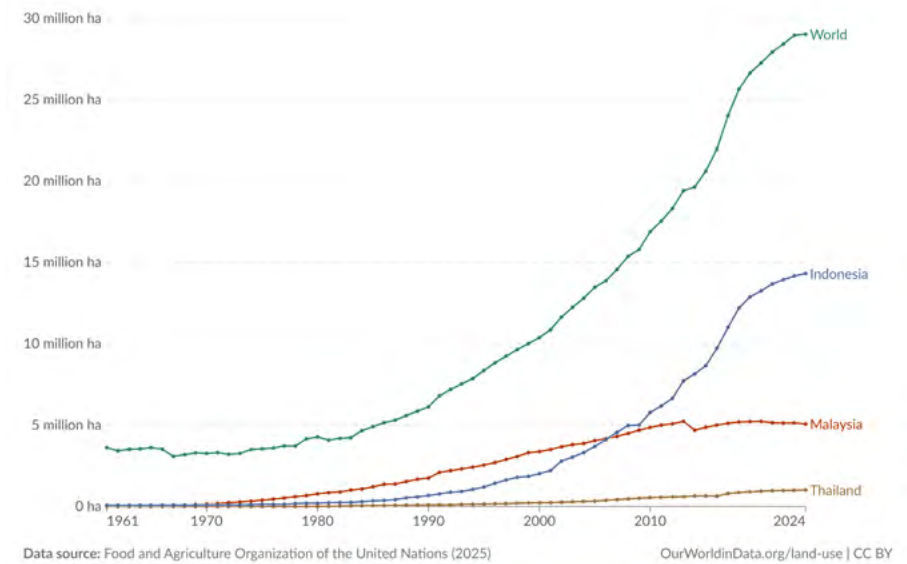
- Foods: over two-thirds (68%) is used in foods ranging from margarine to chocolate, pizzas, bread, cooking oils, and food for farmed animals;
- Industrial applications: 27% is used in industrial applications and consumer products such as soaps, detergents, cosmetics and cleaning agents;
- Bioenergy: 5% is used as biofuels for transport, electricity, or heat.

While food products dominate globally, this breakdown varies from country to country. Some countries use much more palm oil for biofuels than others. In Germany, for example, bioenergy is the largest use, accounting for 41% (more than food at 40%) (Noleppa & Carlsburg, 2016). A push towards increased biofuel consumption in the transport sector has been driving this, despite it being worse for the environment than normal diesel.

1.7 How Has Land Use for Palm Oil Changed Over Time?

How has the world achieved such a rapid expansion of palm oil production? There are only two ways in which we can produce more of a given crop: increase yields (growing more on a given amount of land) or expand the amount of land we use to grow it.

Global palm oil yields have increased over time but are far short of the increase in demand. This means that over the last 50 years, the amount of land devoted to growing palm oil has greatly increased. In the chart 5 [Ed.], we see the change in land use. Between 1970 and 2020, the land the world uses to grow palm has increased by almost ten times, from 3 million to almost 30 million hectares. Indonesia and Malaysia account for around 70% of global land use for palm oil. This is relatively little, considering that these countries account for more than 80% of production. This is because both countries achieve high yields (Ritchie, 2021b).

Figure 5 - Land use for palm oil production

Source: H. Ritchie, Our World in Data, based on FAO (2025). CC BY licence.

1.8 Is Palm Oil Responsible for Deforestation?

Land use to grow palm has increased significantly since 1970. But has this expansion come at the expense of tropical forests?

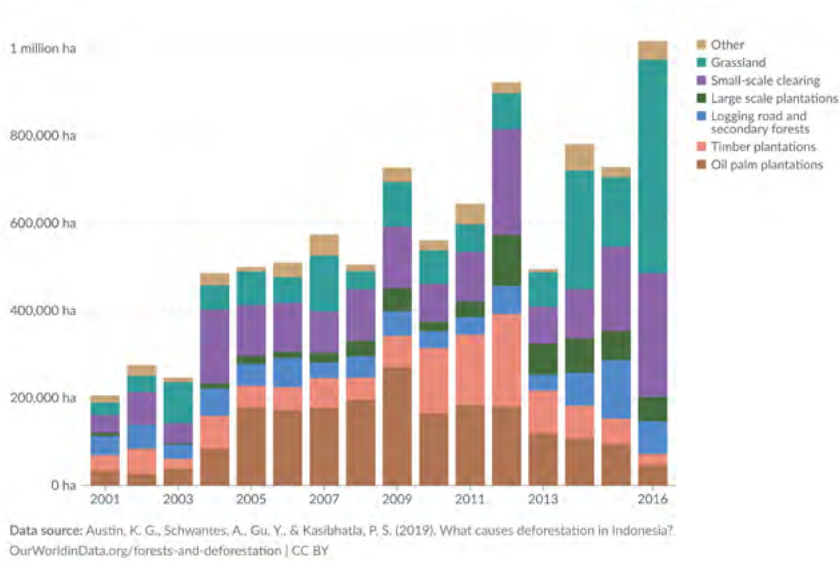
This seems like a simple question, but it is not as straightforward as we might expect. The IUCN (International Union for Conservation of Nature) Oil Palm Task Force conducted an in-depth review of the literature to understand the impact of palm oil on deforestation (Meijaard et al., 2018). There was a lot of variability in the results, depending on how a forest was defined, the geographic focus of the analysis, and the timeframe that was considered. Having done my own review of the literature, I conclude that palm oil has been a significant driver of tropical deforestation, especially in Southeast Asia [Ed.: First-person voice retained from source text - Ritchie (2021b), fn. 1.].

Some studies suggest that palm oil has played a very small role in global forest loss. One study suggests that palm oil is responsible for around 2% of global tree loss (Pendrill et al., 2019a). Another suggests it is responsible for only 0.2% of intact forest landscape loss (Potapov et al., 2017). This seems very low. But there are a couple of caveats to these figures. Firstly, they measure

forest loss, which combines both permanent deforestation (where trees do not regrow) and forest degradation (which is a temporary thinning of forests with subsequent regrowth). As we discuss in our related article on this, deforestation accounts for just one-quarter of global tree loss (Ritchie, 2021a). Palm oil’s contribution to deforestation – which has greater environmental impacts than degradation – would be higher.

Secondly, the figure for 0.2% is based on the loss of intact forest landscapes. Intact forest landscapes are a specific subset of forest landscapes, which are very rich sites of biodiversity and are largely undisturbed by human activity. Only 6% of the global intact forest landscapes are in Southeast Asia, which is the hotspot of palm oil expansion. Only 2.8% was in Indonesia, and 0.2% in Malaysia. So, even if all of these countries’ forests were wiped out by palm oil plantations, there would still be very little difference in this metric of global intact forest landscapes. The authors of the original study make it clear that the loss of intact forest landscapes should not be confused with primary forest loss.

Figure 6 - Drivers of deforestation in Indonesia

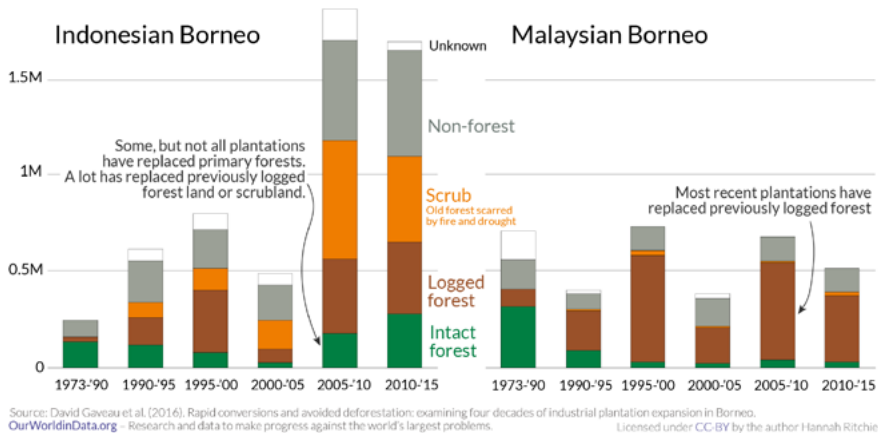


Source: Our World in Data, based on Austin et al. (2019). CC BY licence

So, how much of palm oil’s expansion has really come at the expense of forests? Let’s focus on the two key countries driving production: Indonesia and Malaysia. In the chart 6, we see the drivers of deforestation in Indonesia from 2001 to 2016 (Austin et al., 2019; Seymour & Harris, 2019). Oil palm plantations were the largest driver of deforestation over this period, accounting for

23%. However, we also see that its role has declined over the last decade: there was a peak in 2008–2009 when it reached almost 40% of Indonesia’s deforestation, but it has since declined to less than 15%.

Figure 7- Have palm oil and wood plantation replaced forest in Borneo?



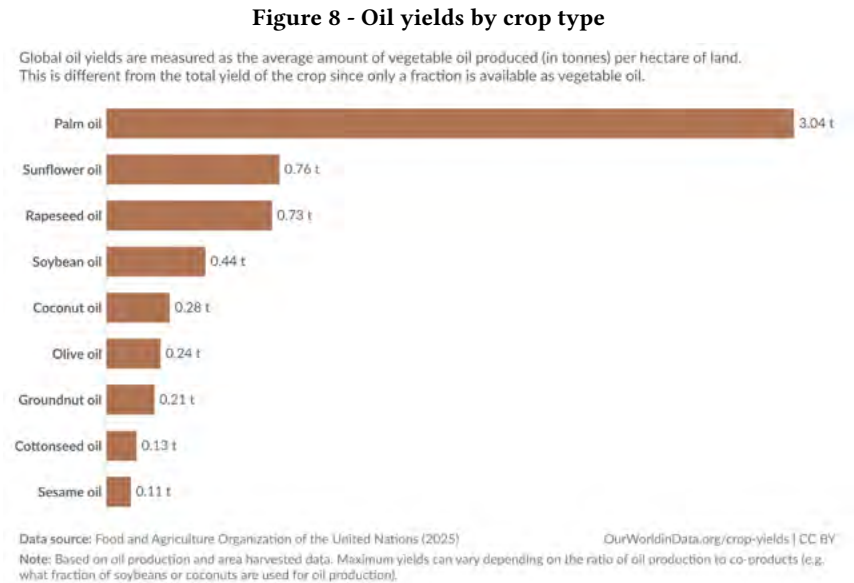
Source: H. Ritchie, Our World in Data, based on Gaveau et al. (2016). CC BY licence.

Part of what makes this question so challenging to answer is that it depends on whether you only consider palm plantations, which immediately and directly replaced existing forests, or whether you include plantations that very quickly replaced forests that had been logged for wood, paper, and pulp. In a paper published in *Nature*, David Gaveau and colleagues (2016) used satellite imagery to assess what types of land industrial plantations replaced in the Borneo region (Gaveau et al., 2016). Industrial plantations include palm oil and pulpwood tree plantations but are dominated by the former. This is shown for the Indonesian and Malaysian Borneo in the chart 7 [Ed.]. 75% of these plantations were grown on land that was previously forested in 1973. Not all of these plantations were the direct drivers of this replacement. In fact, only one-quarter of post-1973 plantations in Borneo were driven by the rapid conversion of this land to plantations (20–21% oil palm; 4.3–4.8% pulpwood). This is shown in green in the chart. Direct deforestation for palm oil played a larger role in Malaysia; 60% was driven by plantations, whilst in Indonesia, it was only 16%. This study only looks at the Borneo region. However, this is reasonably consistent with studies that have looked at the expansion of palm plantations more broadly. A global study of palm-driven deforestation found that in Southeast Asia, 45% of oil palm plantations came from areas that were forests in 1989 (Vijay et al., 2016). In Indonesia, this was 54%, and in Malaysia, 40%. These distinctions in how quickly palm oil plantations replaced forests

make it difficult to give a clear, single number on how much deforestation it has caused. But, most of the research concludes that, particularly in tropical forests in Southeast Asia, palm oil expansion has played a significant role.

1.9 Palm Oil Versus the Alternatives

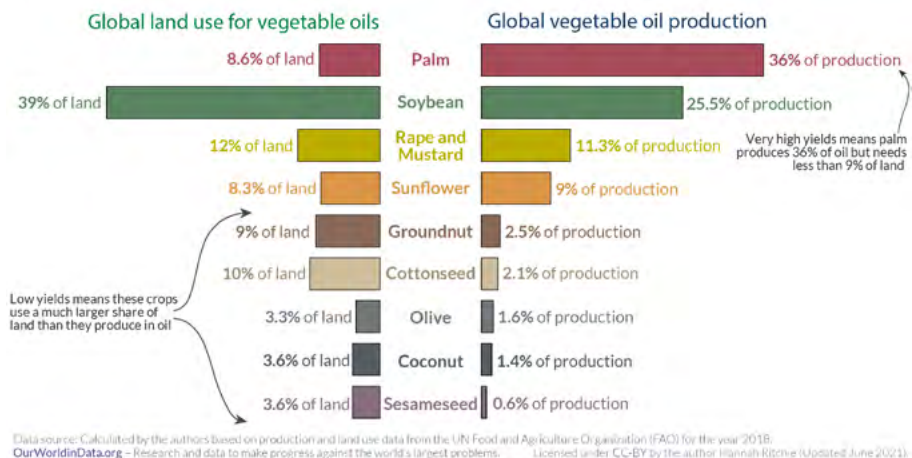
Palm oil has been an important driver of deforestation. But would the alternatives have fared any better? There are a couple of reasons why palm oil has been the favoured crop to meet the growing demand for vegetable oils. Firstly, it has the lowest production costs (Carter et al., 2007). Secondly, its composition means it's versatile and can be used for food and non-food purposes alike: some oils are not suited for cosmetic uses such as shampoos and detergents. Third, it gets incredibly high yields. If we weren't meeting global oil demand through palm oil, another oil crop would have to take its place. Would the alternatives be any better for the environment? We can compare crops in terms of their yields – how much oil we can produce from one hectare of land. Palm oil stands out immediately it achieves a much higher yield than the alternatives. From each hectare of land, you can produce about 2.9 tonnes of palm oil. That's around four times as much as alternatives such as sunflower or rapeseed oil (where you get about 0.7 tonnes per hectare) and 10 to 15 times as much as than popular alternatives such as coconut or groundnut oil (see Figure 8).



Source: Our World in Data, based on FAO (2025). CC BY licence.

Let's take a look at how this comparison affects the global landscape of oil crops in terms of production and land use. In the chart, we see the breakdown of global vegetable oil production in 2018. On the left, we have each crop's share of global land use for vegetable oils; on the right, we have its share of production. We know from our yield comparison that palm oil achieves a much higher yield. What this means is that it accounts for a very high share of oil production without taking up much land. In 2017, it produced 36% of our vegetable oil but took up only 8.6% of the land. Sunflower oil was almost exactly proportional in terms of how much oil it produced relative to how much land it took up: it produced 9% of oil and required 8.3% of land. Rape and mustard seed oil were also in proportion. The rest – soybean, olive, coconut, groundnut, and sesame seed – used more land than they gave back in oil production. Coconut oil, for example, provided only 1.4% of global oil but required 3.6% of the land. It's true, of course, that some crops provide co-products in the process. The non-oil fraction of soybeans, for example, can be allocated to other uses, such as high-protein animal feed (Ritchie, 2021a). Therefore, using this land to grow crops meets other food demands at the same time. But this doesn't change the fact that if the world requires a given amount of vegetable oil, it is the oil yield per hectare of each crop that we care about – regardless of whether it provides co-products in the process.

Figure 9 - Share of vegetable oil land use and production by crop



Source: H. Ritchie, Our World in Data, based on FAO data (2018). CC BY licence.

1.10 How Can We Use Palm Oil Without Destroying Tropical Forests?⁴

There are a number of steps we can take to ensure we meet the global demand for oils without destroying our tropical forests.

Substitutes for palm oil do not always exist. Palm oil is unique in its versatility, meaning it is suitable for a range of foods, cosmetics, industrial applications, and biofuels. Substitution would be feasible for most food products. Substitution in industrial processes would be more difficult, especially if we want to replace it with oils grown in temperate countries: sunflower or rapeseed oil is not suited to products such as soaps, detergents, or cosmetics. One sector where alternatives do exist is bioenergy, which brings us to our next point.

European countries should stop using palm oil for biofuels. The EU – alongside China and India – is one of the largest importers of palm oil (Ritchie, 2021b). There are some products where using palm is our best option. This is not the case for biofuels, yet two-thirds of the EU's imported palm oil goes to bioenergy production (Transport & Environment, 2019). Using palm oil as a biofuel is worse for the environment than petrol. A meta-analysis conducted by the Royal Academy of Engineering on EU biofuels found that when we factored in land-use change, the greenhouse gas emissions from palm oil were higher than those from using a petrol car (Royal Academy of Engineering, 2017). Other studies have shown that when we take the additional environmental impacts into account, these biofuels are much worse than conventional fuels (Zah et al., 2007). By using palm oil, EU countries are not only increasing emissions, they're passing the responsibility and accountability of these emissions on to other countries. A ban on using palm oil for biofuels would reduce this impact while allowing global palm oil to be used for purposes where there are few better alternatives – food and cosmetic products.

Increase companies' sourcing from suppliers with sustainability certification. There are now a number of certification schemes that help to verify whether palm oil is being produced in a sustainable way. The most well-known is the Roundtable on Sustainable Palm Oil (RSPO). The RSPO was

⁴ The EU Deforestation Regulation (EUDR, Regulation 2023/1115), examined in Chapter 4, §4, represents the most significant binding regulatory response to the commodity-driven deforestation patterns described in this section. It requires that palm oil, soy, beef, timber, cocoa, coffee, and rubber placed on the EU market are deforestation-free after 31 December 2020, backed by mandatory due diligence statements. The limitations of voluntary certification schemes such as the RSPO – covering only around one-fifth of global palm oil production (RSPO, 2023) – in the absence of binding enforcement are examined in §2 below, in light of the soft law insufficiency argument developed in Chapter 3, §3.

launched in 2004 and provides certification for suppliers who produce their crops in a more sustainable way by conducting impact assessments, managing high-value areas of biodiversity, not clearing primary forests, and avoiding land clearance through fires (Meijaard et al., 2018). Consumer demand for sustainable palm oil puts pressure on food and cosmetic companies to source from certified suppliers and ultimately rewards the most sustainable growers. Around a fifth of palm oil production is covered by the RSPO (RSPO, 2023). To have a real, permanent impact, certification needs to cover a much larger number of growers.

Increased crop yields. If we want to reduce agricultural expansion, we want to maximize crop yields through effective management practices, improved varieties, and choosing the most productive areas of land.

This combination of interventions involves actors across the full production line, from agricultural scientists improving crop varieties to palm oil growers, governments, food and cosmetic producers, retailers, and consumers. Pressure from consumers can filter through to growers. To do this effectively, understanding consumers has to be clearer. Many believe that boycotting palm oil is how we make a difference. But as we've seen, the alternatives are not necessarily better; more sustainable palm oil (used for food, not fuel) rather than no palm oil is what we should be pushing for.

2. Case Study: Michelin, BNP Paribas, and the Royal Lestari Utama Green Bond⁵

Green finance involves financial investments aimed at promoting environmental sustainability, including green bonds, green loans, green mortgages, and sustainable investment funds. In 2023, global green bond issuance reached approximately USD 600 billion, continuing an upward trend with a compound annual growth rate (CAGR) of around 30% between 2013 and 2023. Europe and the United States lead in issuance volumes, with notable growth in Asia. Efforts to standardise green bond frameworks — including the Green Bond Principles and the EU Green Bond Standard — have played a role in enhancing market credibility and attracting a broader investor base.

⁵ Section 2 of this chapter — Case Study: Michelin, BNP Paribas, and the Royal Lestari Utama Green Bond — draws primarily on investigative material published by Mighty Earth (2020) and Valentino, Barbiroglio & Accardo (2022) for Voxeurop, supplemented by primary documents from BNP Paribas (2017) and Michelin (2022). The analytical framing, the integration with the volume's theoretical framework (in particular the pattern of deliberate concealment established in Chapter 1, §5 and developed in Chapter 6, §2.3.1), and the editorial adaptation are the responsibility of the chapter author.

In 2018, BNP Paribas, one of Europe's largest banks, marketed a green bond valued at approximately USD 95 million to fund a project in Indonesia: the Royal Lestari Utama (RLU) project, a joint venture between Michelin and Barito Pacific Group, focused on developing sustainable rubber plantations in Jambi and East Kalimantan provinces on the island of Sumatra. The case that follows illustrates how the pattern of deliberate concealment — identified in Chapter 1 (see Chapter 1, §5) and confirmed in the DuPont case in Chapter 6 — reasserts itself within green finance: not as individual misconduct, but as a structural outcome of the incentives embedded in voluntary certification frameworks operating within a governance gap.

2.1 Financing and Players Involved

The green bond issuance involved multiple key players.

- **Royal Lestari Utama (RLU)** was at the forefront (see Figure 10), tasked with developing sustainable rubber plantations. In December 2014, Michelin acquired 49% of RLU, with Barito Pacific — led by Prajogo Pangestu, an Indonesian timber magnate with a documented history of deforestation — holding the remaining 51%. The two shareholders committed to a 23-year business plan extending to 2040, investing a total of USD 100 million in equity, with USD 55 million contributed by Michelin. This amount proved insufficient to support the high-risk venture, as projected profits were reduced by the decline in rubber prices in 2015.
- **Michelin.** Headquartered in Clermont-Ferrand, France, Michelin is the primary actor around whose strategic interests the entire project was structured. As the world's second-largest tyre manufacturer, Michelin requires large and stable volumes of natural rubber — a commodity for which Indonesia is a principal global supplier. The RLU joint venture was explicitly designed to secure a long-term, vertically integrated supply of natural rubber while simultaneously positioning Michelin as a leader in sustainable sourcing. Michelin's stated corporate purpose — “we care about giving people a better way forward” — anchors its public identity in safety, environmental responsibility, and what the company describes as an “All-sustainable approach” (Michelin, n.d.). The RLU project was presented as a flagship expression of this purpose: a reforestation initiative in areas described by Michelin as “devastated by uncontrolled deforestation” (Michelin, as cited in Mighty Earth, 2020).

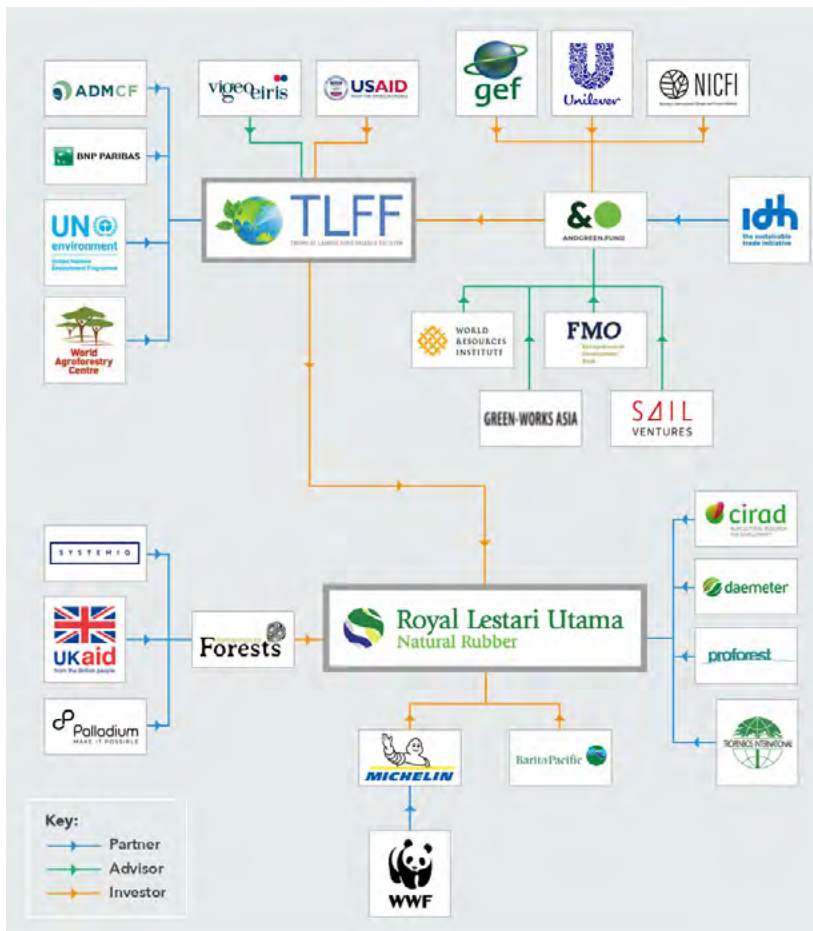
This framing is analytically pivotal. As the evidence reviewed in §2.2 demonstrates, Michelin conducted multiple economic, agricultural, social, and environmental assessments in Jambi between February and October 2014 — assessments that preceded both the formal joint venture agreement (December 2014) and the public sustainability narrative (May 2015). The gap between what those assessments could reasonably have revealed and what was publicly disclosed is at the centre of the corporate accountability question this case raises (see Chapter 1, §5).

Michelin held 49% of RLU, contributing USD 55 million of the total USD 100 million equity commitment. When the venture encountered liquidity constraints — partly due to the decline in rubber prices from 2015 — the financing gap was not covered through a direct bank loan to Michelin or RLU. Instead, BNP Paribas structured the financing as a green bond issued through TLFF. The choice of instrument was not neutral: rather than extending a loan and retaining the associated credit risk on its own balance sheet, BNP Paribas transferred that risk to the capital market, distributing it across the multiple investors who subscribed to the bond. The financial exposure that a conventional lending relationship would have kept within the bank was thus externalised — and with it, any incentive for the lender to conduct the kind of rigorous ongoing monitoring that a direct creditor relationship would typically entail. The risk was socialised; the reputational benefit of green certification remained with the issuers.

- **BNP Paribas and TLFF.** In October 2016, BNP Paribas co-founded the Tropical Landscape Finance Facility (TLFF) with the backing and supervision of the United Nations Environment Programme (UNEP), located in Jakarta and authorised by the Indonesian government. TLFF is described as an innovative financial platform supporting commercial projects aligned with the Paris Climate Agreement and the UN's Sustainable Development Goals (Tropical Landscape Finance Facility, n.d.). By November 2016, Michelin and Barito Pacific reached out to TLFF. In spring 2018, TLFF initiated its pilot project — TLFF I — a green bond designed to fund a loan for RLU.
- **United States Agency for International Development (USAID)** guaranteed to cover 50% of losses that could occur on 30% of the total value of the A-class bonds, enabling those bonds to obtain the maximum AAA rating.
- **Independent advisors** engaged to certify environmental and social integrity included:
 - WWF: guidance on biodiversity conservation;

- Vigeo Eiris: ESG rating agency tasked with assessing the green bond's alignment with sustainability criteria;
- Earthworm Foundation (formerly The Forest Trust): best practices in sustainable agriculture;
- International Finance Corporation (IFC): performance standards used as a benchmark for environmental and social risk management;
- Remark Asia: monitoring and evaluation;
- Daemeter Consulting: local environmental and social impact assessment and stakeholder engagement..

Fiugre 10 - Royal Lestari Utama's partners, investors, and advisors



Source: Wijeratna, A., Mighty Earth (2020). Licensed per Mighty Earth report terms.

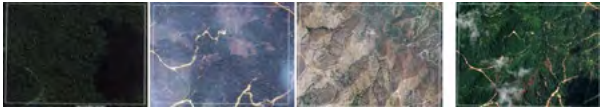
2.2 Allegations of Greenwashing

Despite the involvement of multiple independent advisors, the project quickly became controversial. Investigations by Voxeurop and Mighty Earth uncovered several critical issues.

1. **Pre-project deforestation.** Before Michelin's formal involvement, RLU subsidiaries had cleared thousands of hectares of primary forest in Jambi province — critical habitats for endangered Sumatran tigers, elephants, and orangutans. Between 2011 and 2014, RLU subsidiaries in the LAJ concession converted approximately 5,782 hectares of forest to rubber plantations (an area equivalent to approximately 8,260 football fields). Independent satellite analyses estimated that a total of 8,468 hectares were deforested in the LAJ and WMW concessions before the joint venture was formally established. Satellite images and field reports further indicated that around 13,000 hectares of forest were cleared between 2014 and 2019, directly contradicting the project's sustainability claims (see Figure 11). This deforestation was not adequately disclosed during the green bond certification process — a pattern consistent with the “corporations knew, or had reasonable means to know” principle established in Chapter 1 (see Chapter 1, §5).
2. **Flawed certification process.** VigeoEiris failed to consider deforestation by RLU's subsidiaries. Their assessment relied on documents provided by RLU and BNP Paribas, without thorough field verification or interviews with Michelin's management. The auditor's parent company, Moody's, also rated the bonds highly — raising concerns about structural conflicts of interest in the certification process (as foreshadowed by the greenwashing analysis in Chapter 4; see Chapter 4, §3).
3. **Environmental and CO₂ impact.** Independent reports indicate that the project resulted in major biodiversity loss and CO₂ emissions. The deforestation in the LAJ concession is expected to release approximately 13 million tonnes of CO₂ between 2009 and 2030 — not offset by the estimated 8.27 million tonnes of CO₂ absorption by rubber plantations and partial reforestation. Deforestation led to habitat fragmentation, loss of biodiversity, and increased human-wildlife conflict. The deforested areas, identified by WWF Indonesia, are home to two vulnerable forest-dependent indigenous peoples and constitute critical habitat for endangered Sumatran elephants, tigers, and orangutans.
4. **Community impact.** Local communities, including indigenous groups, reported adverse effects on their livelihoods. Land acquisition processes disregarded local land rights and free, prior, and informed consent

(FPIC) — a foundational principle of the UNGPs framework (see Chapter 3, §3) — leading to disputes, displacement, and reports of intimidation by LAJ, with support from police and national army forces (timeline, 2012). Promised benefits — employment, infrastructure, social programmes — were either insufficient or not delivered. These affected communities are, in the language of the UNGPs, rights-holders (see Chapter 3 for the definition of rights-holders): individuals and communities whose human rights are directly implicated by corporate operations within the value chain.

Figure 11 - Progressive industrial deforestation in the LAJ 4 Case Study Area (Jambi), 2012–2020



Note. Aerial images of the same location (–1.184486°, 102.489268°), from left to right: 4 April 2012, 20 June 2013, 5 January 2015, and 5 January 2020: Wijeratna, A., Mighty Earth (2020). Licensed per Mighty Earth report terms

Timeline of key events

Year	Key events
2008	16 July: Prajogo Pangestu establishes PT Inti Energi Perkasa (IEP). 19 September: PT Lestari Asri Jaya (LAJ) is founded. Rubber tree plantations commence within the Jambi concessions.
2009	An environmental impact assessment plan for rubber and timber tree plantations in the LAJ concessions is approved. A plan to establish the ‘Bukit Tigapuluh Ecosystem’ buffer zone is agreed upon by NGOs and local governments but never implemented.
2010	A report by KKI Warsi, FZS, Eyes on the Forest, and WWF-Indonesia raises alarms about deforestation in LAJ concessions and extinction risks for tigers, elephants, and orangutans. Several local communities report the absence of FPIC consultation before LAJ begins deforestation activities.
2011	13 June: IEP is renamed PT Royal Lestari Utama (RLU). 29 July: LAJ becomes a subsidiary of RLU
2012	Industrial deforestation intensifies in the LAJ 4 case study areas. Reports of intimidation and forced evictions of villagers by LAJ, with support from police and national army.
2013	17 June: Michelin and PT Petrokimia Butadiene Indonesia sign a joint venture agreement to build a synthetic rubber processing plant. Deforestation in the LAJ 4 areas increases dramatically.

2014	February–October: Michelin conducts multiple economic, agricultural, social, and environmental assessments in Jambi. 17 December: Michelin and PT Satria Cemerlang sign a joint venture agreement for sustainable natural rubber production, initiating the RLU project.
2015	March: Michelin and PT Satria Cemerlang officially invest as RLU shareholders. 18 May: Michelin publicly announces the RLU joint venture, promoting it as a reforestation project in areas devastated by uncontrolled deforestation. 8 October: Indonesia’s Minister of Industry announces Michelin’s USD 500 million investment.
2016	October: BNP Paribas co-founds TLFF with UNEP.
2017	November: Michelin and Barito Pacific apply for TLFF funding for the RLU project. TLFF commissions Vigeo Eiris to assess the project.
2018	January: Vigeo Eiris approves the RLU project without considering greenhouse gas emissions from prior deforestation. 7 March: TLFF issues USD 95 million in ‘green’ bonds, marketed as supporting Indonesia’s climate change goals. December: BNP Paribas and UNEP launch the Sustainable Finance Facilities (SFF) programme, presenting TLFF as the pilot project.
2019	Mighty Earth begins investigating the RLU project; requests for access to key documents from Michelin and RLU receive no response.
2020	January: Mighty Earth publishes a report accusing RLU of industrial deforestation prior to the joint venture. Michelin states that the project began in 2015 and that earlier deforestation was caused by other actors.
2023	12 September: Voxeurop publishes an investigation confirming that the ‘green’ bonds were used to fund rubber tree plantations on land deforested by RLU before Michelin’s formal involvement.

Source: Compiled by the author based on Mighty Earth (2020); Valentino et al. (2022), Voxeurop; Michelin (2022); BNP Paribas (2017).

2.3 Michelin’s Financial Strategy

The TLFF I Sustainability Bond ‘Offering Circular’, arranged by BNP Paribas and facilitated by ADM Capital, raised USD 95 million in March 2018. The bond received a AAA rating – the highest possible – due to USAID guarantees and a Second Party Opinion (SPO) from Vigeo Eiris, released just weeks before issuance, certifying compliance with the ICMA’s Green Bond Principles.

Michelin opted for a green bond structure rather than a direct bank loan for three principal reasons: green bonds typically carry lower interest rates due to high demand from ESG-focused investors, reducing overall cost of capital; they enhance corporate reputation for sustainability and attract a broader, ESG-focused investor pool; and they provide long-term financing suited to large-scale plantation development. This financial logic illustrates the opera-

tion of the Expected Cost framework identified in Chapter 6 (see Chapter 6, §2.2): when reputational and regulatory enforcement risks are low or diffuse, and when the financial benefits of green certification are substantial, the rational corporate strategy is to pursue certification regardless of underlying environmental performance.

2.3.1 Early Repayment of the Bond

In February 2022, TLFF persuaded bondholders to accept Michelin's proposal for early repayment — more than a decade before the scheduled maturity in February 2033. Several factors likely influenced this decision:

- **Reputational risk:** Growing allegations of greenwashing and associated reputational damage prompted Michelin to distance itself from the green bond scheme.
- **Regulatory and market pressures:** Increased scrutiny from regulators, investors, and environmental groups created pressure to withdraw from commitments to transparency about the project's social and environmental performance.
- **Lower cost of capital:** Michelin may have found it more convenient to repay TLFF debt and refinance at lower rates in global capital markets, no longer constrained by the social and environmental reporting obligations attached to green bond financing.

The early repayment effectively silenced ongoing investor oversight — a dynamic that illustrates how the social licence to operate (see Chapter 3 for definition) can be instrumentalised and then discarded once reputational pressure exceeds the financial benefits of retention.

2.4 Broader Implications

The Michelin and BNP Paribas case raises several structural issues that extend well beyond this single project.

Transparency and accountability. The absence of mandatory field verification in the certification process, and the failure to disclose known pre-project deforestation, reflect structural deficits rather than individual bad faith. The human rights due diligence (HRDD) obligations established under the CS3D (see Chapter 4, §2) — which include the requirement to identify, prevent, and mitigate adverse human rights and environmental impacts across the value chain — were not yet legally operative at the time of the bond issuance. Their application to cases such as RLU would have required disclosure of the pre-existing deforestation and meaningful engagement with affected rights-holders prior to project approval.

Integrity of green bonds. This case illustrates that green bonds are not self-evidently instruments of environmental benefit. Their credibility depends entirely on the robustness of certification frameworks — and where those frameworks rely on issuer-provided documentation, lack mandatory independent field verification, and embed conflicts of interest in third-party rating structures, they can function as mechanisms of greenwashing rather than accountability (see Chapter 4, §3 for the broader greenwashing framework). The governance gap (see Chapter 3, §2) is not only a gap in state regulation: it is replicated within the institutional architecture of green finance itself.

Impact on investor confidence. Michelin's early repayment effectively removed the project from ongoing investor scrutiny. Investors in green bonds rely on accurate information and sustained accountability to verify that their capital is contributing to genuine environmental outcomes. Where early repayment mechanisms can be deployed to terminate reporting obligations, this accountability function is structurally undermined.

Role of independent advisors. The involvement of WWF, Vigeo Eiris, Earthworm Foundation, the IFC, and two specialist consultancies did not prevent the certification of a project associated with thousands of hectares of primary forest clearance, considerable CO₂ emissions, biodiversity loss, and community displacement. This raises fundamental questions about the adequacy of voluntary advisory structures — and about what “independent” means in practice when advisors are selected and remunerated by the issuer.

3. Concluding remarks

Deforestation is not an incidental consequence of economic development. It is a structural outcome of global demand for a small number of agricultural commodities, operating within incentive structures that make forest clearance the economically rational choice for producers in weakly regulated or weakly enforced legal environments. As the evidence presented in this chapter makes clear, beef, soy, palm oil, and paper collectively account for nearly three-quarters of tropical forest loss, concentrated overwhelmingly in Brazil and Indonesia (Pendrill et al., 2019a; 2019b; Global Forest Watch, 2023). This pattern is not an aberration: it is the predictable consequence of the extractivist logic identified in Chapter 2 (see Chapter 2, §3) operating within the governance gap documented in Chapter 3 (see Chapter 3, §2), in a sector where voluntary instruments have demonstrably and repeatedly failed to close it.

The land system change boundary — one of the seven Planetary Boundaries already transgressed (see Chapter 2, §2) — is not a distant warning. It is being actively violated by the commodity systems this chapter examines. The biosphere integrity boundary is similarly implicated: the extinction risks for Sumatran elephants, tigers, and orangutans documented in the RLU case are not isolated losses but manifestations of the systemic biodiversity collapse charted in Chapter 2. The cost of this inaction is not abstract. As established in Chapter 4 (see Chapter 4, §1), the European Environmental Bureau estimates that the cost of failing to implement environmental norms runs to hundreds of billions of euros annually — a figure that does not capture the full ecological and human cost of the irreversible losses documented here.

The Michelin and BNP Paribas case illustrates how these systemic pressures interact with financial instruments designed, at least in principle, to counteract them. The Royal Lestari Utama project was not presented as indifferent to environmental concerns — it was explicitly framed as a solution to them, certified by multiple independent advisors, backed by UNEP, and rated AAA by mainstream credit agencies. That a project with this level of institutional endorsement could be associated with thousands of hectares of primary forest clearance, substantial CO₂ emissions, biodiversity loss, and community displacement speaks less to individual bad faith than to the structural weaknesses of voluntary green bond certification frameworks: their reliance on issuer-provided documentation, the absence of mandatory field verification, and the conflicts of interest embedded in third-party rating structures.

The “corporations knew, or had reasonable means to know” principle — established in Chapter 1 (see Chapter 1, §5) and confirmed in the DuPont case in Chapter 6 — applies here with particular clarity. Michelin conducted multiple economic, agricultural, social, and environmental assessments in Jambi between February and October 2014 (see timeline, §2). Reports from KKI Warsi, FZS, Eyes on the Forest, and WWF-Indonesia alerting to ongoing deforestation in the LAJ concessions had been publicly available since 2010. The pre-project deforestation was not unknowable: it was undisclosed.

Biofuel policy sits at the intersection of both narratives. Palm oil’s expansion into bioenergy — specifically within the European Union, where two-thirds of imported palm oil is burned as fuel (Transport & Environment, 2019) — demonstrates how policy instruments intended to accelerate the green transition can inadvertently intensify the very harms they seek to relieve. When lifecycle emissions from land-use change are accounted for, palm-derived biofuel generates higher greenhouse gas emissions than conventional fossil fuels (Royal Academy of Engineering, 2017; Zah et al., 2007 [In German]), while

simultaneously driving deforestation in the tropics. The EU Deforestation Regulation (EUDR), examined in Chapter 4, represents a crucial step towards binding supply-side accountability — but its effectiveness remains contingent on enforcement quality, benchmarking rigour, and the political will to apply it consistently. The Omnibus I weakening of the CS3D framework (see Chapter 4, §3) is a cautionary reminder that binding instruments can be diluted before they are fully operative.

The RLU case adds a further, more fundamental dimension to this assessment. As Chapter 4 documents (see Chapter 4, §3.2), the EUDR's cut-off date of 31 December 2020 was not the product of scientific or ecological reasoning but of a negotiated compromise shaped in part by industry lobbying — the European Parliament had proposed 2015, whilst industry associations advocated for dates as late as 2018–2020. The consequence is structural: deforestation occurring before 31 December 2020 falls entirely outside the regulation's scope, regardless of its scale, its ecological impact, or the degree to which it was known to the corporate actors involved.

In the RLU case, the deforestation that most directly implicates corporate accountability occurred between 2008 and 2019 — entirely before the cut-off date. The approximately 8,468 hectares cleared in the LAJ and WMW concessions before the Michelin joint venture was formalised, and the further 13,000 hectares cleared between 2014 and 2019, would not trigger EUDR due diligence obligations even if the regulation were fully operative today. A product derived from rubber grown on those concessions and placed on the EU market after 30 December 2026 would, under the current regulatory text, be formally compliant — deforestation-free in the legal sense, despite the forest having been cleared to make way for it.

This is not a marginal case. It illustrates a systematic gap in the EUDR's architecture: the regulation governs the present and future of supply chains whose most damaging transformations have already occurred. As Chapter 4 argues, if monitoring data following implementation reveals considerable deforestation occurring between 2015 and 2020 in EU-linked commodity supply chains, a revision of the cut-off date will be both analytically warranted and politically necessary. The RLU case suggests that this revision is already warranted — and that the argument for it is not merely technical but concerns the basic coherence of a regulatory framework that claims to hold corporations accountable for the environmental consequences of their sourcing decisions.

The broader question that this chapter leaves open — and that Chapter 8 will examine in a different sectoral context — is whether demand-side financial mechanisms, including green bonds and renewable energy mandates, can

be effective without corresponding supply-side regulation of the agricultural and land-use systems that underpin them. The Indian tea industry, examined in the following chapter, offers another lens through which to examine how supply chain opacity, labour rights violations, and weak enforcement intersect in global commodity systems — this time with gender and labour rights, rather than environmental destruction, at the centre of the analysis.

Box 1 - Guiding Questions

1. To what extent does the structural logic of extractivism — as defined in Chapter 2 — explain the persistence of deforestation despite decades of voluntary certification schemes and zero-deforestation commitments?
2. How do renewable energy mandates interact with agricultural expansion and land-use change, and under what conditions can demand-side climate instruments intensify the environmental harms they are designed to reduce?
3. Where is the line between independent certification and conflict of interest — and who should draw it?
4. Under what conditions could green bonds become a genuinely effective instrument for environmental protection rather than a mechanism of reputational management?
5. What does the RLU case reveal about the relationship between corporate knowledge, disclosure obligations, and the rights of indigenous communities as rights-holders under the UNGPs framework?

Box 2 - Key facts

- Between 2005 and 2013, the tropics lost an average of 5.5 million hectares of forest per year to agricultural land; Brazil and Indonesia account for nearly half of all tropical deforestation (Pendrill et al., 2019a; Global Forest Watch, 2023).
- Beef, soy, palm oil, and paper collectively drive nearly three-quarters of tropical deforestation; cattle ranching alone is responsible for 41% of forest loss (Pendrill et al., 2019a).
- The TLFF I green bond raised USD 95 million in March 2018, certified AAA, despite approximately 13,000 hectares of forest having been cleared within RLU concessions and public reports of deforestation available since 2010 (Mighty Earth, 2020; Valentino et al., 2022).
- Two-thirds of the EU's imported palm oil is consumed as biofuel — a use that, when land-use change emissions are factored in, generates higher greenhouse gas emissions than conventional fossil fuels (Transport & Environment, 2019; Royal Academy of Engineering, 2017).
- Around one-fifth of global palm oil production is covered by the RSPO certification scheme (RSPO, 2023) — leaving four-fifths outside voluntary sustainability standards.
- The EU Deforestation Regulation (EUDR, Regulation 2023/1115) requires that palm oil, soy, beef, timber, cocoa, coffee, and rubber placed on the EU market are deforestation-free after 31 December 2020, backed by mandatory due diligence statements (see Chapter 4, §4).
- In Indonesia, 54% of oil palm plantations are estimated to have come from areas that were forests in 1989 (Vijay et al., 2016).

Box 3 - Key Concepts: A Working Glossary

Term	Definition
Green bond	A fixed-income financial instrument issued to raise capital specifically for projects with positive environmental or climate benefits; subject to voluntary principles (ICMA Green Bond Principles) or, in the EU, to the EU Green Bond Standard
Green finance	Financial investments, instruments, and frameworks directed towards environmentally sustainable activities, including green bonds, green loans, and ESG-oriented investment funds
RSPO (Roundtable on Sustainable Palm Oil)	A voluntary multi-stakeholder certification scheme launched in 2004 that sets standards for sustainable palm oil production, including biodiversity management, prohibition on primary forest clearance, and community consultation requirements.
Soy Moratorium	A voluntary zero-deforestation agreement signed in 2006 by major soybean traders, committing them not to purchase soy grown on lands deforested in the Brazilian Amazon after July 2006; considered substantially effective but geographically limited.
EUDR (EU Deforestation Regulation)	Regulation (EU) 2023/1115 requiring that seven specified commodities and derived products placed on the EU market are deforestation-free after 31 December 2020, backed by mandatory due diligence statements and country benchmarking; examined in depth in Chapter 4.
Second Party Opinion (SPO)	An assessment provided by an external reviewer – typically an ESG rating agency – certifying that a green bond aligns with recognised sustainability principles; not equivalent to independent field verification.
ILUC (Indirect Land-Use Change)	Greenhouse gas emissions arising when biofuel production displaces existing agricultural activity onto previously forested or carbon-rich land; the mechanism by which palm oil biofuels generate emissions higher than those of conventional fossil fuels when lifecycle accounting is applied.
Deforestation leakage	The displacement of deforestation from areas subject to regulatory or market pressure to less-regulated or unmonitored areas, such that aggregate forest loss is not reduced but merely relocated.

Chapter 8

Gender and Human Rights

Case Study: Women's Rights Violations in the Indian Tea Industry

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Women constitute a disproportionate share of the victims of business-related human rights violations. This chapter argues that this disproportion is not incidental but structural: it reflects the active exploitation of gender inequality as a source of competitive advantage within global value chains. Section 1 develops this argument through three analytical lenses — labour and employment, land and natural resources, and access to remedy — drawing on international human rights instruments, empirical data, and the framework of the UN Guiding Principles on Business and Human Rights. It shows that the gendered harm inflicted by corporate conduct is compounded by intersecting vulnerabilities of class, ethnicity, and geography, and that existing legal and voluntary mechanisms remain inadequate to address it. Section 2 illustrates these dynamics through the Indian tea industry, where women workers — predominantly Adivasi and tribal — are subjected to economic exploitation, gender-based violence, reproductive health failures, and intergenerational deprivation, while multinational buying companies profit from their invisible labour. Together, the two sections demonstrate that gender analysis is not a supplementary concern in business and human rights but a structural necessity: any framework for corporate accountability that does not place gender at its centre is, at best, incomplete, and at worst, complicit in the invisibility it fails to challenge.

Keywords: gender and human rights; women workers; global value chains; intersectionality; Indian tea industry; Gender-Based Violence; Adivasi.

Learning Objectives

After reading this chapter, you should be able to:
Explain the structural mechanisms through which gender inequality is reproduced and deepened by corporate conduct across sectors and geographies, with reference to the three analytical lenses of labour, land, and access to remedy.
Apply the concept of intersectionality to identify the specific compounded vulnerabilities facing women workers at the intersection of gender, ethnicity, class, and migration status in global value chains.
Analyse the Indian tea industry as a case study in the structural exploitation of women's labour, connecting its historical colonial foundations to contemporary purchasing practices and value chain architecture.
Evaluate the adequacy of existing international human rights instruments, national legislation, and voluntary certification schemes in addressing the systemic rights violations documented in the chapter.
Critically assess what a genuinely gender-sensitive approach to human rights due diligence would require in practice, and what structural – rather than merely remedial – changes in value chain architecture and corporate purchasing behaviour are necessary to address the root causes of gendered harm.

1. Gender, Business, and the Structural Production of Harm

1.1 Introduction: Why Gender Matters in Business and Human Rights

The relationship between business conduct and human rights is never gender-neutral. When corporations make decisions about where to source, whom to employ, what wages to pay, which communities to consult, and how to respond to grievance, those decisions land differently on women than on men. They land differently not because of any natural or biological distinction, but because the societies in which businesses operate are structured by profound gender inequalities – inequalities that corporations can either challenge or exploit, and that they overwhelmingly exploit.

This chapter examines one of the most structurally entrenched yet persistently under-addressed dimensions of business and human rights: the gendered nature of corporate harm. It proceeds in two parts. Section 1 develops a theoretical and empirical framework on the structural and gendered

dimensions of business-related human rights violations, drawing on international human rights law, feminist political economy, and the analytical tools developed in earlier chapters of this volume — in particular the extractivist logic identified in Chapter 2 (§3), the governance architecture established in Chapter 3, the due diligence framework analysed in Chapter 4, and the supply chain dynamics examined in Chapter 5. Section 2 applies this framework through a focused case study of the Indian tea industry, a sector in which the gendered dimensions of corporate harm are documented with unusual empirical precision. The analysis developed here connects forward to Chapter 10, which addresses the particular vulnerabilities of human rights defenders — including women who resist corporate power — and the structural conditions that make such resistance, in a growing number of contexts, a life-threatening act.

This chapter builds directly on the analytical framework developed in Chapter 7, which demonstrated how the pattern of deliberate concealment — not ignorance — characterises corporate responses to internally known harm across sectors (see Chapter 7, §2.2–§2.3). In the Indian tea industry, as Section 2 will demonstrate, that pattern takes a specifically gendered form: the harms inflicted on women workers are not unknown to the corporations that profit from their labour, but they are systematically rendered invisible through supply chain opacity, the outsourcing of welfare obligations to the state, and the use of certification schemes that address symptoms without challenging causes. This chapter also connects to the broader structural argument running through this volume: that the extractivist logic identified in Chapter 2 (§3) does not merely deplete natural resources but actively exploits social vulnerabilities — and that gender inequality is among the most systematically exploited of those vulnerabilities.

Chapter 2 of this volume introduces Raworth's Doughnut model of sustainable business (§2), in which respect for human dignity and fundamental rights forms the non-negotiable inner boundary of any legitimate commercial enterprise. This chapter applies that foundational principle to a specific and historically neglected dimension of business conduct: its gendered dimension. It asks not only whether corporations violate human rights — a question addressed throughout this volume — but whose rights are violated, how, and why, when gender is placed at the centre of the analysis.

The answer that emerges from the evidence is disquieting. Women are not merely among those harmed by corporate misconduct; they are, in many sectors and contexts, the primary targets of a structural logic that treats their labour, their bodies, their land rights, and their access to justice as

instruments of profit. This logic is not the product of individual bad actors. It is embedded in the architecture of global value chains, in the purchasing practices of multinational corporations, in the governance failures of states, and in the patriarchal norms that pervade both market institutions and the households in which women live and work.

Understanding this logic — and the international human rights framework that exists, however imperfectly, to challenge it — is not a peripheral concern for students of business and human rights. It is central to the field. As the UN Working Group on Business and Human Rights has observed, the gendered harm resulting from transnational business conduct has for too long been “largely invisible” in both scholarly and policy debates (as cited in Götzmann et al., 2018, p. 63). This chapter is an attempt to make it visible.

1.2 The International Human Rights Framework: Gender Equality as a Legal Obligation

Before examining how business conduct generates gendered harm, it is necessary to establish the normative baseline against which that conduct must be assessed. The international human rights framework provides extensive, though imperfectly implemented, protections for women’s rights.

The foundational instrument is the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW, 1979), often described as the “international bill of women’s human rights.” Article 1 of CEDAW defines discrimination against women broadly, encompassing “any distinction, exclusion or restriction made on the basis of sex” that has the effect or purpose of impairing women’s enjoyment of human rights and fundamental freedoms on a basis of equality with men. Critically, Article 2(e) requires states not only to address discriminatory laws but to take measures to eliminate discrimination “by any person, organisation or enterprise” — a provision that explicitly extends to business conduct (CEDAW, 1979). The CEDAW Committee has further clarified, in its General Recommendation No. 28, that states must engage the private sector and require it to adopt measures consistent with the Convention’s goals (CEDAW Committee, 2010).

Beyond CEDAW, the International Covenant on Economic, Social and Cultural Rights (ICESCR, 1966) protects the right to fair and equal remuneration (Article 7), the right to safe and healthy working conditions (Article 7), the right to health (Article 12), and the right to education (Article 13) — all rights systematically denied to women in the contexts examined in this chapter. The ILO core conventions on equal remuneration (No. 100) and non-discrimination in employment (No. 111) add binding labour law dimen-

sions to these obligations. The Beijing Declaration and Platform for Action (1995) and SDG Goal 5 provide further normative anchors.

These instruments constitute, in the terminology established in Chapter 3, a body of soft and hard law whose implementation depends critically on the willingness of states to act against corporate interests – a willingness that the governance gap (see Chapter 3, §2) structurally undermines (Ruggie, 2008). The UNGPs, analysed in detail in Chapter 3, establish that corporations have a responsibility to respect human rights across their operations and supply chains, independent of whether states are fulfilling their own obligations. This responsibility encompasses a duty to conduct human rights due diligence that is gender-sensitive – identifying, preventing, and addressing the specific ways in which corporate conduct may affect women differently from men. As the UN Working Group on Business and Human Rights has emphasised, a gender-neutral approach to due diligence is not merely incomplete; it is systematically biased, because it renders invisible harms that fall disproportionately on women (Götzmann et al., 2018). The rights-holders most affected by these harms – in the language of the UNGPs framework (see Chapter 3, §3) – are the women workers whose experiences this chapter documents.

The CS3D, examined in Chapter 4, translates aspects of this responsibility into binding legal obligations for large companies operating in or sourcing from the European Union's market. Its gender implications are significant: companies subject to the Directive must assess adverse human rights impacts along their entire value chains, and the gendered dimensions of those impacts – including discrimination, harassment, unequal pay, and reproductive health failures – fall squarely within its scope (see Chapter 4, §2).

1.3 Gender as a Structural Dimension of Corporate Harm: Three Analytical Lenses

The relationship between business conduct and women's rights can be examined through multiple analytical lenses. This section focuses on three that are most salient across sectors and geographies: labour and employment; land and natural resources; and access to effective remedy.

1.3.1 Labour, Employment, and the Exploitation of Women's Work

Globally, women's participation in the formal workforce remains substantially lower than men's: in 2017, the International Labour Organization reported a gender gap in labour force participation of 26.7 percentage points (ILO, 2017, as cited in Götzmann et al., 2018). This gap is widest in Southern

Asia, the Arab States, and Northern Africa, where it exceeds 50 percentage points. Yet the lower rate of formal participation obscures a deeper reality: women carry out at least two and a half times more unpaid household and care work than men, and this unpaid labour systematically constrains their capacity to participate in paid, formal employment (ILO, 2016, as cited in Götzmann et al., 2018).

Where women do participate in the formal economy, they are disproportionately concentrated in a narrow range of sectors: agriculture, garment and textile production, domestic work, and services. These are precisely the sectors characterised by low wages, precarious contracts, poor working conditions, and limited access to social protection. An ILO analysis of 142 countries found that women remain over-represented in “elementary occupations” — those consisting of simple and routine tasks — and that these occupations are systematically associated with part-time employment and low pay (ILO, 2016, as cited in Götzmann et al., 2018). Women also make up between 70 and 90 per cent of the workforce in Export Processing Zones (EPZs), which the ILO reports continue to be “hampered by a reputation of low wages, poor working conditions and under-developed labour-relations systems” (ILO, 1998, as cited in Götzmann et al., 2018, p. 14).

This pattern of occupational segregation is not a passive reflection of social norms; it is actively reproduced by corporate decisions. Corporations operating in labour-intensive global value chains deliberately recruit women in preference to men — not because of any genuine commitment to gender equality, but because women’s marginal social and economic power makes them “an easier source of exploitable, low-cost labour” (Gender and Trade Coalition, n.d., p. 1). As the Gender and Trade Coalition has documented, the exploitation of women’s labour is, within the current architecture of global value chains, a source of competitive advantage — a deliberate strategy of cost minimisation that depends on the continuation of patriarchal structures. This is not, in the terms established in Chapter 1, the product of ignorance: it is a knowable, and in most cases known, consequence of sourcing decisions (see Chapter 1, §5).

The gender pay gap compounds this exploitation. Globally, women earn approximately 77 per cent of what men earn — a gap of 23 per cent — and although this gap has narrowed in many countries, it remains a persistent feature of virtually every nation’s labour market as of 2016 (ILO, 2016, as cited in Götzmann et al., 2018, p. 16). More recent research details that women globally make 77.4 cents for every dollar earned by men as of 2024, and that the gap is substantially higher in most developing countries (ILO, 2025). The

gap cannot be explained by differences in education or age alone; it reflects the systematic undervaluation of the work that women perform, and the direct discrimination they face in employment. In sectors like agriculture and tea production – analysed in Section 2 – the gender pay gap takes particularly stark forms, with women assigned to lower-paid task categories on the basis of stereotyped assumptions about their skills and physical capacity.

Sexual harassment and gender-based violence in the workplace represent a further dimension of the corporate harm inflicted on women workers. The World Bank has estimated that between 40 and 50 per cent of women in EU economies have experienced sexual harassment at work (World Bank, 2016, as cited in Götzmann et al., 2018). In global supply chains, where women workers are often employed in male-supervised, isolated, or informal settings, these rates are likely to be substantially higher. The 2013 Sexual Harassment of Women at Workplace Act in India – discussed further in Section 2 – and Kenya’s Sexual Offences Act are legislative responses to a phenomenon that research consistently describes as systemic rather than exceptional (Götzmann et al., 2018).

The situation of women migrant workers and domestic workers warrants particular attention. Approximately half of the world’s 164 million migrant workers are women, and the majority are concentrated in domestic work, garment manufacturing, and service sectors where labour protections are weakest (ILO, 2018, as cited in Götzmann et al., 2018). Domestic workers – more than 80 per cent of whom are women – typically work for private households behind closed doors, excluded from labour law protection and vulnerable to violence, forced labour, and document confiscation by employers (ILO, 2018, as cited in Götzmann et al., 2018). The abusive kafala visa sponsorship system in the Gulf region, which prevents migrant workers from leaving or changing employers without their sponsor’s consent, illustrates how legal structures designed to regulate labour migration can become instruments of corporate control and exploitation.

1.3.2 Land, Natural Resources, and the Invisibility of Women’s Rights

The relationship between business conduct and land rights has a profoundly gendered dimension that is systematically overlooked in standard due diligence frameworks. Globally, women own less than 20 per cent of agricultural land holdings, despite constituting approximately 43 per cent of the agricultural workforce (FAO, 2017, as cited in Götzmann et al., 2018). In many country contexts, women are restricted to secondary land rights – held through a male family member – and are excluded from inheritance

under customary law. Where women do have access to land, their parcels are typically smaller and of lower quality than those held by men.

When businesses acquire, lease, or use land — whether for mining, agriculture, infrastructure, or other commercial purposes — these pre-existing gender inequalities are amplified. Research by the World Resources Institute has found that standard compensation and resettlement procedures are systematically gender-blind: negotiations are conducted predominantly with male community leaders, agreements are based on formal land ownership records that under-represent women, and compensation payments are made to male household heads rather than to the women who have actually worked the land (World Resources Institute, 2017, as cited in Götzmann et al., 2018). The result is that women lose access to the land on which their livelihoods depend, without receiving compensation — and without the proceeds of their dispossession.

The UN Guiding Principles' requirement that businesses conduct meaningful stakeholder consultation — discussed in Chapter 3 — has a specific gender dimension that is rarely honoured in practice. Research by the Centre for Social Responsibility in Mining has found that “gender equity as a specific requirement for land use agreements in mining is absent in most jurisdictions,” and that associated agreement procedures are “generally gender-blind” (as cited in Götzmann et al., 2018, p. 28). Women are excluded from Free, Prior and Informed Consent (FPIC) processes — a foundational principle examined in Chapter 3, §3 — reflecting a failure to address women's tenure rights, lack of gendered division of labour analysis, and the systematic exclusion of women from community consultation and decision-making forums.

For indigenous women, these dynamics are further compounded. Indigenous communities frequently hold land rights that are collective and governed by customary law rather than formally registered — making them invisible to standard due diligence frameworks — and indigenous women face a “triple discrimination” as women, as members of ethnic minorities, and as holders of rights that formal legal systems do not recognise (Götzmann et al., 2018, p. 24). The transgression of the land system change and biosphere integrity boundaries documented in Chapter 2 (see Chapter 2, §2) falls disproportionately on indigenous communities — and within those communities, on women. The extraction of minerals and biomass required for decarbonisation, examined in Chapter 9, makes this triple discrimination increasingly urgent: it is women who bear the greatest burden of land dispossession, wa-

ter contamination, and livelihood destruction when extractivist logic enters new supply chains (see Chapter 2, §3).

1.3.3 Access to Remedy: Structural Barriers Faced by Women

The third pillar of the UNGPs — access to effective remedy — has a gender dimension that is systematically underdeveloped in both policy and practice. The right to remedy is, as Chapter 3 notes, not merely one right among others; it is the institutional guarantee of all other rights. When women cannot access remedy for corporate harm, their vulnerability to that harm is compounded: the absence of accountability removes the incentive for corporations to change their conduct — a dynamic that the governance gap analysis in Chapter 3 identifies as structurally determining (see Chapter 3, §2).

Women face multiple, intersecting barriers to accessing both judicial and non-judicial remedies for business-related human rights violations. Financial barriers are primary: legal fees are prohibitive for women who work in informal or low-wage employment, lack independent assets, and cannot risk the loss of employment that pursuing a grievance may entail. Physical and linguistic barriers are significant for rural women and women migrant workers who lack mobility, legal status, or command of the language of the legal system. Structural discrimination within judicial institutions — where women account for only 27 per cent of judges globally (as cited in Götzmann et al., 2018) — means that even where women do access courts, the institutions deciding their cases are dominated by men who may lack the gender literacy to assess their claims appropriately.

Non-judicial grievance mechanisms, including the operational-level mechanisms that corporations are encouraged to establish under the UNGPs, present their own gendered failures. Research has consistently found that these mechanisms are inadequate for addressing sexual and gender-based violence: they lack confidentiality protections, they are typically overseen by the very management structures that may be implicated in the harm, and they create conditions in which women who come forward risk retaliation, including dismissal and eviction from company-provided housing (Götzmann et al., 2018). The UN Working Group on Business and Human Rights has explicitly stated that violence against women should not be addressed by operational-level grievance mechanisms alone, but should be sanctioned under criminal law (as cited in Götzmann et al., 2018, p. 56).

Patriarchal social structures compound these institutional barriers. Gender norms that restrict women's freedom of movement, assign them disproportionate unpaid care responsibilities, and stigmatise women who speak publicly about violence or exploitation function as powerful deterrents to

seeking remedy. Women working under tied housing arrangements — where accommodation is contingent on continued employment — face the additional coercive dimension that making a complaint may mean losing not only their job but their home. This dynamic is analysed in concrete detail in the Indian tea industry context in Section 2.

Even where compensation is awarded, the gender dimensions of how it is distributed within households mean that women may not benefit. Research has found that compensation paid to male household heads is frequently spent on consumption priorities determined by men, rather than on the productive assets, food security, or children's education that women workers identify as their priorities (Götzmann et al., 2018). Remedy that does not reach the women most harmed is not effective remedy within the meaning of the UNGPs.

1.4 Intersectionality: Compounded Vulnerabilities

The analytical framework developed in the preceding sections must be refined by the concept of intersectionality — the recognition that women are not a homogeneous group, and that gender-based discrimination does not operate in isolation from other axes of marginalisation. As the CEDAW Committee has observed, women who are subject to discrimination on more than one ground do not simply experience “double discrimination”: they experience discrimination from a particular and unique position shaped by the interaction of multiple factors, producing harms that cannot be reduced to the sum of their parts (CEDAW Committee, 2004, as cited in Götzmann et al., 2018).

In the contexts most relevant to business and human rights, the intersecting axes of vulnerability most frequently include ethnicity and race, caste, class, migration status, and geography. Women of colour, indigenous women, women from lower castes, women migrant workers, and women in rural or remote areas face compounded forms of exploitation that standard human rights frameworks, designed around a universal but implicitly male subject, fail to capture. In the African cocoa and coffee sectors, for instance, women constitute over 60 per cent of the labour force but earn only a third of the income — a disparity that reflects not only gender discrimination but the interaction of gender with land tenure inequalities, exclusion from cooperative membership, and the structural disadvantages of smallholder farming in liberalised commodity markets (Gender and Trade Coalition, n.d.).

In the Indian tea industry, as Section 2 will demonstrate in detail, the intersection of gender with ethnicity — specifically the Adivasi and tribal iden-

tity of plantation workers — and with class and colonial history produces a form of compounded marginalisation that is simultaneously gendered, racialised, and economically determined. The women working as tea pluckers in Assam are not simply workers who happen to be women; they are women whose vulnerability is constituted by the intersection of their gender, their ethnic identity, their status as descendants of colonial-era migrant labourers denied constitutional recognition, and their position at the very bottom of a global value chain that captures the vast majority of the value their labour produces.

1.5 Trade Liberalisation, Global Value Chains, and the Gendered Architecture of Exploitation

The structural exploitation of women's labour in global value chains cannot be understood without reference to the broader political economy within which those chains operate. Trade liberalisation — the reduction of tariffs, the removal of regulatory barriers, and the progressive integration of previously isolated labour markets into global commodity markets — has brought millions of women into paid employment. This is sometimes presented as a story of empowerment. The evidence suggests a more ambivalent reality.

As the Gender and Trade Coalition (n.d.) has documented, the current architecture of global value chains relies on the devaluation of women's labour as a source of comparative advantage. Corporations operating in buyer-driven commodity chains — including tea, coffee, cocoa, garments, and electronics — systematically compress production costs by keeping wages low, contracts precarious, and welfare provisions minimal. Women workers are the primary victims of this compression, not because of any market logic that is gender-neutral in its effects, but because patriarchal structures have positioned women as the least able to resist exploitation. The threat of dismissal is more coercive for a woman who will lose her housing along with her income. The refusal to pay overtime is more damaging for a woman who also bears the full burden of unpaid domestic labour. The absence of maternity leave is more consequential for a woman who has no alternative source of income.

This dynamic is structurally continuous with the extractivist logic identified in Chapter 2 (see Chapter 2, §3): just as extractivism treats natural resources as inputs to be consumed without accounting for their regeneration cost, the gendered architecture of global value chains treats women's labour — and the social reproduction work that sustains it — as a cost-free input to production. The Expected Cost framework introduced in Chapter 6

(see Chapter 6, §2.2) applies here with particular force: the rational corporate calculus keeps wages and welfare at their minimum when the probability of enforcement is low, the damage is diffuse and delayed, and the women affected have no effective exit options.

Trade and investment agreements have, in many cases, deepened these dynamics. The Agreement on Agriculture has displaced smallholder farmers — disproportionately women — through the flooding of domestic markets with subsidised imports from wealthier countries (Gender and Trade Coalition, n.d.). Investor-State Dispute Settlement (ISDS) mechanisms have been used by corporations to challenge labour and environmental regulations that would disproportionately benefit women workers. The revenue losses associated with trade liberalisation in low-income countries have forced governments to cut public expenditure on precisely the services — healthcare, childcare, education, water and sanitation — that reduce women's unpaid care burdens and enable their participation in paid work.

The CS3D, analysed in Chapter 4, represents a partial regulatory response to these dynamics. By requiring large companies to conduct human rights due diligence across their supply chains, it creates — at least in principle — an obligation to identify and address the gendered harms that their purchasing practices produce (see Chapter 4, §2). Whether this regulatory promise will be realised in practice depends on the quality and rigour of gender-sensitive implementation, and on the political will of the European Union and its member states to enforce the Directive against the resistance of powerful commercial interests. The Omnibus I weakening of the CS3D's scope (see Chapter 4, §3) is a cautionary signal.

1.6 Towards a Gender-Sensitive Business and Human Rights Framework

The analysis developed in the preceding sections points towards a set of principles for a gender-sensitive approach to business and human rights — one that goes beyond the formal acknowledgement of women's rights and engages with the structural mechanisms through which those rights are violated.

First, gender analysis must be integrated into human rights due diligence from the outset, not added as a supplementary concern. This means conducting gender impact assessments as a standard component of supply chain due diligence; disaggregating data by sex in all monitoring and reporting frameworks; and ensuring that the women most affected by corporate conduct are meaningfully consulted in the design and evaluation of due diligence processes (Götzmann et al., 2018).

Second, the concept of intersectionality must inform the identification of those at greatest risk. Women workers in global value chains are not a homogeneous population: the most vulnerable are those whose gender vulnerability is compounded by ethnic marginalisation, caste discrimination, migration status, or geographic isolation. Due diligence frameworks that treat “women” as a single risk category will systematically underestimate the severity and specificity of the harms faced by those at the intersection of multiple vulnerabilities.

Third, access to remedy must be redesigned with the specific barriers faced by women in mind. This includes legal aid, childcare support during legal proceedings, protection from retaliation including eviction, confidential reporting mechanisms, and — consistent with the UN Working Group’s recommendation — the criminalisation of gender-based violence rather than its treatment as a matter for internal corporate grievance processes.

Fourth, and most fundamentally, the purchasing practices of multinational corporations must be recognised as a cause — not merely a context — of gendered harm. As Chapter 2’s Doughnut model implies, a business that treats the systematic exploitation of women’s labour as a competitive advantage has placed itself outside the inner boundary of legitimate commercial conduct. Addressing this requires not only due diligence but a structural shift in how value is distributed along global supply chains — a shift that regulatory instruments alone cannot produce, but which they can, if rigorously designed and enforced, significantly incentivise.

2. *Harvesting Inequality — Women’s Rights Violations in the Indian Tea Industry*¹

2.1 *Introduction: Tea, Labour, and the Hidden Cost of a Global Commodity*

Tea is the second most consumed beverage in the world after water, employing almost 13 million people globally (FAO, 2022). The global tea market was valued at approximately \$122.2 billion in 2022 and is projected to reach \$160 billion by 2028 (Statista, 2022). Behind these figures lies a human reality

¹ Section 2 of this chapter — *Harvesting Inequality: Women’s Rights Violations in the Indian Tea Industry* — is based on the master’s thesis of Eleonora Toracca (University of Padova, 2024), prepared within the Master’s Programme in Human Rights and Multi-level Governance. The thesis was supervised by the author of this chapter. The author gratefully acknowledges her contribution in unveiling this issue. The analytical framing, integration with Section 1, and editorial adaptation are the responsibility of the chapter author.

that the industry's imagery of pastoral landscapes and artisanal craft systematically obscures: the majority of the workers who produce the world's tea are women, and the majority of those women live and work in conditions that violate their most fundamental rights.

This section examines the Indian tea industry as a case study in the structural mechanisms analysed in Section 1. India is the world's second-largest producer and exporter of tea after China, contributing over 20 per cent of global production and earning approximately \$793 million in export revenues in 2022–23 (Tea Board India, 2023). The industry provides direct employment to over 1.25 million families and indirect employment to a further two million. Women constitute 58 per cent of the plantation workforce, primarily employed as tea pluckers — the most labour-intensive and physically demanding task in the production chain (THIRST, 2022). Their condition is the product of a mutually reinforcing set of factors: colonial institutional inheritance, patriarchal social norms, ethnic and class marginalisation, concentrated corporate power, and the systematic failure of legal enforcement. Together, these factors produce what this section argues is not a regional aberration but a paradigmatic example of the structural exploitation of women's labour in global value chains — one that illustrates, in the language of Chapter 5, the supply chain opacity that enables multinational buying companies to maintain plausible deniability about conditions they have reasonable means to know (see Chapter 5, §2.2; Chapter 1, §5).

2.2 Historical and Structural Foundations

The Indian tea industry is approximately 180 years old, rooted in British colonial expansion. The first Assam tea was shipped to London in 1838 (Barua, 1989). From the outset, the industry was built on coerced labour: colonial planters recruited entire families from impoverished Adivasi and tribal communities in eastern and southern India — luring them with false promises of good wages and land, then trapping them in conditions resembling bonded labour (GNRTFN, 2016). The *kangany* and *maistry* recruitment systems, the Inland Emigration Act of 1863, and the penal provisions of successive Workmen's Breach of Contract Acts gave estate owners near-absolute coercive authority over their workers, creating a captive, immobile workforce that could be punished for attempting to leave (GNRTFN, 2016).

Women were brought to the plantations by their husbands and fathers, and quickly became indispensable to the colonial model — not only as cheap field workers but as reproductive labour, stabilising forces for male migrants, and, in the most brutal dimension of the colonial plantation system, as sex-

ual objects under the planters' control. Estate owners recognised that settling families would ensure a self-reproducing workforce for future generations, eliminating the costly need to recruit from outside. The stereotype that women are more patient, docile, delicate, and detail-oriented than men was mobilised to justify their exclusive assignment to tea plucking — a task simultaneously described as requiring feminine care and yet one of the most physically demanding in the entire production process (GNRTFN, 2016; Dutta, 2015, as cited in Toracca, 2024).

Today, tea plantation workers in Assam, West Bengal, and Darjeeling are predominantly descendants of these colonial-era migrants. They have little or no connection to their places of origin, and their social, economic, and legal status remains determined by their work on the estate. The colonial model was not dismantled at Indian independence; the state chose to continue operating tea estates in a largely similar manner, preserving cheap labour as a competitive advantage. Workers in Assam and West Bengal belong predominantly to Adivasi and tribal communities not formally recognised as Scheduled Tribes under the Indian Constitution, meaning they are denied the affirmative protections extended to other marginalised groups (GNRTFN, 2016; THIRST, 2022).

This historical and structural context is essential to understanding the violations documented in subsequent sections. The women working as tea pluckers in Assam in the twenty-first century are not simply workers in difficult conditions; they are the heirs of a system deliberately designed, and subsequently preserved, to extract maximum value from the labour of the most vulnerable. Their triple marginalisation — as women, as members of ethnic minorities denied constitutional recognition, and as workers at the bottom of a buyer-driven global value chain — corresponds precisely to the intersectional framework developed in Section 1 of this chapter. It also corresponds to what this volume identifies, from Chapter 1 onwards, as a structural pattern: the corporations that profit from this system knew, or had reasonable means to know, the conditions under which their tea is produced (see Chapter 1, §5).

2.3 The Tea Value Chain: Power, Price, and the Distribution of Value

The Indian tea industry is characterised by a buyer-driven commodity chain and a high degree of concentrated corporate control. Approximately 85 per cent of global tea production is sold by a small number of international companies (THIRST, 2022). The most profitable downstream phases — blending, packaging, and marketing — are carried out in buyer countries by

powerful corporations, while the upstream phases of growing and primary processing take place in India and other producing countries. Tea workers receive just one to two per cent of the retail price consumers pay; retailers retain between 41 and 59 per cent, while companies selling directly to consumers retain close to 90 per cent (BHRRC, 2021).

Five corporations currently dominate the global tea trade: Associated British Foods (Twinings), RC Bigelow, Apeejay Surrendra Group, Tata Consumer Products (Tata Tea, Tetley), and Ekaterra — formerly a subdivision of Unilever, now owned by CVC Capital Partners (Lipton, PG Tips, TAZO, Pukka Herbs) (BHRRC, 2021). This concentration of corporate power gives buying companies exceptional leverage over suppliers and workers alike, while creating structural incentives to keep production costs — and wages — as low as possible. Research by THIRST (2023) found that producers are rarely dropped for non-compliance with codes of conduct, while price disputes are the most common reason for contract termination — a signal that reveals corporate priorities with unmistakable clarity.

The supply chain opacity that characterises the tea industry — examined as a structural mechanism in Chapter 5 (see Chapter 5, §1) — enables the deniability that the industry's brand narratives depend upon. Major tea brands are known to source from Assam — a region extensively documented as the site of severe human rights violations — yet they rarely disclose which estates supply their tea or what conditions prevail there (Rao & Bernaz, 2020). The Business and Human Rights Resource Centre's Tea Transparency Tracker (2021) contacted 65 companies and found that 36 did not respond; of the 29 that did, only 17 published their supplier lists in full or in part. Out of 70 documented allegations linked to tea companies in 2022, at least 30 were from Indian estates, primarily in Assam and West Bengal (BHRRC, 2023). These figures represent, in the words of the BHRRC, the visible tip of a much larger iceberg — a formulation that applies equally to the Prada supply chain documented in Chapter 5 and to the Royal Lestari Utama project documented in Chapter 7: in each case, the opacity is not accidental but structural (see Chapter 5, §2.2; Chapter 7, §2.2).

This value chain architecture connects directly to the Expected Cost framework introduced in Chapter 6 (see Chapter 6, §2.2): the systematic compression of production costs by multinational buyers is the rational outcome of a calculus in which enforcement probability is low, damages are diffuse, and the women at the bottom of the supply chain have no effective recourse. It is not a market outcome that the industry cannot control; it is a deliberate strategic choice that transfers the burden of competitive pressure

downwards along the supply chain until it reaches the point of least resistance — the wages and welfare of women workers in Assamese tea gardens.

2.4 The Violations: Violence, Exploitation, and Reproductive Harm

2.4.1 Violence Against Women

Women working in Indian tea plantations are exposed to gender-based violence on a daily basis, in both the domestic and occupational spheres. The plantation structure — in which home and workplace are inseparable — blurs the boundary between domestic and occupational violence, compounding women's vulnerability in ways that no single legal framework is designed to address (Frankenthal & Dutta, 2021).

Research in Assam has found that 47 per cent of women surveyed had experienced physical, sexual, or psychological domestic abuse (Duara & Mallick, 2019, as cited in Toracca, 2024). In one study, 94 per cent of respondents who recognised being subjected to domestic violence reported verbal abuse as the most frequent form; and 60.7 per cent of respondents denied the existence of domestic violence in their own families, having internalised its occurrence as ordinary (Saikia, 2017, as cited in Toracca, 2024). The normalisation of violence — its absorption into the unremarkable texture of daily life — is one of the most disturbing findings in the research literature on tea plantation women.

Sexual harassment in the workplace — from verbal abuse and unwanted contact to quid-pro-quo demands for sexual favours linked to employment security and wage calculation — is described by researchers as systemic (BHRRC, 2021). Women are especially vulnerable because the plantation is simultaneously their workplace, their home, and their community: there is no separation between domestic and professional space. The isolated geography of estates, combined with all-male supervisory structures, a lack of functioning internal complaint committees, and the ever-present threat of eviction for those who speak out, creates conditions in which violence is simultaneously widespread and invisible.

The Indian government's 2020 reclassification of tea garden workers as "unskilled" workers removed them from the protection of the Sexual Harassment of Women at Workplace Act (2013) — a severe legislative setback that made an already inaccessible legal remedy even more remote (Frankenthal & Dutta, 2021, as cited in Toracca, 2024). This reclassification is not a bureaucratic detail: it is an act of state that stripped a predominantly female, predominantly Adivasi workforce of a legal protection that the formal

equality framework of international human rights law explicitly requires. It illustrates, with particular clarity, the gap between the normative aspirations of the international human rights framework and the lived reality of the rights-holders it purports to protect — a gap that Chapter 3's analysis of the UNGPs identifies as one of the central challenges of the business and human rights field (see Chapter 3, §2).

2.4.2 Economic Exploitation and Marginalisation

The economic conditions of women tea workers in Assam represent a textbook illustration of the gendered exploitation of labour described in Section 1. Indian tea workers earn on average Rs 1,220 per month — approximately \$14.50 — representing 35 per cent of a liveable income (ILO, 2020, as cited in Toracca, 2024). Despite the Equal Remuneration Act of 1975, a gender pay gap of 9.2 per cent persists on a monthly basis, rooted in the stereotypical assignment of women to lower-wage task categories (ILO, 2020). Women are placed on lower wage slabs than men, and in some estates — notably in Kerala — the incentive pay for additional leaves plucked by women is redistributed to male workers, constituting a direct and discriminatory appropriation of women's labour (Kubendran, 2020, as cited in Toracca, 2024).

Women are permanently excluded from career advancement. No woman in Indian tea estates occupies a position higher than the plucking supervisor level, and it is considered contrary to patriarchal plantation norms for women to manage male employees (Toracca, 2024). Trade unions — organisations that in principle exist to represent workers' collective interests — are male-dominated and prioritise political agendas over workers' welfare. Women attend meetings rarely and report having no real voice in collective bargaining processes, despite constituting more than half of union membership in many estates (THIRST, 2022).

The housing system constitutes perhaps the most structurally coercive dimension of women's economic marginalisation. Free accommodation is contingent on continued employment, meaning that women who quit, are dismissed, or attempt to organise collectively face the loss not only of their income but of their home. Without education, alternative employment, or independent land ownership, women workers are effectively captive — compelled to accept whatever wages and conditions management imposes. This dynamic corresponds precisely to what the international human rights framework identifies as a form of bonded labour: the use of non-wage dependency to prevent workers from exercising genuine exit options (GNRT-FN, 2016; THIRST, 2022). It is structurally analogous to the coercive mechanisms documented in the XUAR labour transfer programmes examined in

Chapter 5 (see Chapter 5, §2.2): in both cases, workers are bound to their employers through dependencies that render formal freedom of contract meaningless.

Wages are also below the national minimum standard. An ILO assessment found that 66 per cent of Indian tea workers earn less than the applicable minimum wage, which is itself set at Rs 300 per day for unskilled agricultural workers — a benchmark that many estate wage agreements fail to meet (BHRRC, 2021). The Plantation Labour Act of 1951 (PLA) requires that in-kind benefits — including housing and healthcare — not be deducted from minimum wage calculations, but state-level exemptions routinely permit precisely this substitution, further depressing effective cash wages (Vijayabaskar & Viswanathan, 2019, as cited in Toracca, 2024).

2.4.3 Living Conditions, Working Environment, and Children's Rights

The Plantation Labour Act of 1951 requires estate owners to provide housing, healthcare, crèches, canteens, education, and safe water. In practice, compliance is extremely poor. Housing is often dilapidated and in need of repair. Access to clean water is limited and unreliable. Sanitation is poor, with widespread open defecation due to the absence of functioning latrines (GNRTFN, 2016; Saha, 2019, as cited in Toracca, 2024). Women tea pluckers have no access to canteens, sheltered rest areas, or toilet facilities in the fields. Fifty-four per cent of Indian tea estates provide no crèche, and where crèches exist, they are frequently dysfunctional, unstaffed by qualified caregivers, or located so far from the fields where women work that 85 per cent of mothers in one survey reported preferring not to use them (Saha, 2019, as cited in Toracca, 2024).

Women work in all weather conditions — extreme heat, monsoon rain — without adequate protective equipment, while carrying loads of 22 kilograms or more. Their working day, when combined with domestic duties and water collection, regularly reaches 13 hours. A typical day begins at 4 a.m. and ends after 10 p.m. Women who arrive late by even a minute may lose their entire day's wage (GNRTFN, 2016).

The deprivation experienced by women workers extends directly to their children, in ways that constitute independent violations of the Convention on the Rights of the Child (CRC, 1989), to which India has been a party since 1992. The right to education (CRC, Article 28) is systematically undermined: schools on tea estates are chronically understaffed, housed in deteriorating infrastructure, and staffed by unqualified teachers. Girls face disproportionately high dropout rates around the age of twelve, as mothers who cannot access crèche facilities rely on elder daughters to manage household chores

and care for younger siblings (Banerji & Willoughby, 2019, as cited in Toracca, 2024). The right to adequate nutrition (CRC, Article 27) is equally compromised: 60 per cent of children in Indian tea estates are underweight, a direct consequence of inadequate food rations, low household incomes, and the chronic malnutrition of women workers who routinely skip meals to feed their children first (Morser & Michuki, 2010, as cited in Toracca, 2024). These violations of children's rights are not collateral damage; they are the predictable intergenerational consequence of a system that has always reproduced its own labour force from within the plantation community.

2.4.4 Health, Well-being, and Reproductive Rights

Occupational health hazards are severe and deeply gendered. Women report back pain and fatigue at substantially higher rates than men, as a direct consequence of the physical demands of tea plucking combined with the absence of protective equipment (THIRST, 2022). Pesticide exposure causes acute and chronic health effects; water-borne and vector-borne disease is endemic; and anaemia — a direct result of inadequate nutrition, heavy physical labour, and poor healthcare access — affects the majority of women workers (Rajbangshi & Nambiar, 2020).

Maternal health outcomes are the starkest indicator of systemic failure. Assam has the highest maternal mortality rate in India — 300 deaths per 100,000 live births — and within tea estate communities that figure rises to 404 per 100,000, comparable to rates in sub-Saharan Africa (Sharman, 2018, as cited in Toracca, 2024). Women work through the eighth month of pregnancy, are denied adequate prenatal care, and often give birth at home due to the absence of ambulance services. Breastfeeding mothers are harassed for nursing in the field, and the absence of crèche facilities forces many to bring infants into the fields, where they are exposed to extreme weather, physical risk, and pesticide contamination (GNRTFN, 2016).

These outcomes are not inevitable consequences of poverty. They are the predictable results of a system that has consistently chosen not to invest in the welfare of women workers because it has never been required to do so — and because the corporations that profit most from that system are located at a safe distance from its consequences, behind supply chains opaque enough to maintain plausible deniability. The pattern is identical, in structure if not in geography, to that documented in the DuPont case in Chapter 6 (see Chapter 6, §2.3.1): internal knowledge of harm, deliberate non-disclosure, and the maintenance of profitable conditions until external pressure — from civil society, litigation, or regulation — forces a response.

2.5 Legal Framework: Protection in Theory, Failure in Practice

A substantial legal framework exists, at both national and international levels, for the protection of women tea workers. At the international level, the key instruments include CEDAW (1979), the ICESCR (1966), the ILO Declaration on Fundamental Principles and Rights at Work (1998), the Plantations Convention (ILO No. 110, 1958), the Maternity Protection Convention (ILO No. 183, 2000), and the Violence and Harassment Convention (ILO No. 190, 2019). It is telling that none of the major tea-producing nations, including India, have ratified the ILO conventions most directly relevant to tea workers (Toracca, 2024).

At the national level, the Plantation Labour Act (1951) is the foundational instrument, supplemented by the Equal Remuneration Act (1975), the Maternity Benefit Act (1961), the Sexual Harassment of Women at Workplace Act (2013), and India's National Guidelines for Responsible Business Conduct (2018), which are formally aligned with the UNGPs.

The gap between this framework and lived reality is vast — and it is precisely the gap that the governance gap analysis in Chapter 3 predicts (see Chapter 3, §2). The PLA is systematically circumvented: estates are subdivided to fall below the minimum acreage threshold that triggers welfare obligations; in-kind benefits are substituted for cash wages under state-level exemptions; and enforcement mechanisms are underfunded, understaffed, and susceptible to political influence (Vijayabaskar & Viswanathan, 2019, as cited in Toracca, 2024). Legal processes are prohibitively slow and expensive for workers. Internal grievance mechanisms are controlled by management. Women workers, who are disproportionately illiterate and unaware of their rights, are the most systematically disadvantaged by these failures. The cost of this inaction — borne by workers, their children, and the healthcare systems that partially absorb its consequences — is substantial and largely invisible (see Chapter 4, §1 on the cost of inaction framework).

The 2020 reclassification of tea garden workers as unskilled is emblematic of a broader pattern in which the formal legal framework is actively weakened rather than enforced — a pattern that the CS3D's enforcement architecture (see Chapter 4, §2) is designed precisely to counteract by placing the burden of due diligence on buying companies operating in European markets, rather than relying exclusively on the enforcement capacity of producing-country states.

2.6 The Role of Business: Certification, Partnership, and the Limits of Voluntarism

The industry's response to documented human rights violations has centred predominantly on voluntary instruments: certification schemes, multi-stakeholder partnerships, and individual corporate initiatives. These responses have produced some measurable benefits, but the evidence suggests that they remain structurally inadequate to address violations whose root causes lie in the purchasing practices of the very companies that fund and promote them.

Certification programmes — Fairtrade, Rainforest Alliance, and India's TrusTea — have introduced minimum social and environmental standards and created accountability mechanisms through audit processes. Fairtrade has shown measurable benefits in some contexts, including improved maternity leave access and greater market stability (Toracca, 2024). TrusTea, which requires that 50 per cent of audited workers be women interviewed by female auditors, has particular contextual relevance. Rainforest Alliance covers over 850 tea farms in India (Toracca, 2024).

However, certifications are insufficient on their own. They are voluntary, lack effective enforcement mechanisms, are too expensive for smaller producers, and can be used by companies to demonstrate ethical credentials without fundamentally changing the price and purchasing dynamics that drive exploitation. As the analysis in Chapter 7 demonstrated in the context of the RSPO and the Royal Lestari Utama green bond (see Chapter 7, §1.10; §2.2), certification frameworks that rely on issuer-provided documentation and lack mandatory independent field verification are structurally vulnerable to capture by the very interests they are designed to scrutinise — a form of social licence to operate (see Chapter 3 for definition) that can be instrumentalised without being genuinely earned. Research has consistently found that certified estates are not exempt from grave human rights violations: social audits are routinely described by workers as “beautiful exercises” that temporarily improve conditions for inspectors before reverting to normal (THIRST, 2023, as cited in Toracca, 2024). The most theoretically rigorous account of this dynamic is provided by Siegmann (2023), whose mixed-methods study of Fairtrade-certified tea plantations in India and Sri Lanka demonstrates that certification provides plantation companies with tools to “harvest workers' consent” to management's pursuit of profit accumulation rather than to challenge it. Drawing on Burawoy's (1979) labour process theory, Siegmann shows that Fairtrade Premium investments and training programmes — ostensibly designed to empower workers — are systematically reframed by management

as productivity incentives, whilst workers across diverse study settings understand certification primarily as a reward for higher quality tea rather than as a verification of decent labour conditions. Critically, Siegmann demonstrates that the “plantation patriarchy” is not a cultural residue external to the certification system but an active instrument of labour governance within it: the intersection of gender and class creates a mechanism through which women workers’ effort is guaranteed and intensified under the Fairtrade framework rather than liberated by it. The result is a paradox that Siegmann renders visible with particular precision: at the level of the estate, certification contributes to reinforcing the clientelist class relations and gendered hierarchies that fair trade set out to dismantle, whilst the structural question of skewed value distribution between Northern retailers and Southern producers — the problem that gave rise to the fair trade movement in the first place — remains entirely unaddressed.

Several multi-stakeholder initiatives have demonstrated more meaningful impact. The Women’s Safety Accelerator Fund (WSAF), jointly funded by IDH, ETP, Unilever, Tesco, Twinings, and Taylors of Harrogate, reached over 200,000 women in 321 Indian tea gardens by 2023, establishing gender equality forums within estates and conducting community-level gender-based violence awareness programmes involving men, youth, and community leaders (IDH, 2024). The ETP–UNICEF Improving Lives Programme has, since 2014, delivered measurable improvements in sanitation, maternal health, education, and child protection across 206 Assamese tea estates, benefiting approximately 250,000 women, children, and adolescents, and providing healthcare access for more than 120,000 pregnant women and children under five (Ethical Tea Partnership, 2023).

Individual company initiatives offer instructive models. Unilever’s Jugnu Clubs — women’s empowerment groups serving as first responders to gender-based violence in Assamese estates — and its Global Women’s Safety Framework, developed in partnership with UN Women, demonstrate that corporate actors possess the capacity for meaningful intervention when sufficiently motivated. Taylors of Harrogate’s model of long-term supplier relationships with above-auction prices and formal contracts demonstrates that ethical purchasing practices need not compromise commercial performance: its UK market share has grown consistently over five years (Toracca, 2024). Teekampagne, a German direct-to-consumer retailer, passes approximately 50 per cent of the sale price to its Darjeeling and Assam producers by eliminating intermediaries — a structural redistribution of value that certification schemes alone cannot achieve.

These examples are significant not only for what they have achieved, but for what they demonstrate about what is possible. The argument that respecting women's rights is commercially incompatible with operating in the tea industry is contradicted by the experience of these companies. What they share — long-term relationships, price transparency, genuine engagement with workers rather than management — are precisely the purchasing practices that the UNGPs' due diligence framework, and the CS3D's binding legal requirements, are designed to make standard rather than exceptional (see Chapter 4, §2).

Yet the structural critique developed in Section 1 must be applied here with full force. The WSAF, the Improving Lives Programme, and the individual corporate initiatives described above are, in the final analysis, voluntary responses to a structural problem. They operate within — and in some respects reinforce — an industry architecture that continues to concentrate value at the downstream end and compress it at the upstream end. They do not change the fundamental dynamic by which multinational buying companies demand the lowest possible prices, force producers to compress the most compressible cost — women's labour — and then fund welfare programmes that address the symptoms of exploitation without challenging its causes. In the terms established in Chapter 3, voluntary measures are insufficient where the harm is structural; the soft law insufficiency argument (see Chapter 3, §3) applies to tea certification as directly as it does to the RSPO frameworks examined in Chapter 7.

2.7 Towards Systemic Solutions: Recommendations at Every Level

The systemic character of women's rights violations in the Indian tea industry requires responses at every level of the value chain and the governance architecture that regulates it.

At the international level, the ratification of ILO Conventions No. 110, 183, and 190 by major tea-producing nations would establish binding minimum standards for plantation workers, maternity protection, and freedom from violence and harassment. The full implementation of the CS3D — discussed in Chapter 4 — would extend mandatory due diligence obligations to the European companies that dominate the global tea trade, creating legal accountability for the purchasing practices that drive exploitation (see Chapter 4, §2). The tea industry falls outside the seven commodity categories covered by the EUDR (see Chapter 4, §3; Chapter 7, §1.10), but the due diligence logic that underpins EUDR — mandatory disclosure, value chain accountability, and enforcement against non-compliant operators — provides a regulatory model directly applicable to labour rights in agricultural supply chains.

At the national level, the Indian government must strengthen and genuinely enforce the PLA; establish a minimum daily wage in line with national benchmarks for unskilled agricultural workers; prohibit the deduction of in-kind benefits from minimum wage calculations; reverse the 2020 reclassification of tea workers as unskilled for the purposes of workplace harassment law; and ensure the full constitutional recognition of Adivasi and tribal tea communities as Scheduled Tribes entitled to affirmative protections.

At the corporate level, buying companies must publish their supplier lists and sourcing information; pay prices that enable producers to cover production costs with dignity; adopt gender-sensitive human rights due diligence processes that go beyond social audit tick-box exercises; and invest concretely in the empowerment, safety, and reproductive health of women workers in their supply chains. Estate owners must offer formal contracts, eliminate piece-rate systems that penalise women's productivity, provide functioning grievance mechanisms with genuine confidentiality and anti-retaliation protections, and deliver the welfare infrastructure the PLA requires.

At the consumer level, demand for supply chain transparency and accountability — expressed through purchasing choices, shareholder activism, and civil society pressure — has been demonstrated to produce corporate responses that market forces alone do not generate. The “Who Picked My Tea?” campaign's success in pressuring Tetley to disclose sourcing from 68 Assamese estates illustrates the leverage that informed consumers and civil society organisations can exercise (Rao & Bernaz, 2020).

As one Assamese tea plucker asked, in terms that no governance framework has yet adequately answered: “Who will stand up for us?” (Rajbangshi & Nambiar, 2020, p. 1). The answer that the business and human rights field must provide is not the name of a certification scheme or a corporate social responsibility programme. It is a structural transformation in how the global tea industry distributes the value that women's labour creates — a transformation that requires binding legal obligations, genuine enforcement, and the political will to treat the rights of the most invisible workers in the global economy as non-negotiable.

3. Concluding Remarks

This chapter has argued that the relationship between business conduct and human rights is irreducibly gendered — and that understanding this gendered dimension is not a specialist concern but a structural necessity for any serious engagement with the field of business and human rights. The evidence assembled in Section 1 demonstrates that women are not merely

among those harmed by corporate misconduct; they are, in many sectors and contexts, the primary targets of a structural logic that treats their labour, their land, their bodies, and their access to justice as instruments of profit. This logic operates through the architecture of global value chains, the purchasing practices of multinational corporations, the governance failures of states, and the patriarchal norms that pervade both market institutions and the households in which women live and work. It is reinforced, and in some respects deepened, by trade liberalisation, occupational segregation, and the systematic barriers that women face in accessing effective remedy for the harms they suffer.

The case study of the Indian tea industry, developed in Section 2, illustrates these dynamics with uncomfortable precision. The women who pluck tea leaves in Assam — predominantly Adivasi, descendants of colonial-era migrant labourers, employed on piece-rates that fall below the national minimum wage, housed in accommodation contingent on their continued employment, denied access to functioning healthcare and childcare, exposed to endemic gender-based violence, and excluded from every meaningful mechanism of redress — are not the victims of a regional anomaly or a set of bad actors. They are the victims of a system: a global value chain deliberately architected to transfer the burden of competitive pressure downwards until it reaches the point of least resistance, which is, in the Indian tea industry as in many other sectors, the wages and welfare of women at the bottom.

This structural logic — the exploitation of the least powerful as the rational outcome of a cost-minimisation calculus operating within a governance gap — has been a constant thread throughout this volume. It drove the construction of Xinjiang's labour transfer programmes, examined in Chapter 5. It structured DuPont's decades-long concealment of PFAS toxicity, examined in Chapter 6. It animated Michelin's use of green certification to obscure pre-existing deforestation, examined in Chapter 7. In each case, the harm was foreseeable, and in most cases foreseen. The corporations involved knew, or had reasonable means to know, the consequences of their choices (see Chapter 1, §5). The extractivist logic identified in Chapter 2 (see Chapter 2, §3) does not merely consume natural resources: it consumes the health, the rights, and the futures of women workers who constitute its most expendable inputs.

The cost of this inaction is not abstract. The framework established in Chapter 4 documents that the failure to implement existing environmental and labour norms generates costs — measured in preventable mortality, lost productivity, intergenerational deprivation, and ecosystem degradation

— that far exceed the cost of regulation (see Chapter 4, §1). The maternal mortality rate of 404 per 100,000 in Assamese tea estate communities is not a development statistic: it is a measure of the cost of inaction borne by women whose rights the international human rights framework explicitly guarantees, and whose employers could afford to protect them.

Chapter 2 of this volume establishes human dignity as the non-negotiable foundation of any legitimate business model. Chapter 3 sets out the corporate responsibility to respect human rights as defined by the UNGPs. Chapter 4 traces the translation of that responsibility into binding legal obligation through the CS3D. This chapter has sought to show that the full meaning of these frameworks cannot be grasped without placing gender at the centre of the analysis — because the harms that business conduct most systematically produces fall most heavily on women, and because any theory of corporate responsibility that does not reckon with that fact is, at best, incomplete, and at worst, complicit in the invisibility it fails to challenge.

The following chapter — Chapter 9 — examines a different geography and a different commodity, but the same structural logic: the Gibe III hydroelectric dam in Ethiopia and the role of the Italian construction company Salini Costruttori, where land grabbing, the displacement of indigenous communities, and the failure of Free, Prior and Informed Consent processes illustrate how infrastructure finance reproduces, in new institutional forms, the extractivist patterns that this volume has traced from Xinjiang to Assam.

Box 1 - Guiding Questions

1. How does the concept of intersectionality change the analysis of who bears the greatest burden of corporate harm — and what are the implications for how due diligence frameworks should be designed?
2. To what extent does the extractivist logic identified in Chapter 2 explain the structural exploitation of women's labour in global value chains, and what does this imply about the adequacy of remedial rather than structural responses?
3. Under what conditions can voluntary certification schemes become genuine instruments of workers' empowerment rather than tools for harvesting consent to management's accumulation strategies — and what would legally binding certification standards, analogous to organic certification frameworks, add that voluntary schemes structurally cannot?
4. How is responsibility for intergenerational deprivation in tea estate communities distributed across the value chain — and at what point does the failure to act constitute complicity in the meaning of the UNGPs?
5. What would a genuinely gender-sensitive approach to human rights due diligence require in practice — and how does it differ from the social audit model currently dominant in the tea industry?

Box 2 - Key facts	
→	Women constitute 58 per cent of India’s tea plantation workforce, primarily employed as tea pluckers, but earn approximately 35 per cent of a liveable income, averaging \$14.50 per month.
→	Tea workers receive 1–2% of retail price; retailers retain 41–59% (BHRRC, 2021)
→	Sixty per cent of children in Indian tea estates are underweight, a direct consequence of inadequate food rations, low household incomes, and the chronic malnutrition of women workers.
→	Maternal mortality in Assam tea estate communities: 404/100,000 live births (Sharman, 2018).
→	The Indian government’s 2020 reclassification of tea garden workers as “unskilled” removed them from the protection of the Sexual Harassment of Women at Workplace Act (2013), stripping a predominantly female, predominantly Adivasi workforce of a legally mandated protection.
→	None of the major tea-producing nations have ratified ILO Conventions No. 110, 183, and 190 (Toracca, 2024).
→	In 2024, employed women, on average, throughout different sectors around the world earned approximately 77.4 cents for every dollar earned by men.

Box 3 - Key Concepts: A Working Glossary

Term	Definition
Intersectionality	Analytical framework recognising how multiple axes of identity and marginalisation — gender, race, ethnicity, class, caste, migration status — interact to produce compounded forms of discrimination and harm that cannot be reduced to the sum of their parts (CEDAW Committee, 2004, as cited in Götzmann et al., 2018)
Gender pay gap	The average difference between the remuneration of men and women in employment, reflecting both direct wage discrimination and the systematic undervaluation of work performed predominantly by women; globally, women earned approximately 77.4 cents for every dollar earned by men as of 2024 (ILO, 2025)
Export Processing Zones (EPZs)	Designated areas within a country where goods can be manufactured or traded under specially relaxed regulations, including reduced labour protections; women constitute between 70 and 90 per cent of EPZ workforces globally (ILO, 1998, as cited in Götzmann et al., 2018)
Kafala system	A visa sponsorship system prevalent in Gulf countries that ties migrant workers’ legal status to their employer, preventing them from leaving or changing jobs without the sponsor’s consent; documented as a mechanism of corporate control and a driver of forced labour conditions

Buyer-driven commodity chain	A value chain in which large downstream buyers — retailers, brands, and multinational traders — exercise dominant power over price, quality, and working conditions throughout the supply chain, concentrating value capture at the downstream end while compressing costs at the upstream end
Bonded labour	A form of forced labour in which a worker is compelled to work in order to repay a debt — real or fabricated — or is bound to an employer through non-wage dependencies such as tied housing, food rations, or advance payments that cannot be repaid on prevailing wages; recognised as a form of modern slavery under international human rights law
Piece-rate system	A remuneration structure in which workers are paid per unit of output rather than per hour worked; in tea plantations, used to assign women to lower effective wage categories by setting targets calibrated to male productivity norms, systematically penalising women's output
Gender-based violence (GBV)	Violence directed against a person on the basis of their gender, including physical, sexual, and psychological harm; in the context of global supply chains, encompasses workplace sexual harassment, domestic violence enabled by tied housing arrangements, and structural coercion linked to employment insecurity
Adivasi	Indigenous and tribal communities of India, recognised as Scheduled Tribes under the Indian Constitution and entitled to specific affirmative protections; tea plantation workers in Assam and West Bengal belong predominantly to Adivasi communities not formally recognised as Scheduled Tribes, leaving them without constitutional protection
Plantation Labour Act (PLA, 1951)	Indian legislation requiring tea and other plantation estate owners to provide housing, healthcare, crèches, canteens, education, and safe water to workers; systematically circumvented through estate subdivision, state-level exemptions, and underfunded enforcement mechanisms
“Harvesting consent”	Concept developed by Siegmann (2023) through Burawoy's (1979) labour process theory: the process by which management-mediated certification structures provide plantation companies with tools to align workers' interests with profit accumulation objectives, producing consent that is structurally manufactured rather than genuinely expressed by workers

Chapter 9

Land Grabbing, Indigenous Communities and Human Rights

Case Study: Salini's Gibe III Project

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Restless feet might walk you into a snake pit
Ethiopian proverb

Land grabbing — the large-scale acquisition of land by businesses or governments without adequate consultation or compensation — represents one of the most pervasive intersections of corporate activity and human rights violation. This chapter examines the structural conditions that enable land grabbing, with particular attention to the role of green energy projects in displacing indigenous communities under the cover of sustainable development. The central case study analyses the Gibe III Hydroelectric Project on the Omo River in Ethiopia, constructed by Italian contractor Salini and financed through a combination of state funds and Chinese capital following the withdrawal of major international development banks. The case reveals systematic failures in environmental and social impact assessment, the circumvention of international procedural standards, and the severe consequences for over 500,000 indigenous people dependent on the Omo River and Lake Turkana. By examining the conduct of governments, corporations, financial institutions, and independent advisors, the chapter interrogates the conditions under which green infrastructure reproduces, rather than resolves, patterns of dispossession and human rights abuse. The chapter concludes that the classification of infrastructure as environmentally beneficial at the macro level does not suspend the obligations of states and corporations under international human rights law, and that the accountability failures documented in this case are not exceptional but structural.

Keywords: land grabbing; indigenous rights; hydropower; greenwashing; impact assessment; Ethiopia; Kenya; Salini.

*Dedicated to Taye Belay,
who introduced me to Ethiopia,
and the hidden side of the world in which I live every day*

Learning Objectives

After reading this chapter, you will be able to:
Define land grabbing and explain the structural conditions that enable it, with particular reference to weak customary land rights protections and inadequate environmental governance.
Analyse the role of multiple stakeholders – states, corporations, financial institutions, and independent advisors – in enabling or failing to prevent the human rights and environmental impacts of the Gibe III project.
Evaluate the tension between macro-level green energy classifications and localised patterns of dispossession, applying the concept of greenwashing to infrastructure finance.
Assess the adequacy of international procedural standards – including the UNGPs, IFC Performance Standards, and World Commission on Dams guidelines – in the context of the Gibe III case.
Critically reflect on the accountability gap between formal corporate commitments to sustainability and actual conduct in the field, and identify what structural reforms would be necessary to close it

1. Critical Business Practice: Land Grabbing, Indigenous Communities and Human Rights

The preceding chapter documented how extractivist logic operates not only through the depletion of natural resources but through the systematic exploitation of social vulnerabilities – and that communities facing land dispossession and forced displacement bear compounding harms that standard due diligence frameworks are structurally ill-equipped to capture. This chapter examines a case in which those dynamics converge with particular force: the Gibe III hydroelectric project on the Omo River in Ethiopia, where the pursuit of green energy has produced the dispossession of over 500,000 indigenous people, the near-irreversible degradation of a UNESCO World Heritage site, and a systematic failure of corporate, state, and institutional accountability.

Land grabbing refers to the phenomenon of the large-scale acquisition of land by businesses or governments, often involving the expropriation of land without adequate consultation or compensation for affected communities. This practice can lead to violations of the rights to property and housing, as well as other human rights, including the right to food security, displacement, and loss of livelihoods for local communities. The extractivist logic identified in Chapter 2 (§3) as structurally incompatible with a safe and just corridor for humanity finds one of its most concrete expressions in land grabbing: the dispossession of communities whose relationship with land and water is not mediated by market valuation, and whose customary rights are therefore invisible to the legal and financial frameworks that govern large-scale infrastructure.

Addressing this issue requires robust legal protections, community engagement, and respect for land rights. The European Parliament (2016) has highlighted the need for policies that protect land rights and ensure fair treatment of indigenous and local populations. Businesses must engage in transparent land acquisition processes and respect the customary rights of landholders to prevent human rights abuses.

Greenwashing (see Glossary, Box 3, Chapter 4) is a major issue at the intersection of business and human rights, where companies mislead stakeholders about their environmental and human rights practices. As established in Chapter 4 (§3), greenwashing operates not only at the level of corporate communication but also at the level of financial architecture: the classification of a project as green can function as a mechanism for circumventing procedural safeguards, allowing harmful projects to access capital and legitimacy that would otherwise be denied. Several multinational corporations have been accused of greenwashing by exaggerating their sustainability efforts while continuing harmful practices. This undermines trust and highlights the need for rigorous enforcement and transparency (Delmas & Burbano, 2011).

As discussed in Chapter 7 (§2), the Royal Lestari Utama (RLU) project, led by Michelin and Barito Pacific Group, aimed to develop sustainable rubber plantations in Sumatra, Indonesia, by claiming a reforestation initiative in areas described by Michelin as ‘devastated by uncontrolled deforestation’ — while failing to disclose, during the green bond certification process, that the deforestation of those same areas had been carried out, in part, by entities within the project’s own supply chain. In 2018, BNP Paribas promoted a green bond to fund this project, presenting it to investors as an instrument of environmental restoration. This case study highlights the key problem of greenwashing in business activities, with direct implications for human

rights, land grabbing, and the environment. It is vital that businesses and key stakeholders ensure green bonds genuinely serve sustainability efforts and that green finance is not exploited for greenwashing.

Similarly, Chapter 12 presents two distinct but related forms of accountability failure. The first concerns the greenwashing of solar energy projects in the West Bank, where renewable energy infrastructure is deployed to consolidate control over occupied territory under the guise of climate change mitigation and sustainability. The second concerns the case of Lockheed Martin, which examines how corporate governance structures can be deliberately configured to insulate profitable conduct from accountability — not through the absence of shareholders, but through the active alignment of governance mechanisms with objectives that conflict with international law and the rights of affected stakeholders. Against this backdrop, businesses and stakeholders must pay particular attention to upholding international law and the UNGPs.

The case examined in this chapter — the Gibe III hydroelectric project — presents a further and structurally distinct configuration of accountability failure. Unlike conventional corporate misconduct, where shareholders can in principle call management to account at an annual general meeting, the Gibe III project was financed primarily through supranational institutions: the World Bank, the African Development Bank, the European Investment Bank, and the Industrial and Commercial Bank of China. These entities operate under mandates defined by intergovernmental agreement rather than by private ownership. No shareholder resolution can reverse a disbursement decision by the African Development Bank; no activist investor can table a motion at the World Bank's board. When those institutions formally withdrew from the project on procedural grounds — and then financed its operational complement through a technical distinction that independent researchers and this chapter argue is untenable — there was no assembly of owners to demand an explanation. The accountability gap is not incidental: it is architectural. It is this structural feature, as much as the conduct of any individual actor, that the Gibe III case places at the centre of the analysis that follows.

Furthermore, land issues related to local people's rights in this case highlight concerns about transboundary harm and restricted water access. The disruption of the Omo River's flow has led to the displacement of local populations. Indigenous communities in the region, who depend on water and fishing from Lake Turkana and the Omo River, have faced severe impacts on their livelihoods. Their cultural practices have been compromised, raising concerns about cultural heritage. The setbacks in this case demonstrate severe consequences for local communities and indigenous peoples.

2. Case Study: Salini's Gibe III Project: Is Green Energy Good?

The quest for sustainable development has never been more urgent, as humanity grapples with resource depletion, environmental degradation, climate change, and social conflicts. The United Nations' Agenda 2030, with its 17 Sustainable Development Goals (SDGs), provides a comprehensive framework to address these global challenges. A crucial role in this agenda is played by green energy (SDGs 7 and 13) — comprising renewable sources such as solar, wind, hydro, and geothermal — which underpins efforts to achieve a resilient and sustainable global economy.

The green transition to a sustainable economy entails profound economic and environmental benefits. Economically, the renewable energy sector is a burgeoning field that creates jobs, stimulates investment, and fosters technological advancements. According to the International Renewable Energy Agency (IRENA, 2021), the renewable energy sector employed 12 million people globally in 2020, a number expected to rise as the sector expands. This job creation can alleviate poverty (SDG 1) and promote decent work and economic growth (SDG 8). Environmentally, green energy reduces air and water pollution, conserving ecosystems and biodiversity. Hydropower, for example, can support both clean energy production and water management (SDG 6), while offshore wind farms can coexist with marine life if properly managed. By mitigating the adverse effects of fossil fuels, green energy contributes to sustainable cities and communities (SDG 11) and responsible consumption and production (SDG 12).

Despite the clear benefits, the transition to green energy faces substantial challenges. These include technological barriers, high initial investment costs, and the need for robust policy frameworks. Policymakers must implement supportive regulations and incentives to foster sustainability beyond renewable energy. Overcoming these challenges requires efforts in multi-level governance from governments, businesses, and civil society.

Not all aspects of green energy are unequivocally positive. Large-scale hydropower projects, for instance, can have documented adverse effects on local ecosystems and communities. Dams can disrupt river flows, harm biodiversity, and displace human populations, which may lead to social and environmental conflicts. Environmental impact assessments should therefore be mandatory for all green energy projects to identify and address potential harms at the planning stage. Engaging local communities in the planning process can help balance development goals with social and environmental needs.

International cooperation is also a key driver for sustainability in the green energy transition. Developed countries can assist developing nations through technology transfer and financial support, ensuring a global transition that leaves no one behind.

Against this background, this case study is set in Ethiopia, in the Horn of Africa. Ethiopia's Growth and Transformation Plan I (2010/11–2014/15) underscores the nation's commitment to economic development and poverty reduction, with a momentous focus on expanding its renewable energy capacity through large-scale hydropower projects: the Grand Ethiopian Renaissance Dam (GERD) and the Gibe-Omo cascade — a series of dams on the Omo River in southern Ethiopia, including the existing Gibe I dam (184 MW, since 2004), Gibe II power station (420 MW, since 2010) and Gibe III (1,870 MW, since 2016), as well as the planned Gibe IV (1,472 MW) and Gibe V (560 MW) dams. Upon completion, these hydropower plants will boost Ethiopia's energy supply, supporting the country's industrialisation and economic growth: half of the production from Gibe III will be exported to Kenya (500 MW), Sudan (200 MW) and Djibouti (200 MW).

Large-scale hydropower projects in Ethiopia illustrate the complex trade-offs inherent in the green transition. While these projects promise noteworthy economic benefits, including job creation, energy security, and regional power exports, they also pose substantial environmental and social challenges — the latter as a consequence of the displacement of local communities, and the former through the alteration of natural water flows and their impact on downstream ecosystems and livelihoods. Sudan and Egypt rely on the Nile River; Kenya relies on the Omo River.

This case focuses on the Gibe III project, completed in 2016 with the goal of significantly enhancing Ethiopia's electricity generation capacity. Managed by the Ethiopian Electric Power Corporation (EEPCo) and constructed by foreign multinational companies, the project is integral to Ethiopia's development strategy, aiming to make the country a major power exporter in East Africa.

This case study examines the impact of the Gibe III project on local communities, with a particular focus on business and human rights issues. It analyses the environmental and social implications of the project, evaluates the role of the most relevant stakeholders, and draws lessons for future consideration in similar projects.

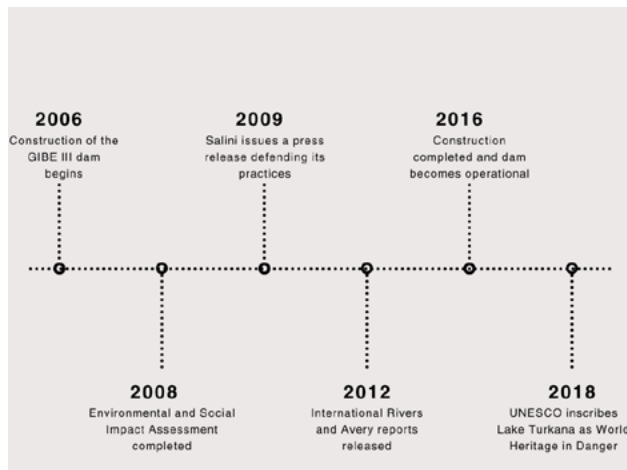
2.1 Project overview

2.1.1 Gibe III Dam and Its Hydropower Plant

Located in a gorge of the Omo River, 464 kilometres south-west of the capital Addis Ababa, in the Southern Nation Nationalities & Peoples region, with the coordinates 6.8472°N × 37.3014°E, the dam site is upstream of the Omo National Park and Lower Omo Valley, a UNESCO World Heritage Site — a prehistoric site near Lake Turkana that has been of fundamental importance in the study of human evolution.

Gibe III is a 243-metre-high roller-compacted-concrete dam (see *Glossary*, Box 3) — the tallest of its kind in the world — supporting a storage capacity of 14 billion cubic metres in a surface area of 210 km², a volume equal to approximately two years of the Omo River's flow at the dam site. The project has 10 Francis turbines of 187 MW each, totalling an installed capacity of 1,870 MW that will generate up to 6,500 GWh of electricity per year — almost doubling Ethiopia's electricity supply.

Figure 1 - Gibe III project timeline



Source: the Author.

The project cost approximately USD 1.8 billion, funded by a combination of Ethiopian government funds, international loans, and private investments, which compensated for the withdrawal of international development banks that had backed away due to violations of their required procedures for project support.

- **Government of Ethiopia (GoE):** Invested USD 500 million in the Ethiopian Electric Power Corporation's common equity.
- **Industrial and Commercial Bank of China (ICBC):** Signed a USD 421.750 million buyer's credit loan agreement to finance 85% of a USD 495 million commercial contract between EEPCo and Dongfang Electric Corporation for the electro-mechanical and hydraulic steel structure works component.
- **Ethiopian Electric Power Corporation (EEPCo):** In 2008, targeting the Ethiopian Diaspora, issued a USD 500 million government-guaranteed bond, maturing in 5, 7 or 10 years (with interest rates of 4%, 4.5% and 5% respectively) – namely, the EEPCo Millennium Bond. This bond did not meet investors' expectations and was mainly underwritten by the Central Bank (National Bank of Ethiopia) (International Rivers, 2011; Campagna per la Riforma della Banca Mondiale & CEE Bankwatch Network, 2008).

The financial structuring and international investments underscored the economic importance of the project but also highlighted the risks and responsibilities associated with such large-scale infrastructure investments – particularly the potential consequences of failing to comply with international standards in transparency and impact assessments. Without the intervention of the People's Republic of China (PRC), the project would have financially collapsed. Additionally, it should be noted that the PRC financed EEPCo to pay for assets exported by a Chinese company, Dongfang Electric Corporation, allowing the PRC to profit in both financial and real markets from the same asset. This dual profit becomes even more apparent when considering the entire set of assets to be financed: without the separate establishment of transmission lines, the electricity generated by the Gibe III hydro plant would have no market value..

2.1.2 Electricity Transmission Lines

Attached to the Gibe III project is the 'Gibe III – Sodo 400 kV Power Transmission Lines Project,' designed to transmit the electric power generated from the Gibe III hydropower plant to the new substation at Sodo, located about 50 km from the Gibe III power station. The transmission became operational as soon as the Gibe III station began generating power.

EEPCo managed the implementation of the project, subcontracting TBEA, a Chinese-based company, for the transmission lines, and Shanghai

Electric Group, also from China, for the installation of the distribution stations. This side-by-side project was funded by the Ethiopian government (15% of the total cost) and by the Export-Import Bank of China (China EXIM), which granted two loan agreements totalling USD 188.3 million.

The Ethiopia-Kenya Eastern Electricity Project (EEHP) is the ‘elephant in the room’: a huge electricity export project planned as the first phase of an ambitious multi-nation, integrated power-trading network in eastern Africa — the East Africa Power Pool (EAPP). The EEHP is a 1,045 km electricity transmission line infrastructure, with a power carrying capacity of 2,000 MW, running from Sodo in Ethiopia to Suswa, outside of Nairobi, Kenya.

The World Bank (WB) and African Development Bank (AFDB) approved slightly above USD 1.2 billion in financing for the Ethiopia-Kenya transmission line, complemented by funding from the Agence Française de Développement (USD 118 million). The WB and the AFDB have repeatedly stated that their funding for the EEHP is ‘unrelated’ to the Gibe III dam, claiming: (i) an approximately 50-km separation between the Gibe III dam and the substation at Sodo; and (ii) that the Gibe III dam is not ‘necessary’ for the economic viability of the transmission line. In 2012, the United States released a position statement concerning the EEHP that uncritically supported both claims.

Thus, while the international development banks could not finance the Gibe III mega-hydroelectric project due to its adverse impacts and lack of transparency, the electricity transmission lines could be financed by them, since there was claimed to be ‘no link’ with the disputed project. This distinction generates a paradoxical point: without the transmission line connecting the hydropower plant to the international electricity pipeline, neither project has any market value, because there is no deliverable product to sell. The functional and strategic connection between those assets must be clear: the hydropower plant needs transmission lines to channel and sell the energy produced; the transmission lines to a foreign country need excess energy produced in the exporting country.

The EEHP project — and therefore simultaneously Gibe III, as they are operationally mutually inseparable — was ultimately rescued by the intervention of the PRC, which once more financed, again with double profit on the same asset, the 50-kilometre link between the two assets: the connection between the ‘unfundable’ and the ‘fundable one’.

2.2 Stakeholder mapping

2.2.1 Ethiopian Government

The Government of Ethiopia (GoE) has been a primary proponent of the Omo River basin energy production potential, viewing this opportunity as a pivotal component of its Growth and Transformation Plan. The government's goals include enhancing energy security, promoting economic development, and positioning Ethiopia as a key energy exporter in the region.

The Ethiopian government's role in the Gibe III project illustrates a pattern examined in Chapter 6 (§3): the state acting not as a regulator of corporate conduct but as an active agent of dispossession. By awarding no-bid contracts (see *Glossary*, Box 3) that excluded independent oversight, failing to require environmental and social impact assessments before project inception, leasing indigenous lands to foreign agro-industrial companies, and classifying customary land as 'vacant' or 'undeveloped' to avoid expropriation proceedings and compensation obligations, the GoE systematically deployed its regulatory and coercive powers in the service of the project's commercial objectives — and against the rights of the communities most directly affected.

To initiate the Gibe cascade of dams, EEPCo issued an Engineering Procurement Construction (EPC) contract (see *Glossary*, Box 3) to the Italian-based Salini Costruttori s.p.a. (renamed WeBuild since 2020; 'Salini' hereinafter)² — a turnkey contract for a completed project, eliminating any oversight during the construction period. EEPCo repeated its direct turnkey contracting to Salini, disregarding the bidding process and project oversight, in successive Gibe II and III dam contracts (July 2006). Since 2010, Ethiopia's Federal Public Procurement Directive requires international competitive bidding if the value of the works contract exceeds the threshold of ETB 50 million (USD 0.8 million). The absence of competitive tendering and independent oversight illustrates the governance gap identified in Chapter 3 (§2.1): where state institutions are both proponents and regulators of large-scale infrastructure, procedural safeguards are systematically eroded.

² Salini Costruttori s.p.a. merged with Impregilo s.p.a. in 2014 to form Salini Impregilo s.p.a. The company was subsequently rebranded as WeBuild s.p.a. in 2020. In this chapter, 'Salini' is used throughout to refer to the entity in its successive legal forms, given the continuity of management, operations, and contractual relationships with the Ethiopian Electric Power Corporation across the Gibe I, II, and III projects. The press release cited as Salini Impregilo (2012) was issued under the pre-merger name; the bibliographic entry reflects the name used on the document itself.

2.2.2 Business entities

The main EPC contractor, along with other business entities involved in the project, most of which are foreign, have a vested interest in the project's success. Their roles and responsibilities in ensuring the project's ethical and sustainable execution are crucial: corporate decisions in selecting and implementing alternatives drive — or fail to drive — outcomes for people and the environment.

Salini was a leading international contractor active in over 40 countries and employing 15,500 people from 67 different nationalities, formally committed to sustainable development based on the respect for human rights of all employees and stakeholders. In 2010, Salini became a signatory of the UN Global Compact — ten universal principles related to human rights, labour, environment and anti-corruption. Its 2010 GRI-based Sustainability Report (qualified with an A+ application level) contains company policies regarding sustainability, corporate social responsibility and environmental protection.

Salini's engagement with the GoE dates back to the Emperor Haile Selassie I's time, specifically during the construction of the Legedadi dam and treatment plant on the Akaki River, east of Addis Ababa. Later, during the dictatorship of Mengistu, in 1986, Salini signed a EUR 150 million contract to implement the giant Tana-Beles agro-industrial project — covering 200,000 hectares of farming land. The project failed, producing hunger, disease and death among the resettled population of 75,000–80,000 (Carr, 2017, p. 28). In 1995 and 2004, respectively for the Gibe I and Gibe II projects, Salini signed no-bid EPC turnkey contracts with the GoE, which excluded any oversight during the construction period and contained a clause of no financial liability. Given its track record of completing projects on time, in July 2006, EEPCo signed again with Salini the last turnkey, no-bid, no-provision EPC contract for building Gibe III. Construction began in December 2006, despite the absence of an environmental or socio-economic impact assessment (ESIA) (see *Glossary*, Box 3) before this. Three years later, in 2009, two ESIA reports were released; however, they failed to address the transboundary and associated irrigation projects' effects.

In May 2012, Salini issued a press release addressing concerns raised by various stakeholders about the Gibe III project, asserting its commitment to social and environmental responsibility. Years later, several of Salini's claims were scrutinised, revealing discrepancies between the company's assertions and the realities on the ground (Table 1).

Table 1 – Salini and international NGOs on the main concerns of the Gibe III project

Concerns	Salini’s 2012 press release	International NGOs follow-up
Environmental and social impact assessments	Comprehensive environmental and social impact assessments were conducted in accordance with international standards. ‘[Gibe III] will <i>not</i> affect population, wildlife and will have only a bare <i>minimum impact</i> on local vegetation. Biodiversity will <i>not</i> be affected’ [italics added]..	Subsequent investigations by NGOs and international bodies argue that the assessments underestimated the scale of environmental and social impacts, particularly regarding Lake Turkana. Irrigation projects were not disclosed in the ESIA reports.
Mitigation measures	The company outlined mitigation measures implemented to address the potential negative impacts, including creating alternative water sources for affected communities, developing new agricultural schemes, and implementing programmes to preserve local biodiversity.	Reports from affected communities indicate that many of the promised mitigation measures were either inadequately implemented or failed to deliver the expected outcomes. Issues such as water scarcity and reduced agricultural productivity remain prevalent.
Community engagement	Salini highlighted efforts to engage with local communities throughout the project, establishing mechanisms for ongoing dialogue and grievance redress to ensure that community concerns were addressed promptly and effectively.	Numerous reports suggest that the consultation processes were insufficient and often excluded the most affected groups. Many community members reported feeling marginalised and unheard.
Economic benefits	The company underscored the economic benefits of the Gibe III project, including job creation, infrastructure development, and the potential for regional economic growth driven by increased energy availability.	Although the project has contributed to regional energy capacity, the distribution of economic benefits has been uneven: local communities have borne the brunt of negative impacts without reaping commensurate economic rewards.

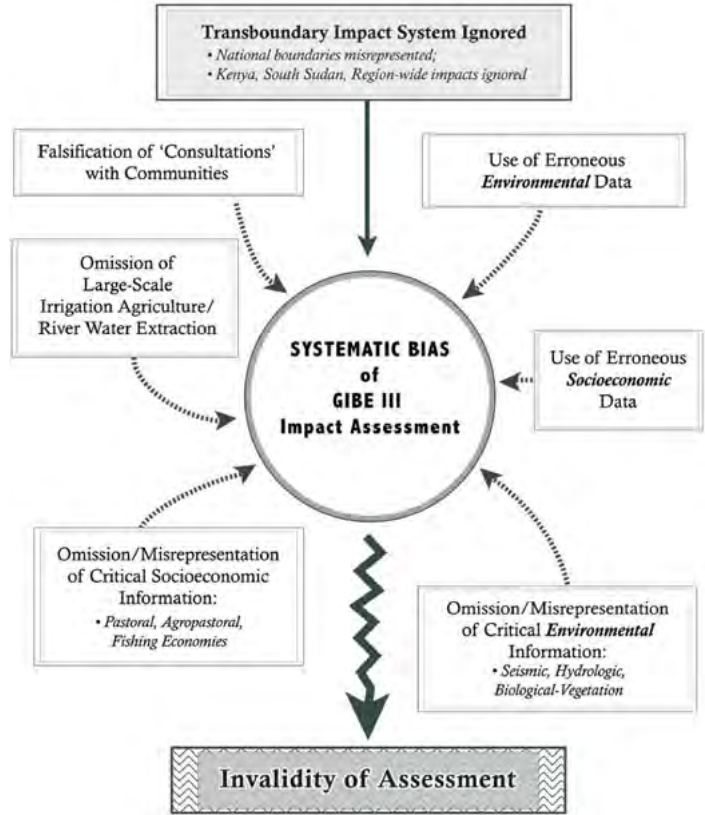
Source: Compiled by the author based on Salini (2012); International Rivers (2011); Avery (2012); Campagna per la Riforma della Banca Mondiale & CEE Bankwatch Network (2008); National Geographic Society (2024); UNESCO World Heritage Centre (2018).

The role played by consulting firms and individuals in delivering impact assessments and related studies is twofold: depending on the aim, scope and subject of assessment assigned by contract, they are determinant for the formulation and implementation of large-scale projects. In this case study, the following are relevant:

- **Sogreah Consultants SAS:** France-based international engineering consulting firm, contracted with the European Investment Bank for a EUR 300,000 ‘independent’ review of the GoE’s downstream assessment of the Gibe III’s environmental and social impacts.
- **Sir Alexander Gibb & Partners:** A UK-based multinational engineering consulting firm, contracted with the African Development Bank to produce its assessment of the Gibe III dam’s impacts on Lake Turkana.
- **Centro Elettrotecnico Sperimentale Italiano s.p.a.:** Italy-based global consulting firm, which in 2009 released an ESIA for the dam ‘project area’, yet limited to the area proximal to the dam and the impound area for the reservoir.
- **Agriconsulting of Italy**, in association with **MDI Consulting Engineers:** Two Italy-based consulting firms, which released a later ESIA on the downstream impact in 2009.

Altogether, reports released by the consulting firms depict extensive major omissions, misrepresentations, and fabrications, which were used to support GoE policy, resulting in a nexus of policy institutions collaborating with complicity while failing in the ultimate scope of the impact assessment (Figure 2).

Figure 2 - Dimensions of invalidity in the Ethiopian government’s impact assessment of the Gibe III



Source: River Basin Development and Human Rights in Eastern Africa: A Policy Crossroads (p. 88), by C. J. Carr, 2017, Springer. <https://doi.org/10.1007/978-3-319-28480-4>. CC BY 4.0.

China’s importance in African economic development is rising, largely dominating the market. Aligned with China’s clean energy strategy and the growth of its green bond market, the country’s hydropower sector has recently amplified its influence on global markets, markedly in Africa. The cooperation between the Chinese Export-Import Bank, various Chinese financial institutions, state-owned enterprises, and private companies has positioned China at the forefront of constructing more than 90 major dam projects internationally. The People’s Republic of China came to the rescue of Gibe III’s financing gap in 2010 when the state-owned Industrial and Commercial Bank of China (ICBC) signed an agreement for a USD 459 mil-

lion contract with Dongfang Electric Corporation, and again in closing the operational loop between the hydropower station and the transmission lines to Kenya. This operating scheme leads to a double contribution to China's GDP growth — and a corresponding reduction in the Ethiopian one — both for exported goods and financial services.

2.2.3 Local communities

More than 500,000 of the region's indigenous people heavily depend on access to adequate water from the Omo River or Lake Turkana for their livelihoods, based on agriculture, fishing, and pastoralism. The failure to obtain free, prior and informed consent (FPIC) from affected communities — a requirement established under the UNGPs framework examined in Chapter 3 (§3) — represents one of the most fundamental procedural violations documented in this case. Consequently, the disruption of the river's flow has had significant adverse effects on their economic activities and overall well-being. This highlights the importance of taking into account the socio-economic impacts of large-scale development projects and implementing measures to mitigate any adverse effects on local communities. Engaging local communities at the design phase is crucial to share alternatives and collaboratively develop effective mitigation measures, ensuring their needs and perspectives are integrated into project planning.

2.2.4 International stakeholders

International stakeholders include environmental NGOs and human rights organisations, international financial institutions, and independent researchers. These players have raised concerns about the project's environmental and social impacts, advocating greater transparency, adherence to international standards, and mitigation of its negative effects.

2.2.5 Environmental NGOs and Human Rights Organisations

According to Transparency International (2005), large public works projects are one of the world's most corrupt sectors, and no-bid contracts are an open invitation to corruption: five out of the six 'Monuments of corruption' reported in the Global Corruption Report 2005 are related to hydropower projects.

A letter sent in 2008 from five international NGOs to the global bank JP Morgan (which adopted the Equator Principles, introduced in Chapter 3 §3) asking it to review the Gilgel Gibe III project against its policies and international standards fully addressed the concerns on the project's environmental and social impacts.

The NGOs International Rivers, Friends of Lake Turkana (based in Kenya), Campagna per la Riforma della Banca Mondiale (CRBM), Survival International, Human Rights Watch, and BankTrack have disseminated international concerns and findings from independent researchers regarding the construction of the Gibe III.

2.2.6 International Financial Institutions

According to the World Bank Monthly Operational Summary, the main funders of the A-category Environmental Assessment for the Gibe III project – defined as a project that ‘may have adverse and significant environmental impacts’ and for which ‘a full environmental assessment is normally required’ – were the World Bank (WB) group, the African Development Bank (AFDB), and the European Investment Bank (EIB). The WB, AFDB and EIB have been major contributors to the Omo River basin’s commercial development planning, feasibility, and early dam construction. Their internal operational policies for funding projects, however, prevented them from funding the Gibe III dam directly, because of the GoE’s no-bid contracting, its failure to establish impact assessments prior to project inception, and other violations of procedural requirements. The WB, EIB and AFDB require independent ESAs before taking any decision on granting finance (World Bank, 2009).

In a press release dated 19 July 2010, the European Investment Bank (EIB) announced its withdrawal from the Gibe III hydroelectric project. The reason given was not the concerns raised by international NGOs and independent researchers, but rather the Ethiopian government’s identification of alternative sources of financing. In its press release, the EIB refrained from taking an official stance on the claims made by those organisations (European Investment Bank, 2010).

Although the AFDB recognised that the project’s contract procurement failed to comply with the Bank’s guidelines, it was designing an alternative solution to overcome the problem. In a Problem Solving Report dated 2 September 2010, the AFDB informed that it had received a letter from the Ethiopian authorities expressing that they were no longer pursuing the Bank’s financing of the Gibe III project (African Development Bank, 2010, p. 5). Again, a way out was found that was not based on the project’s ineligibility for funding.

Starting from the November 2010 Monthly Operational Summary, the WB reported that the Gibe III project ‘is no longer in the lending programme’ and that ‘further reporting will be discontinued’ (World Bank, 2010). Nonetheless, the WB decided to provide financial support of more than a billion

dollars for the EEHP transmission lines to export energy from Sodo, Ethiopia — located approximately 50 km from the Gibe III power station — to Kenya (World Bank, 2012).

The technical distinction constructed by the World Bank and AFDB between the Gibe III dam and the Ethiopia-Kenya transmission line warrants scrutiny in the context of the regulatory architecture examined in Chapter 4 (§3).³ The Conflict Minerals Regulation and the EUDR both demonstrate that the scope of due diligence obligations can be deliberately narrowed through definitional choices — choices that reflect not technical necessity but political and commercial interests. The 50-kilometre separation between the Gibe III power station and the Sodo substation, which the World Bank and AFDB invoked to justify financing the transmission line while formally refusing to finance the dam, is a definitional choice of precisely this kind: a technical boundary drawn to exclude from the scope of accountability a project whose consequences had already been documented and condemned.

2.2.7 Independent Researchers

The Africa Resources Working Group (ARWG) is a cluster of academics from Germany, the United Kingdom, the USA and Canada, with extensive experience in research and policy issues within Ethiopia and the East Africa region. In May 2006, after reviewing the Environmental Impact Assessment released by EEPCo and its related documents, the ARWG concluded:

‘The proposed dam on the Omo River, known as Gibe III, will have major destructive impacts on the Lower Omo River Basin’s fragile semi-arid environment and on the Basin’s indigenous population of at least 200,000. The Ethiopian institutions involved have made no effort to prevent or redress this looming crisis’ (Africa Resources Working Group, 2008, p.1).

In October 2012, Sean Avery released to the Africa Studies Centre of the University of Oxford a study updating and consolidating his earlier findings, released to the AFDB in 2010, on the hydrological impacts on the lower Omo and Lake Turkana. His report is the most complete, detailed and author-

³ The technical distinction constructed by the World Bank and the African Development Bank between the Gibe III hydroelectric dam and the Ethiopia-Kenya electricity transmission line (EEHP) — based on the approximately 50-kilometre separation between the Gibe III power station and the Sodo substation, the point of origin of the transmission line — was formally endorsed by the United States Department of the Treasury in 2012. Independent researchers, NGOs, and the present chapter argue that this distinction is operationally untenable: the hydropower plant has no deliverable product without the transmission line, and the transmission line has no exportable energy without the hydropower plant. The distinction is therefore not a technical finding but a political and financial choice, the effect of which was to allow institutions formally prohibited from financing the Gibe III dam to finance its operational complement.

itative assessment made at that time of the impact of the Gibe III project basin development on the Lake Turkana Basin. Avery's (2012) key findings include:

- **Finding #22:** The Omo-Gibe Integrated River Basin Development Master Plan indicates that by 2024, 32% of the Omo River's inflow to Lake Turkana will be redirected to support plantation needs. Prior research has demonstrated that such a high level of water diversion would result in a significant and lasting decrease in the lake's level, severely impacting Lake Turkana's fisheries. The negative effects on fisheries were not fully investigated.
- **Finding #25:** The revised report on the irrigable area in the Lower Omo region states that approximately 33.5% of the Omo River's annual flow will be needed for irrigation. This diversion is expected to cause Lake Turkana's water level to drop permanently by 13 metres from its current sustainable level, based on average inflows. If water management practices are inefficient, the lake's level could fall by as much as 22 metres. The average depth of the lake is approximately 30 metres.
- **Finding #26:** A 13-metre drop in the lake's water level will reduce its volume to 59% of its current capacity. With inefficient water management, the level drop would be more significant, reducing the lake's volume to 42% of its sustainable capacity. This substantial decrease in volume will not only shrink the fisheries habitat and available biomass but will also increase salinity through the concentration of salts, potentially leading to biodiversity loss — a trajectory comparable to the Aral Sea disaster discussed in Chapter 6.

After six years of field-based research, Professor Claudia Carr — a world-wide expert in natural resources, public policy, and rural systems — published in 2013 a comprehensive study on the environmental and socioeconomic consequences of Omo River Basin development projects and policies, subsequently released in the Springer edition cited here in 2017.⁴ Overcoming restrictions on independent investigators as well as extensive government political surveillance and repression, her main findings include:

⁴ Professor Claudia Carr's research on the Omo River Basin was first published in 2013 as a working paper and policy document circulated through academic and advocacy networks. The edition cited throughout this chapter is the Springer monograph published in 2017: Carr, C. J. (2017). *River Basin Development and Human Rights in Eastern Africa: A Policy Crossroads*. Springer. All page references in the text refer to the 2017 edition. Where the text refers to "2013" it indicates the date of the original field research and first circulation of findings, not the edition cited.

- Catastrophic collapse of survival systems in the region would usher in major new inter-ethnic, cross-border armed conflict as communities are forced to fight over the region's vanishing resources (Carr, 2017, p. 1). Indigenous groups are now vulnerable in the extreme to massive-scale destruction of their survival systems, with region-wide hunger and new mortality caused by the Gibe III dam and its associated agricultural development (Carr, 2017, p. 53).
- The Gibe III dam is located near the Main Ethiopian Rift, the seismically active northern arm of the East African Rift. The GoE undervalued the seismic danger to the planned Gibe III dam, ignoring key geological information. The collapse of the Gibe III dam would result in catastrophic loss of human life, livestock, wildlife and environments in the downstream river and Lake Turkana regions, exceeding the worst known dam failure in history – the Vajont disaster in Italy (Carr, 2017, p. 43).
- A crossroads in public policy had emerged: either pursue a pathway toward massive-scale hunger, regional economic collapse and major new cross-border armed conflict, or suspend the development under way to fully consider human rights and proceed towards a sustainable future for the three nations involved (Carr, 2017, p. 191).

2.3 Human Rights and Environmental Implications

2.3.1 Displacement and Livelihoods

Although Ethiopia is home to more than 86 ethnic groups and may have communities which fulfil the UN Working Group on Indigenous Populations' guiding criteria to be identified as indigenous people, it does not recognise and provide separate and unique legal protection for 'indigenous people' per se. With regard to their land rights, sufficient protection is not afforded. Land is, rather, regarded as 'vacant', 'undeveloped', and 'wasted' in different government policies and expropriated without going through the expropriation proceedings and payment of adequate compensation. The Omo River valley is home to diverse ethnic groups with unique cultures and traditions.

The construction of the Gibe III dam has led to the displacement of numerous communities, disrupted traditional livelihoods and threatened their cultural practices, raising considerable human rights concerns regarding the preservation of cultural heritage.

The indigenous communities in the Omo River Valley, including those of the Bodi, Hamar, Karo, Kwegu, and Mursi tribes, have traditionally relied

on the natural flooding cycle of the river for their agricultural and pastoral practices. The Gibe III dam has disrupted this cycle, affecting agricultural patterns (reduced crop yields and pasture availability), fishing activities, and access to water resources, leading to food insecurity, economic instability, and conflicts over access to scarce yet fundamental resources.

The impacts of displacement fall disproportionately on the most vulnerable within these communities. As established in Chapter 8 (§1 and §3), communities facing land dispossession encounter compounding harms — as members of indigenous groups, as subsistence workers whose livelihoods are directly tied to the natural resource systems being disrupted, and as people whose social and cultural practices are bound to the land and water being destroyed — that standard environmental and social impact assessments are structurally ill-equipped to capture. In the lower Omo Valley, the disruption of the river's natural flooding cycle and the conversion of communal land into sugar cane and cotton plantations have imposed a disproportionate burden on those least able to absorb it: subsistence farmers, pastoralists, and fishing communities whose entire productive systems depend on the seasonal rhythms that the dam has permanently altered. The absence of any disaggregated social analysis in the 2009 ESIA reports is not a technical omission: it reflects the systematic invisibility of affected communities as rights-holders in large-scale infrastructure planning, an invisibility that the intersectional framework developed in Chapter 8 (§1.4) identifies as analytically and ethically unacceptable.

The dam's construction has also led to large-scale irrigation developments, transforming around 100,000 hectares around the Omo Basin into intensive sugar cane and cotton plantations. The transformation of this indigenous land into agro-industrial production reproduces the pattern of state-enabled dispossession examined in Chapter 6 (§3): the state acts not as a regulator of corporate conduct but as an active agent of land conversion. Since 2011, thousands of hectares of savannah, previously inhabited by indigenous peoples, have been expropriated and destroyed to create a hub for agro-industrial exports. The Ethiopian government has leased tribal lands to foreign companies, supposedly to create employment opportunities for the Omo villagers. Employment opportunities were, however, filled predominantly by workers from outside the region, contrary to the stated objective.

The project's impact on health and social services has been mixed. While the promise of improved infrastructure and services exists, the immediate effects of displacement and environmental changes have strained local health

systems and exacerbated existing vulnerabilities, as far as malnutrition and psychological stress are concerned.

2.3.2 Ecological Changes

The interruption of the natural flooding cycle of the Omo River has been detrimental to the ecosystem — and to the populations living in harmony with it — both upstream and downstream of the dam site. Upstream, a 150 km long reservoir will be created, flooding a unique canyon. The reservoir will submerge 500 hectares of agricultural land, 1,500 hectares of riverine forest and 25,000 hectares of deciduous woodland. While the EIA argues that the greenhouse gas emissions from Gibe III would be negligible, no scientific analysis was conducted to estimate potential reservoir emissions. This is of particular concern as the EIA argues that the best mitigation action for removal of the 20.4 million cubic metres of woody biomass in the reservoir area was to take no action, leaving it to decompose in the reservoir and releasing a important amount of greenhouse gas emissions.

Downstream, the changes in water flow have affected biodiversity, fish populations, and the overall health of the ecosystem. These changes have had cascading effects on the local communities that depend on these natural resources, with exponential effects on people farther away from the dam site.

2.3.3 Transboundary Issues

The ecological consequences of the Gibe III dam extend beyond the boundaries of Ethiopia and beyond the immediate vicinity of the dam site, implicating one of the planetary boundaries identified in Chapter 2 (§2): freshwater use. Lake Turkana, the world's largest desert lake and a UNESCO World Heritage site, receives approximately 90 per cent of its inflow from the Omo River. The regulation of that flow by the Gibe III reservoir — and its further reduction through the large-scale irrigation developments associated with the dam — represents a human intervention in a freshwater system of regional ecological significance, with consequences that are, by the assessment of independent researchers, irreversible on any policy-relevant timescale.

Lake Turkana, located downstream in Kenya, has been drastically impacted by the Gibe III project. Reduced water levels and ecological changes have threatened the lake's viability, affecting the livelihoods of communities that depend on it. Pastoralists and fishers living close to the western shore of Lake Turkana are experiencing economic decline due to a substantial drop in lake levels. This has led to the destruction of fish habitats, the loss of lake-

side grazing areas for livestock, and reduced access to potable water. Similar to the situation in the lower Omo Basin, these circumstances are likely to result in widespread hunger and the proliferation of diseases. Additionally, the rapid increase in armed conflict in the cross-border region is anticipated, as ethnic groups compete for diminishing food resources – a trajectory that echoes the Lake Chad history. This has led to transboundary tensions and calls for greater international cooperation and environmental governance.

Avery's (2012) hydrological projections quantify the cost of inaction with precision: a permanent 13-metre drop in Lake Turkana's water level – reducing its volume to 59 per cent of current capacity under average conditions, and to 42 per cent under inefficient water management – represents an irreversible destruction of the ecological and economic basis on which the livelihoods of hundreds of thousands of people depend. As established in Chapter 4 (§1), the cost of environmental inaction is not an abstraction: it is a measurable, foreseeable, and preventable harm. In the case of Lake Turkana, that cost includes the destruction of fisheries habitat, the loss of lakeside grazing areas, the reduction of potable water access, and – as Carr (2017) documents – the acceleration of cross-border armed conflict as communities compete for vanishing resources. These are not externalities in the economic sense; they are the predictable consequences of decisions taken by identifiable actors who had access to the relevant evidence.

A pivotal international player is UNESCO – the United Nations Educational, Scientific and Cultural Organisation – which contributes to peace and security by promoting international cooperation in education, sciences, and culture (United Nations Educational, Scientific and Cultural Organization, 1945). UNESCO promotes knowledge sharing and the free flow of ideas to accelerate mutual understanding.

UNESCO can act in defence of the site by conducting regular monitoring and assessment of the lake's condition, providing technical support and advice to the relevant authorities, and raising international awareness about the importance of preserving Lake Turkana. Additionally, UNESCO can provide financial assistance for conservation efforts and facilitate international cooperation to address potential threats to the lake's integrity. By leveraging its influence as a global organisation dedicated to the preservation of World Heritage sites, UNESCO plays a vital role in defending endangered sites like Lake Turkana.

In June 2018, the UNESCO World Heritage Committee inscribed Lake Turkana as an endangered site due to the impacts of the Gibe III dam. This designation highlights the severe ecological threats posed by the dam and underscores the need for urgent action to mitigate its effects.

2.3.4 Compliance with international standards

A threshold requirement that precedes all other standards is free, prior and informed consent (FPIC) — the right of indigenous and local communities to be consulted and to give or withhold consent before projects affecting their lands and resources are approved or implemented. As established in Chapter 3 (§3), FPIC is a core component of the UNGPs framework and of ILO Convention No. 169 on Indigenous and Tribal Peoples. In the Gibe III case, FPIC was not obtained. Construction began in December 2006 in the absence of any environmental or social impact assessment; the communities of the lower Omo Valley were not consulted at the design stage; and the consultation processes that were subsequently conducted were, according to independent investigators and NGO reports, insufficient, exclusionary, and conducted after the key decisions had already been made. The absence of FPIC is not a procedural technicality: it is the foundational violation from which the subsequent pattern of dispossession, inadequate mitigation, and unredressed harm flows.

The Gibe III project has faced criticism for not fully adhering to international environmental and human rights standards. Questions have been raised about the adequacy of environmental impact assessments, stakeholder consultations, and mitigation measures. The main relevant international standards applicable here are:

- **United Nations Guiding Principles on Business and Human Rights** (UNGPs): These principles outline the responsibilities of businesses to respect human rights and avoid infringing on the rights of others, including conducting due diligence to identify and mitigate human rights risks — examined in Chapter 3 of this volume.
- **Equator Principles (EP4)**: A voluntary risk management framework adopted by international financial institutions for determining, assessing, and managing environmental and social risk in project finance transactions, introduced in Chapter 3 (§3). The EP4 is the latest release, which came into effect for all EP Financial Institutions members on 1 October 2020. These principles are based on the IFC Performance Standards and the World Bank Group's Environmental, Health, and Safety Guidelines.
- **International Finance Corporation (IFC) Performance Standards**: A set of guidelines aimed at ensuring the sustainable and socially responsible aspects of development projects, examined in Chapter 3 (§3) and Chapter 4 (§2). These standards require clients to identify and manage environmental and social risks associated with their projects,

covering labour and working conditions, community health and safety, biodiversity conservation, and climate change mitigation.

- **World Bank Group's Environmental, Health, and Safety (EHS) Guidelines:** Standards developed to assist governments and industries in managing potential environmental and social risks associated with development projects, discussed in Chapter 4 (§2). These guidelines provide a framework for promoting sustainable development and ensuring the protection of human health and the environment.
- **World Commission on Dams (WCD) Guidelines** (see *Glossary*, Box 3): The WCD provides guidelines and recommendations for sustainable and equitable dam development, emphasising the need for environmental and social assessments, stakeholder involvement, and the consideration of alternatives.
- **UNESCO World Heritage Convention** (see *Glossary*, Box 3): As Lake Turkana is a UNESCO World Heritage site, any projects affecting the lake must adhere to the Convention's standards for the protection of cultural and natural heritage.

2.3.5 Corporate Social Responsibility

The role of Salini and other business entities in upholding corporate social responsibility (CSR) is critical. CSR, as established in Chapters 3 and 4 of this volume, refers to a company's commitment to operate ethically, sustainably, and in the best interests of all stakeholders, including employees, communities, and the environment. For Salini, CSR should not have been merely a matter of complying with laws and regulations but of fully embracing the principles of the UN Global Compact, which includes respecting human rights, adhering to fair labour practices, ensuring environmental sustainability, and combating corruption.

In the case of the Gibe III project, Salini has been criticised for contributing to an environmental and human rights disaster. The company agreed to build the dam, which led to major ecological and social disruptions. The contracting process with the Ethiopian government lacked transparency, as it bypassed competitive tendering. Ethical business practices for Salini should have involved transparent reporting, genuine stakeholder engagement, and proactive mitigation of adverse impacts — meaning going beyond mere legal compliance to actively avoid generating profits at the expense of people or the planet. Fully implementing CSR principles requires dedication to integrating ethical considerations into all aspects of business operations, ensuring that development projects do not harm local communities or ecosystems, and fostering long-term, positive relationships with all stakeholders.

2.4 Case Study Conclusion

The Gibe III project underscores the complex interplay between business interests, human rights, and environmental sustainability. While it offers meaningful economic benefits, the social and environmental costs cannot be ignored. This case study has highlighted the need for a balanced approach that respects human rights, protects the environment, and promotes sustainable development. ESIAAs should be mandatory for all green energy projects to identify and address potential harms at the planning stage, with local communities fully engaged in the planning process to balance development goals with social and environmental needs.

By learning from the Gibe III experience, future projects can better navigate these challenges and contribute to more equitable and sustainable outcomes. The lessons learned from this case study are:

1. **Importance of comprehensive impact assessments:** Thorough environmental and social impact assessments are crucial for understanding and mitigating the potential negative effects of large-scale infrastructure projects. These assessments should involve all stakeholders, be conducted transparently, and be completed before project inception – not after construction has begun. Crucially, they must address transboundary effects and the impacts of associated development projects, including irrigation schemes, that are operationally linked to the primary infrastructure.
2. **Stakeholder engagement:** Meaningful engagement with local communities and other stakeholders is crucial. Their input and consent – expressed through free, prior and informed consent (FPIC) processes as established in Chapter 3 (§3) – should be integral to the planning and execution phases to ensure that their rights and interests are protected. Consultation conducted after key decisions have already been made does not constitute genuine engagement.
3. **Transboundary cooperation:** For projects with transboundary implications, international cooperation and governance are necessary. Mechanisms for joint management and conflict resolution can help address the complex challenges that arise when the consequences of infrastructure development in one country fall disproportionately on communities in another.
4. **Corporate responsibility:** Businesses involved in large-scale projects must adhere to ethical standards and practices, which include respecting human rights, conducting due diligence, and implementing robust CSR strategies integrated into business operations. Formal commitments to

sustainability frameworks — such as the UN Global Compact — must be reflected in actual conduct in the field, not merely in sustainability reports.

Concluding Remarks

Land grabbing and the displacement of indigenous communities are among its most consistent features, notably in contexts where legal protections for customary land rights are weak, environmental impact assessments are inadequate, and the financial stakes of large-scale infrastructure are high enough to override procedural safeguards. The Gibe III case illustrates this pattern with considerable precision. A project framed as a contribution to green energy and regional development produced, in practice, the displacement of hundreds of thousands of indigenous people, the disruption of ecosystems spanning two countries, and the near-irreversible alteration of Lake Turkana, a UNESCO World Heritage site, without adequate prior consultation, transparent impact assessment, or meaningful redress for affected communities.

The case also exposes a structural tension that recurs across the green energy transition: the classification of a project as environmentally beneficial at the macro level does not preclude severe localised harm. Hydropower is renewable; the destruction of the Omo River's natural flooding cycle, the dispossession of the Bodi, Hamar, Karo, Kwegu, and Mursi peoples, and the degradation of Lake Turkana's fisheries are not. The designation of a project as green does not suspend the obligations of states and businesses under international human rights law, including the United Nations Guiding Principles on Business and Human Rights, the IFC Performance Standards, and the World Commission on Dams guidelines. In the Gibe III case, each of these frameworks was either inadequately applied or deliberately circumvented.

The Gibe III case demands particular scrutiny of the relationship between green finance and just transition. The project was financed, in part, through instruments and institutions that present themselves as aligned with sustainable development — including state development banks, export credit agencies, and a bond marketed to diaspora investors under the banner of national progress. Yet the communities whose lands, waters, and livelihoods were destroyed to generate that electricity received none of its benefits. The energy produced by Gibe III flows to urban centres and export markets; the costs — ecological, social, cultural, and economic — remain concentrated in the lower Omo Valley and on the shores of Lake Turkana. This is not a just transition. It is a transfer of value from the most vulnerable to the most powerful, con-

ducted under a green label. As established in Chapter 4 (§5), a genuinely just transition cannot displace extraction to new supply chains or new communities; it requires justice for those bearing its costs. The Gibe III case is a precise illustration of what that principle means in practice — and of what happens when it is ignored.

The role of Salini is instructive in this regard. As a signatory of the UN Global Compact and a company formally committed to sustainable development, Salini accepted no-bid contracts that excluded independent oversight, proceeded with construction prior to the completion of environmental and social impact assessments, and subsequently defended the project's record in ways that independent researchers and NGOs demonstrated to be materially inaccurate. The gap between formal commitments to corporate social responsibility and actual conduct in the field represents one of the most measurable accountability failures documented in this chapter.

The Gibe III case also exemplifies the structural pattern identified in Chapter 1 (§5) of this volume: the pattern in which corporations generate lawful profits from activities whose harmful consequences were known, foreseeable, and documented before the activity began. The Africa Resources Working Group had published its findings on the projected impacts of the dam in May 2006 — six months before construction commenced in December of that year. Salini accepted the contract. The Ethiopian government awarded it. The international financial institutions that had formally identified the procedural violations continued to support the project's operational infrastructure. The profits were realised; the damage — to the Omo River's flooding cycle, to the livelihoods of the Bodi, Hamar, Karo, Kwegu, and Mursi peoples, to the ecology of Lake Turkana — remained, and remains. This is not a story of unforeseeable consequences. It is a story of foreseen consequences that were treated as acceptable costs of doing business.

What the Gibe III case ultimately demands is a more rigorous conception of what green development means — one in which the rights of indigenous and local communities are not treated as costs to be managed but as constraints that cannot be waived. Environmental impact assessments must be mandatory, independent, and transboundary in scope. Stakeholder consultation must precede project inception, not follow it. And the financial institutions that enable large-scale infrastructure must apply their own standards consistently, rather than constructing technical distinctions — such as the separation between the Gibe III dam and the Ethiopia-Kenya transmission line — that allow them to fund projects they are formally prohibited from supporting.

The communities whose livelihoods have been destroyed by the Gibe III project have not been passive victims. Those who have organised to resist —

and the defenders who have supported them — face a further layer of corporate and state violence. The forms that violence takes, the legal and extralegal instruments deployed to silence those who speak out, and the responsibilities of businesses and states towards human rights defenders are examined in Chapter 10.

Box 1 - Guiding Questions

1. How does the classification of infrastructure as ‘green’ affect the application of human rights and environmental standards, and under what conditions does that classification function as a mechanism for circumventing procedural safeguards rather than strengthening them?
2. How should states balance national development objectives against the rights of minority and indigenous populations, and what institutional arrangements are necessary to ensure that balance is not systematically resolved in favour of the former?
3. How does the financial architecture of the Gibe III project — including the technical distinction between the dam and the Ethiopia-Kenya transmission line — affect accountability for its social and environmental outcomes?
4. When international development banks withdraw from a project on procedural grounds, what responsibility do they retain for its consequences, particularly when they subsequently finance infrastructure that is operationally inseparable from the project they declined to support?
5. If you were advising an international financial institution considering financing a large-scale infrastructure project in a context of weak governance and indigenous land rights, what procedural safeguards would you require, and how would you ensure they were genuinely applied rather than formally satisfied?

Box 2 - Key facts

- The Gibe III dam, at 243 metres, is the tallest roller-compacted-concrete dam in the world, with an installed capacity of 1,870 MW, nearly doubling Ethiopia’s electricity supply upon completion in 2016.
- Over 500,000 indigenous people depend on the Omo River and Lake Turkana for their livelihoods, including the Bodi, Hamar, Karo, Kwegu, and Mursi peoples, whose agricultural and pastoral practices rely on the river’s natural flooding cycle.
- Construction began in December 2006 despite the absence of any environmental or social impact assessment. Two ESIA reports were released three years later in 2009, and both failed to address transboundary effects or the impacts of associated irrigation projects.
- In June 2018, the UNESCO World Heritage Committee inscribed Lake Turkana as an endangered site, citing the impacts of the Gibe III dam on the lake’s ecology and the livelihoods of dependent communities.
- The Gibe III project was awarded to Salini through a no-bid EPC turnkey contract in July 2006 — the third consecutive no-bid contract between EEPCo and Salini, following Gibe I (1995) and Gibe II (2004) — in violation of Ethiopia’s own procurement regulations, which require international competitive bidding for contracts exceeding USD 0.8 million.
- The World Bank, African Development Bank, and European Investment Bank all withdrew from direct financing of the Gibe III dam due to procedural violations, yet the World Bank and AfDB subsequently approved over USD 1.2 billion for the Ethiopia-Kenya electricity transmission line — operationally inseparable from the dam — on the grounds that the two projects were technically distinct.

Box 3 - Key Concepts: A Working Glossary

Term	Definition
Land grabbing	Large-scale acquisition of land by businesses or governments, typically without adequate prior consultation, compensation, or respect for customary land rights of affected communities; recognised by the European Parliament (2016) as a structural driver of human rights violations
Engineering Procurement Construction (EPC) contract	A turnkey contract in which a single contractor assumes full responsibility for design, procurement, and construction of a project, eliminating independent oversight during the construction period; no-bid EPC contracts are identified by Transparency International (2005) as a structural driver of corruption in large public works
Environmental and Social Impact Assessment (ESIA)	A systematic process for identifying, predicting, and evaluating the environmental and social effects of a proposed project before implementation; required by the World Bank, AFDB, EIB, and IFC Performance Standards as a precondition for project financing
Roller-compacted concrete dam	A type of gravity dam constructed using a dry mix of concrete compacted by heavy rollers; characterised by rapid construction and lower cost relative to conventional concrete dams; the Gibe III dam, at 243 metres, is the tallest of its kind in the world
World Commission on Dams (WCD)	A global commission established in 1998 to develop guidelines for sustainable and equitable dam development, emphasising environmental and social assessments, stakeholder engagement, and consideration of alternatives to large dams
Transboundary harm	Environmental or social damage that crosses national borders as a result of activities undertaken in one state, implicating international obligations of cooperation and governance; in the Gibe III case, the reduction of Omo River flows affects Lake Turkana in Kenya
UNESCO World Heritage Site	A location recognised by UNESCO as having outstanding universal value and protected under the World Heritage Convention; Lake Turkana was inscribed as endangered in 2018 due to the impacts of the Gibe III dam
No-bid contract	A procurement arrangement in which a contract is awarded to a single supplier without competitive tendering; identified as an open invitation to corruption by Transparency International (2005) and a violation of World Bank and AFDB procurement guidelines
Free, Prior and Informed Consent (FPIC)	The right of indigenous and local communities to be consulted and to give or withhold consent before projects affecting their lands and resources are approved or implemented; a core component of the UNGPs framework and ILO Convention No. 169, established in Chapter 3 (§3) of this volume

Chapter 10

Human Rights Defenders, Environmental Defenders, and Civic Freedoms

Case Study: Berta Cáceres

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Nos tienen miedo porque no les tenemos miedo
Berta Cáceres (as cited in Fried, 2025)

This chapter examines the systematic targeting of human rights defenders (HRDs) and environmental defenders by corporate and state actors, situating this phenomenon at the intersection of business activity, civic space, and international human rights law. Drawing on global data compiled by the Business & Human Rights Resource Centre for the decade 2015–2024 and on the reports of the UN Special Rapporteur on Environmental Defenders under the Aarhus Convention, the chapter maps the scale, sectoral distribution, geographic concentration, and structural dynamics of attacks against defenders, documenting more than 6,400 attacks across 147 countries and close to 1,100 killings over the period. The chapter identifies a set of converging trends of particular analytical significance: the weaponisation of legal processes through strategic lawsuits against public participation (SLAPPs); the shrinking of civic space through legislative and rhetorical repression; the disproportionate targeting of Indigenous and women defenders; and the paradoxical role of the green transition as a driver of intensified pressure on defenders, particularly in Indigenous and rural communities. The normative architecture for defender protection is assessed against the structural gap between normative aspiration and operational reality, with impunity identified as the central unresolved obstacle. The chapter concludes with a case study of Berta Cáceres, the Honduran Lenca Indigenous leader assassinated

in 2016 for her opposition to the Agua Zarca hydroelectric dam, whose case illustrates the convergence of corporate power, state complicity, inadequate due diligence, and gendered targeting that the aggregate data describe, whilst also demonstrating the capacity of individual defenders and their movements to generate lasting institutional change.

Keywords: human rights defenders, environmental defenders, green transition, civic space, indigenous peoples’ rights, Berta Cáceres, SLAPPs, impunity.

Learning Objectives

After reading this chapter, you will be able to:
Define human rights defenders and environmental defenders, distinguish between the two categories, and explain the normative frameworks – including the UN Declaration on Human Rights Defenders (1998), the Aarhus Convention (1998), and the Escazú Agreement (2018) – that govern their protection.
Analyse the scale, sectoral distribution, geographic concentration, and structural dynamics of attacks against defenders over the period 2015–2024, drawing on empirical data from the Business & Human Rights Resource Centre and the UN Special Rapporteur on Environmental Defenders.
Evaluate the green transition paradox – the phenomenon whereby policies designed to address the climate crisis simultaneously generate new waves of pressure on environmental defenders – and assess its implications for corporate due diligence and state regulatory obligations.
Apply the analytical framework developed in this chapter to the case of Berta Cáceres, identifying the multiple layers at which corporate due diligence, state protection mechanisms, and international financing standards failed, and assessing the institutional responses that her assassination catalysed.
Critically reflect on the structural conditions – including impunity, civic space restrictions, and the inadequacy of voluntary corporate commitments – that perpetuate violence against defenders, and evaluate what combination of mandatory frameworks, enforcement mechanisms, and cultural change would be necessary to close the accountability gap.

1. The Global Landscape of Attacks Against Human Rights Defenders and Environmental Defenders

The preceding chapter documented a case in which the pursuit of green energy produced the dispossession of over 500,000 indigenous people, the near-irreversible degradation of a UNESCO World Heritage site, and a system-

atic failure of corporate, state, and institutional accountability. It concluded by observing that the communities whose livelihoods were destroyed by the Gibe III project were not passive victims — and that those who organised to resist faced a further layer of corporate and state violence. This chapter examines that further layer: the systematic targeting of the individuals and communities who seek to exercise their rights in the face of corporate harm, and the structural conditions — legal, institutional, and cultural — that make such targeting not merely possible but, in a growing number of contexts, routine. This targeting is not incidental to the extractivist logic identified in Chapter 2 (§3) as structurally incompatible with a safe and just corridor for humanity: it is one of its most consistent operational expressions, the mechanism through which the interests of capital are protected against the claims of those who bear its costs.

The chapter pursues this analysis through two complementary but distinct perspectives. The first — sections 1.1 and 1.2 — maps the global landscape of attacks against human rights defenders (HRDs) and environmental defenders, drawing on the most recent empirical evidence to document the scale, sectoral distribution, geographic concentration, and structural dynamics of the phenomenon. Section 1.1 situates attacks on defenders within the framework of the UN Guiding Principles on Business and Human Rights and the evolving architecture of mandatory human rights due diligence. Section 1.2 addresses the more specific, though substantially overlapping, category of environmental defenders, drawing on the normative framework of the Aarhus Convention and the empirical findings of the UN Special Rapporteur on Environmental Defenders under that Convention, Michel Forst; it is deliberately more granular than section 1.1, reflecting the fact that environmental defenders constitute, empirically, the central and most acutely threatened category within the broader HRD landscape, and that the Aarhus framework provides a set of legally binding obligations and dedicated institutional mechanisms that merit detailed examination in their own right. The second perspective — section 2 — grounds the aggregate analysis in the life and death of Berta Cáceres: the Honduran Lenca Indigenous leader, co-founder of COPINH, and Goldman Environmental Prize laureate who was assassinated in 2016 for her opposition to the Agua Zarca hydroelectric dam on the Gualcarque River, and whose case has become a defining reference point in global debates on corporate accountability, Indigenous rights, and the protection of environmental defenders. Together, the two perspectives are designed to move between the structural and the particular — to show, in the aggregate data, that what happened to Berta

Cáceres was not exceptional; and to show, in her story, what the aggregate data means in human terms.

1.1 Human Rights Defenders and the Business Nexus: Scale, Patterns, and Structural Dynamics

The term human rights defender (HRD) (*see Glossary, Box 3*) was given formal international recognition through the UN Declaration on the Right and Responsibility of Individuals, Groups and Organs of Society to Promote and Protect Universally Recognised Human Rights and Fundamental Freedoms, adopted by the General Assembly in 1998 (A/RES/53/144). The Declaration affirms the right of any person, acting individually or in association with others, to promote and protect human rights and fundamental freedoms through peaceful means. In practice, this definition encompasses an extraordinarily diverse range of individuals and organisations — from trade union leaders and Indigenous land rights campaigners to journalists, lawyers, and community activists — united not by professional identity but by the act of peaceful advocacy for rights. What the past decade has demonstrated, with mounting and incontrovertible empirical force, is that this act of advocacy has become, in a growing and documented number of contexts, a life-threatening activity.

Between January 2015 and December 2024, the Business & Human Rights Resource Centre (BHRRC) recorded more than 6,400 attacks across 147 countries against individuals who voiced concerns about business-related risks or harms — an average of close to two attacks every single day (BHRRC, 2025). In 2024 alone, 660 attacks were documented, underscoring not merely the persistence but the intensification of this phenomenon over time.

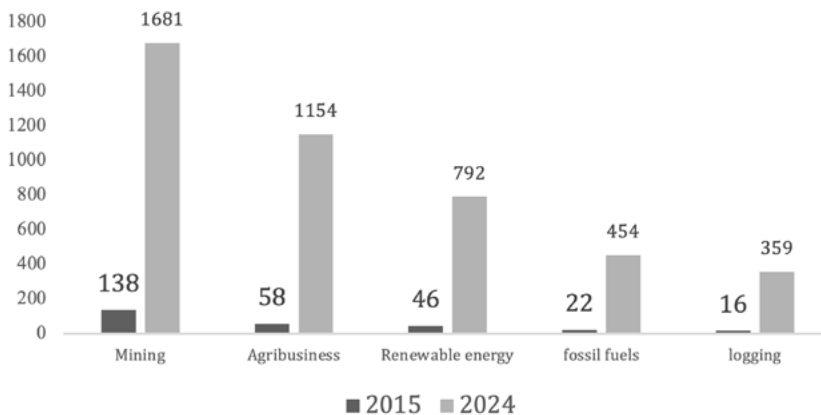
These figures, moreover, represent only the visible portion of a much larger problem — a systematic under-counting that is itself a product of the civic space (*see Glossary, Box 3*) restrictions documented below, since repression silences not only defenders but also the documentation of the repression itself. Given the severity of civic space restrictions in many countries, coupled with security concerns and the absence of systematic government monitoring, a substantial proportion of attacks are never reported or made publicly accessible (BHRRC, 2025). Where few cases are documented, this reflects informational inaccessibility rather than the absence of violence. As the UN Special Rapporteur on Human Rights Defenders, Mary Lawlor, has observed, Indigenous defenders working in isolated or remote areas routinely report that businesses and governments fail to consult with them properly, and that their right to give or withhold free, prior and informed consent — as established in Chapter 3 (§3) and applied in the Gibe III case examined in Chapter 9 (§2.3.4)

— is either manipulated or ignored, with some attacks committed by agents acting for businesses, others by government authorities and businesses acting in concert (as cited in BHRRC, 2025).

1.1.1 Sectoral Distribution and Geographic Concentration

Attacks against HRDs have been recorded in connection with almost every business sector across every region of the world. However, the distribution is far from uniform. Mining, agribusiness, and fossil fuels consistently emerge as the sectors connected with the highest absolute numbers of attacks, accounting for 1,681, 1,154, and 792 documented cases respectively over the decade (BHRRC, 2025). Renewable energy (454 attacks) and logging (359 attacks) complete the five most dangerous sectors — all of which share a direct connection to the accelerating climate crisis and to patterns of large-scale land and resource extraction that frequently bring corporate interests into direct conflict with local and Indigenous communities. Fossil fuels and agribusiness are the top polluting industries.⁵ Mining, agribusiness, fossil fuels, and logging are leading drivers of deforestation, examined in Chapter 7 of this volume.⁶

Figure 1 - Human rights defenders and business (2015–2024)



Source: by the author, based on data from Business & Human Rights Resource Centre (2025)

⁵ Fossil fuels and agribusiness are consistently identified as the top polluting industries across multiple international assessments. For an accessible overview, see: <https://climatetrade.com/the-worlds-most-polluting-industries>.

⁶ The relationship between mining, agribusiness, fossil fuels, and logging as leading drivers of deforestation is examined in Chapter 7 of this volume. On the broader relationship between extractive industries and environmental destruction, see also Chapter 6.

The paradoxical role of the green transition as a driver of increased pressure on defenders — particularly Indigenous and rural communities — is examined in detail in section 1.2.3 below.

Nearly three quarters of all recorded attacks targeted climate, land, and environmental defenders, a proportion that rose to 89% of all HRDs attacked in 2024 alone (BHRRC, 2025). This trajectory reflects a broader and deeply concerning trend: as the stakes of environmental degradation and the green transition have grown, so too has the intensity of efforts to suppress those who document or resist harm.

Geographically, Latin America and the Caribbean alongside Asia and the Pacific have consistently been the most dangerous regions for HRDs raising concerns about corporate harm, jointly accounting for close to three in four of all recorded attacks (BHRRC, 2025). Within Latin America, six countries — Brazil, Mexico, Honduras, Colombia, Peru, and Guatemala — account for 35% of all attacks globally. Honduras presents a especially stark illustration of disproportionate risk: despite comprising just 0.1% of the world's population, 6.5% of all recorded attacks occurred there — a disproportion whose structural roots are examined in detail in section 2.1. In Asia, the Philippines, India, Cambodia, and Indonesia registered the highest absolute numbers of cases. A more recent and less anticipated trend is the marked increase in attacks in the United Kingdom, where 91% of documented attacks have taken the form of judicial harassment, and where the number of cases rose from seven in 2022 to 34 in 2024, largely following the entry into force of the Public Order Act 2023, which significantly expanded police powers to respond to protests (BHRRC, 2025).

1.1.2 Types of Attack and the Weaponisation of Law

The forms of attack directed against HRDs are diverse, cumulative, and mutually reinforcing, targeting individuals, organisations, and communities simultaneously. Over the decade, more than half of all documented attacks — some 3,311 cases — constituted judicial harassment, encompassing arbitrary detention, abusive subpoenas, criminal prosecution, and strategic lawsuits against public participation (SLAPPs) (*see Glossary, Box 3*) (BHRRC, 2025). Since 2015, more than 530 instances of SLAPPs brought or initiated by private actors have been recorded, with Latin America accounting for the highest regional concentration (191 cases). Sixty-nine per cent of these SLAPPs included criminal charges carrying potential long prison sentences, and the mining sector alone was responsible for almost one third of the total (BHRRC, 2025).

The weaponisation of law is not confined to formal legal proceedings. A growing practice of merely threatening legal action — without initiating formal proceedings — has emerged as a tactic to induce self-censorship among defenders. The combined effect of actual and threatened litigation, in contexts where defenders typically lack access to adequate legal resources, produces a profound *chilling effect* (see *Glossary, Box 3*) on civic engagement with environmental and human rights issues — a dynamic explored in greater analytical depth, and with specific reference to the legal mechanisms available under the Aarhus Convention framework, in section 1.2.5 below.

Beyond judicial harassment, defenders face smear campaigns, physical violence, surveillance, arbitrary arrest, forced disappearances, and killings. Close to 1,100 killings were documented over the decade, with 52 murders recorded in 2024 alone (BHRRC, 2025). Indigenous defenders are disproportionately represented among those killed: nearly one in three of those murdered were Indigenous, and one in four attacks on Indigenous defenders ends in murder — nearly double the rate recorded for non-Indigenous defenders. Although Indigenous peoples comprise approximately 6% of the global population, they accounted for 21% of all recorded attacks over the decade (BHRRC, 2025). Women defenders face additional and compounding risks, including gender-specific smear campaigns, sexual harassment and assault, and online violence of a sexualised nature — attacks designed not merely to harm individuals but to stigmatise, isolate, and silence them within their communities (BHRRC, 2025).

1.1.3 High-Profile Projects and the Suppression of Dissent

The highest concentrations of attacks have consistently occurred when people raised concerns about social and environmental risks or harms associated with large-scale business projects, and when governments and/or companies moved to suppress dissent. The projects associated with the greatest numbers of attacks over the past decade include the Lake Albert oil extraction and development project — encompassing the East African Crude Oil Pipeline in Uganda and Tanzania — Inversiones los Pinares in Honduras, the Dakota Access Pipeline in the United States, the Las Bambas Mine in Peru, and the Line 3 Pipeline in the United States and Canada (BHRRC, 2025). In each of these cases, the logic is consistent: community opposition and the exercise of rights to peaceful assembly and public participation were met with coordinated repression involving combinations of state actors, private security forces, and legal mechanisms.

Conspicuously absent from this list — though entirely consistent with its logic — is the Agua Zarca hydroelectric project in Honduras, whose association with the assassination of Berta Cáceres in 2016 is examined in detail

in section 2 of this chapter. The Agua Zarca case embodies, with particular precision, the structural logic that the BHRRC data describe in aggregate: community opposition met with coordinated repression, a corporation with close ties to state security forces, an international financing chain whose due diligence mechanisms proved wholly inadequate, and ultimately a lethal outcome for the defender who led the resistance. It stands as a reminder that the data points enumerated above are not abstractions: each represents a person, a community, a river, a culture that someone considered worth dying — or killing — for.

A specific company was identified in connection with half of all attacks recorded since 2015, with the highest concentrations linked to companies headquartered in the United States, the United Kingdom, and Canada (BHRRC, 2025).

1.1.4 Civic Space Restrictions and Business Risk

A dimension of this phenomenon that merits attention in a business and human rights context — and that is frequently underweighted in corporate risk analysis — is that attacks on HRDs and the erosion of civic freedoms are not merely human rights violations: they are also materially detrimental to business itself. Civic space restrictions create what the BHRRC describes as an information black box, depriving companies and investors of crucial intelligence about potential or actual negative human rights and environmental impacts (BHRRC, 2025). This informational deficit translates directly into elevated operational, financial, reputational, and legal risk.

Under the UN Guiding Principles on Business and Human Rights — the foundational framework for corporate human rights responsibility, examined in Chapter 3 (§3) of this volume — business actors are expected to engage in robust human rights due diligence that identifies and mitigates risks to civic freedoms and HRDs throughout their operations and business relationships (OHCHR, 2011). A company that operates in, or finances projects within, a context where defenders are systematically silenced is not a passive bystander to that silence: it benefits from the informational vacuum that silence creates, and it bears a corresponding responsibility to ensure that its due diligence processes are calibrated to identify and mitigate the risks that vacuum generates. Yet the evidence suggests that most companies in the highest-risk sectors fall significantly short of this standard. Research by the BHRRC found that only 51 out of 284 assessed companies had publicly committed to not tolerating or contributing to attacks against HRDs, and no mining company — the most dangerous sector — met all three benchmark criteria related to HRD protection (BHRRC, 2025).

The implications of this analysis for mandatory human rights due diligence legislation — and in particular for the EU Corporate Sustainability Due Diligence Directive, examined in Chapter 4 (§2) of this volume — are substantial. Mandatory due diligence frameworks represent a structural response to the demonstrated inadequacy of voluntary commitments: they shift the question from whether companies choose to identify and address risks to defenders, to whether they can demonstrate that they have done so. The gap between the scale of documented attacks and the near-universal failure of corporate due diligence in the highest-risk sectors suggests that this shift, however necessary, remains far from sufficient in the absence of robust enforcement mechanisms and meaningful access to remedy for affected communities — a gap directly relevant to the access to remedy framework established under Pillar 3 of the UNGPs, examined in Chapter 3 (§4) of this volume.

1.1.5 Towards Protection: Structural Conditions and Emerging Responses

Despite the gravity and persistence of the trends described above, the past decade has also produced meaningful, if insufficient, progress. Key developments include legally binding regional instruments to protect environmental defenders, the adoption of anti-SLAPP legislation in several jurisdictions, important judicial victories advancing corporate accountability, and — notably — a growing recognition within some business sectors that meaningful engagement with HRDs constitutes not a liability but a strategic and ethical imperative (BHRRC, 2025). The International Council on Mining and Metals committed in 2024 to respect the rights of HRDs in its Mining Principles, and eight of the world's 28 largest wind and solar companies had by the same year adopted public commitments to respect HRDs' rights, compared to none in 2021 (BHRRC, 2025).

These developments, whilst meaningful, must be measured against the scale of the challenge they address. The fact that no mining company — the single most dangerous sector for defenders — met all three benchmark criteria for HRD protection in the BHRRC's 2025 assessment is a sobering reminder of the distance between normative progress and operational reality. Voluntary commitments, however well-intentioned, cannot substitute for the mandatory human rights due diligence frameworks, robust anti-SLAPP legislation, and effective domestic remedies that structural protection of defenders ultimately requires.

Effective protection of HRDs requires, at minimum: the adoption and implementation of legislation recognising the right to defend rights; the repeal of laws that criminalise the exercise of freedoms of expression, assembly, and

association; the passage and enforcement of anti-SLAPP protections; and the integration of HRD protection into mandatory human rights due diligence frameworks, examined in Chapter 4 (§2) of this volume (BHRRC, 2025). For companies, the evidence from the past decade makes a compelling case that treating defenders as partners rather than obstacles – engaging with them early, meaningfully, and continuously – is not only the ethically required course of action but also the most effective means of managing operational, reputational, and legal risk. As the UN Working Group on Business and Human Rights has stated, the most forward-thinking and effective business enterprises will view HRDs as partners, engaging with them early and often, finding that doing so strengthens risk management overall and contributes to building the trust and rule of law on which sustainable business ultimately depends (as cited in BHRRC, 2025). The sections that follow examine, in turn, the specific situation of environmental defenders – a category that is simultaneously the largest subset of HRDs and the one facing the most acute and rapidly intensifying threats – and the institutional architecture that has emerged, with varying degrees of effectiveness, to protect them.

1.2 Environmental Defenders: Frontline Casualties of the Green Economy

1.2.1 A Distinct but Overlapping Category

Whilst human rights defenders constitute a broad category encompassing all those who peacefully advocate for the recognition and realisation of rights, environmental defenders (*see Glossary, Box 3*) represent a distinct – though significantly overlapping – subset whose work centres specifically on the protection of the natural environment, land, water, and the communities whose lives and livelihoods depend upon them. As noted in section 1.1, nearly three quarters of all recorded attacks against HRDs over the period 2015–2024 targeted climate, land, and environmental defenders, rising to 89% in 2024 alone (BHRRC, 2025). Environmental defenders are therefore not a minor subcategory of the HRD landscape: they are, empirically, the central one.

Yet environmental defenders are more than a subcategory of HRDs. They operate at the intersection of multiple legal frameworks – human rights law, environmental law, Indigenous peoples' rights, and international investment law – and they face specific forms of risk that reflect the particular political economy of resource extraction, land use, and the green transition. The normative framework of the Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental

Matters (1998) (*see Glossary, Box 3*) — examined in greater institutional detail in section 1.2.8 below — provides a set of legally binding obligations and institutional mechanisms that are distinct from, and in some respects more specific than, the broader HRD framework. Understanding environmental defenders as a distinct category, whilst recognising their overlap with the broader HRD community, allows for a more precise analysis of both the threats they face and the protective measures available to them.

For the purposes of this chapter, the term environmental defender follows the definition adopted under the Aarhus Convention: any person exercising rights related to access to environmental information, public participation in environmental decision-making, and access to justice in environmental matters (Special Rapporteur on Environmental Defenders, 2025a). This definition is deliberately broad. It encompasses local community members and Indigenous peoples opposing extractive projects on their ancestral lands; environmental journalists investigating corporate malfeasance; lawyers bringing strategic environmental litigation; scientists publishing inconvenient data; and NGO staff organising peaceful protest. What unites them is not professional identity but the act of exercising — or seeking to exercise — rights related to environmental protection (Special Rapporteur on Environmental Defenders, 2025b).

This section draws on three complementary sources: the global data compiled by the BHRRC (2025); the regional consultations conducted by the UN Special Rapporteur on Environmental Defenders under the Aarhus Convention, Michel Forst, between 2022 and 2025 (Special Rapporteur on Environmental Defenders, 2025c); and the Special Rapporteur's thematic report on key trends and threats (Special Rapporteur on Environmental Defenders, 2025b). Together, these sources paint a coherent and troubling picture of a phenomenon that is at once global in reach and profoundly local in its human consequences.

1.2.2 The Architecture of Risk: Who Defends, and Against Whom

Environmental defenders are not a homogeneous group. They include private individuals acting in a personal or professional capacity — local community members, Indigenous peoples, environmental journalists, lawyers, academics, and scientists — as well as associations, organisations, and informal groups ranging from village assemblies to international NGOs (Special Rapporteur on Environmental Defenders, 2025b). Empirical evidence from the BHRRC dataset and the Special Rapporteur's regional consultations consistently indicates that individuals acting in a private capacity — above all those without the institutional protection of a formal organisation — are dis-

proportionately exposed to threats. Local community members and Indigenous peoples opposing large-scale projects in their immediate environment face the highest risk of lethal attack (BHRRC, 2025).

The forms of involvement that expose defenders to retaliation are varied. They include: the collection and dissemination of environmental information, including through photography, sampling, and investigative journalism; participation in formal public consultation processes; the organisation of or participation in peaceful protest; awareness-raising campaigns; and environmental litigation challenging the legality of permits, concessions, or state decisions (Special Rapporteur on Environmental Defenders, 2025b). A notable finding of the Special Rapporteur's consultations is that defenders engaged in peaceful environmental protest are the most frequently targeted, followed by those who publish information about environmental harm and subsequently face criminal prosecution for defamation, and, to a lesser extent, journalists reporting on environmental issues (Special Rapporteur on Environmental Defenders, 2025b).

The perpetrators of attacks are predominantly, though not exclusively, state actors. Analysis of complaints received by the Special Rapporteur under the Aarhus Convention's rapid response mechanism reveals that state bodies and public officials — including prosecutors, courts, law enforcement, and parliamentarians — are implicated in approximately 72% of cases; private companies account for 28% (Special Rapporteur on Environmental Defenders, 2025a). These figures are consistent with the broader BHRRC dataset, which shows that a specific company was identified in connection with half of all attacks recorded since 2015, with the highest concentrations linked to companies headquartered in the United States, the United Kingdom, and Canada (BHRRC, 2025).

Three key industries account for the overwhelming majority of attacks globally: mining, agribusiness, and fossil fuels, with 1,681, 1,154, and 792 documented cases respectively over the decade 2015–2024 (BHRRC, 2025). What is analytically significant — and constitutes one of the most paradoxical findings in the contemporary literature on business and human rights — is the growing prominence of renewable energy (454 attacks) as a sector associated with threats against environmental defenders. This finding, corroborated by the Special Rapporteur's regional consultations across the Arctic, Central Asia, Eastern and South-Eastern Europe, Latin America, Africa, and Asia-Pacific, points to a structural tension at the heart of the global response to climate change, examined in detail in the following section.

1.2.3 The ‘Green Transition’ Paradox: When Climate Policy Silences Defenders

Perhaps the most analytically significant trend to emerge from recent research is what may be termed the green transition paradox: the phenomenon whereby policies and investments ostensibly designed to address the climate crisis simultaneously generate new waves of pressure on environmental defenders, particularly in Indigenous and rural communities in the Global South and in the territories of Indigenous peoples in the Global North. This dynamic is illustrated in Chapter 9 (§2.3.1 and §3) of this volume in the context of the Gibe III hydroelectric project, where the pursuit of green energy produced the dispossession of over 500,000 indigenous people without adequate prior consultation or meaningful redress.

The logic of this paradox is straightforward, even if its consequences are devastating. The rapid scaling-up of renewable energy infrastructure — wind farms, solar installations, hydropower — and the extraction of the critical minerals required for batteries, electric vehicles, and grid storage (lithium, cobalt, copper, nickel, rare earths) requires vast quantities of land. Much of this land is located in areas inhabited by Indigenous peoples or rural communities who depend upon it for their livelihoods, cultures, and physical survival. When states or corporations seek to access these lands — often with the explicit backing of national green transition policies — they frequently do so without meaningful consultation, let alone the free, prior and informed consent (FPIC) required under international law, as established in Chapter 3 (§3) and applied in the Gibe III case examined in Chapter 9 (§2.3.4). Those who resist, or who simply seek to exercise their right to participate in the decisions that affect them, become targets.

This tripartite role of the state (*see Glossary, Box 3*) — simultaneously regulator, developer, and enforcer of compliance — is one of the defining structural features of the contexts in which environmental defenders face the greatest risk, as the case of Honduras examined in section 2 demonstrates with particular force. When the state is at once the author of the policy driving a project, the licensing authority for its development, and the security apparatus deployed to suppress opposition to it, the institutional channels through which defenders might otherwise seek protection are systematically closed.

The Special Rapporteur’s consultation with Indigenous environmental defenders in the Arctic (Oslo, November 2023) provides the most concrete documentation of this dynamic within the Aarhus Convention’s geographic scope. Sami and Inuit participants from Finland, Norway, Sweden, and

Greenland described how the growing demand for renewable energy and minerals for the green transition had created considerable pressure on land use, and therefore on Indigenous peoples' lands, where many mines and wind farms are located (Special Rapporteur on Environmental Defenders, 2025c, para. 19). They noted that wind farms and ore transport had disrupted reindeer migration routes, threatening the very cultures and livelihoods that constitute their identity as peoples. They further observed that the adverse impacts of these industries are particularly difficult to challenge in court or before the competent authorities, because the industries form part of government-led energy transition policies, often operated by state-owned companies (Special Rapporteur on Environmental Defenders, 2025c, para. 20).

This dynamic is not confined to the Global North. Participants in the Latin America and Caribbean consultation (Bogotá, September 2024) described the growing demand for renewable energy and minerals in Northern and Western Europe as imposing a disproportionate burden on local, Afro-descendant, and Indigenous communities in Latin America — communities that, as they pointedly noted, have contributed the least to the climate crisis. They characterised this as green colonialism (*see Glossary, Box 3*): the displacement of the social and environmental costs of the green transition onto the most vulnerable populations in the Global South (Special Rapporteur on Environmental Defenders, 2025c, para. 121). Companies headquartered in Europe had lobbied for the deregulation of their activities, sought the declassification of protected areas, and in some cases used their influence to quash opposition to their projects — including through smear campaigns against critics (Special Rapporteur on Environmental Defenders, 2025c, para. 122).

The same dynamic emerges from the Asia-Pacific consultation (Bangkok, May 2025), where participants specifically criticised companies headquartered in Northern and Western Europe for driving the acceleration of green transition-related projects — including carbon markets, mining, and renewable energy — in ways that systematically violated the right to FPIC of affected Indigenous communities (Special Rapporteur on Environmental Defenders, 2025c, paras. 155–157). The Special Rapporteur's thematic report summarises the structural dynamic with precision: government policies developed to respond to the growing demand for renewable energy and critical minerals have made it increasingly difficult to challenge these projects in court or before the competent authorities, even when they involve potentially irreversible environmental impacts and threats against environmental defenders. At the same time, their 'green' label is often used to ignore the

adverse impact they may have on local communities (Special Rapporteur on Environmental Defenders, 2025b, para. 19).

1.2.4 The Geography of Danger: Regional Patterns

Whilst attacks against environmental defenders have been documented in virtually every region of the world, the distribution is highly uneven. Latin America and the Caribbean, together with Asia and the Pacific, consistently account for close to three in four of all recorded attacks globally (BHRRC, 2025). Within Latin America, six countries — Brazil, Mexico, Honduras, Colombia, Peru, and Guatemala — account for 35% of all attacks globally. The disproportionate concentration of attacks in Honduras — a country representing just 0.1% of the world's population yet accounting for 6.5% of all recorded attacks — reflects the combination of high levels of extractive industry activity, weak rule of law, endemic corruption, and the militarised suppression of dissent that has characterised its political economy since the 2009 coup; these structural roots are examined further in section 2.1.

Within the Aarhus Convention's geographic scope — predominantly Europe and Central Asia — the Special Rapporteur's consultations and complaints data reveal a more varied but equally concerning picture. Defenders in Eastern and South-Eastern Europe and the Caucasus face a particularly high risk of verbal and physical threats, arbitrary arrest, and strategic litigation, often in connection with their opposition to extractive industries or large infrastructure projects. Defenders in Central Asia operate in an environment of dramatically shrinking civic space, characterised by the use of 'foreign agent' legislation, media crackdowns, and the dissolution of NGOs. Even in Western Europe, a troubling trend of judicial harassment — particularly through SLAPPs — has emerged, with the United Kingdom recording a sharp rise in attacks following the entry into force of the Public Order Act 2023 (BHRRC, 2025; Special Rapporteur on Environmental Defenders, 2025b).

The Special Rapporteur's consultations outside the territory of Aarhus Convention parties — in Central and West Africa, Latin America and the Caribbean, East and Southern Africa, and Asia-Pacific — reveal a further dimension of the problem: the extraterritorial reach of corporate actors headquartered within party states. Participants in these consultations consistently described how companies headquartered in Belgium, France, Germany, Luxembourg, Norway, Spain, Switzerland, and the United Kingdom were implicated in threats against environmental defenders in their home countries — not only through direct action, but through the broader enabling environment created by their operations, including the militarisation of op-

eration sites, the use of private security companies, and cooperation with local law enforcement in the suppression of protest (Special Rapporteur on Environmental Defenders, 2025c).

1.2.5 The Weaponisation of Law Against Environmental Defenders

Across all regions, the weaponisation of legal processes emerges as one of the most pervasive and insidious forms of attack against environmental defenders. As formally defined by the Council of Europe, strategic lawsuits against public participation are legal actions that are threatened, initiated or pursued as a means of harassing or intimidating their target, and which seek to prevent, inhibit, restrict or penalise free expression on matters of public interest and the exercise of rights associated with public participation (Committee of Ministers Recommendation CM/Rec(2024)2, as cited in Special Rapporteur on Environmental Defenders, 2025b, para. 53). Building on the introduction of SLAPPs in section 1.1.2 above, this section examines their specific operation against environmental defenders in greater depth. They represent a particularly insidious form of harassment because they deploy the very mechanisms of legal protection — courts, prosecutors, formal proceedings — as instruments of suppression. In this sense, SLAPPs function as a form of reverse lobbying through legal channels: the regulatory and judicial apparatus, designed to protect rights, is redirected to suppress them — a dynamic structurally analogous to the regulatory capture examined in Chapter 6 (§2) of this volume.

The empirical data on SLAPPs is striking. Since 2015, more than 530 SLAPP cases brought or initiated by private actors have been recorded globally, with Latin America accounting for the highest regional concentration (191 cases); 69% of these included criminal charges carrying potential long prison sentences, and the mining sector alone was responsible for almost one third of the total (BHRRC, 2025). The Special Rapporteur's complaints data corroborates this picture: criminal investigations and prosecutions that are retaliatory, punitive, or involve disproportionate sanctions account for 55% of all complaints received, whilst SLAPPs as formally defined account for 20% (Special Rapporteur on Environmental Defenders, 2025a).

Beyond formal proceedings, the Special Rapporteur's regional consultations documented a growing practice of threatening legal action — without initiating formal proceedings — as a tactic to induce self-censorship. In Eastern and South-Eastern Europe and the Caucasus, participants described how the absence of adequate legal safeguards, combined with a general lack of awareness among legal professionals, including judges, left environmental defenders highly vulnerable to legal intimidation (Special Rapporteur on

Environmental Defenders, 2025c, para. 89). Some environmental NGOs had adopted the practice of having all publications reviewed by legal counsel in advance, at significant financial cost, simply to mitigate the risk of defamation proceedings (Special Rapporteur on Environmental Defenders, 2025c, para. 92). This chilling effect on institutional environmental advocacy is, in many respects, as damaging to the democratic fabric as the formal proceedings themselves.

The forms of criminal prosecution used against environmental defenders have also shifted over time in ways that compound the harm. Defenders engaged in peaceful environmental protest who might previously have faced minor public order fines now increasingly face charges of endangering the life of others, sabotage, and sedition — charges that carry not only harsher sentences but greater societal stigmatisation (Special Rapporteur on Environmental Defenders, 2025b, para. 49). In the United Kingdom, the use of civil injunctions issued against ‘persons unknown’ — prohibiting individuals from protesting in designated areas before any specific individual has even been identified — represents an especially extreme extension of this logic, creating a form of pre-emptive criminalisation of environmental activism (Special Rapporteur on Environmental Defenders, 2025b, para. 51).

1.2.6 Gendered Dimensions of Risk

Whilst the threats described above affect all environmental defenders, women defenders face distinct and compounding risks. As noted in section 1.1.2, women defenders are subjected to gender-specific smear campaigns, sexual harassment and assault, and online violence of a sexualised nature — attacks designed not merely to harm individuals but to stigmatise, isolate, and silence them within their communities (BHRRC, 2025). The Special Rapporteur’s regional consultations consistently documented this dynamic across regions and contexts.

In Central Asia, law enforcement officials conducting home visits would warn women environmental defenders that they were ‘bad mothers’ and were damaging their family’s reputation — a form of intimidation that weaponises patriarchal social norms to suppress civic engagement (Special Rapporteur on Environmental Defenders, 2025c, para. 55). In Latin America, smear campaigns specifically portrayed women defenders as irresponsible mothers, and participants reported frequent instances of sexual harassment and assault by company workers and security guards near operation sites (Special Rapporteur on Environmental Defenders, 2025c, paras. 130, 111). In Central and West Africa, sexual assaults of women environmental defenders were described as deliberate tools to intimidate and silence local communi-

ties, and women in specific (Special Rapporteur on Environmental Defenders, 2025c, para. 112).

These gendered forms of attack are not incidental to the broader dynamic of repression — they are an integral part of it. As established in Chapter 8 (§1 and §3), the systematic exploitation of gender inequality as a source of competitive advantage in global supply chains finds its most extreme expression in contexts where women who resist that exploitation — or who resist the dispossession of the communities that supply chains depend upon — become targets of physical and reputational violence. They reflect, and reinforce, the intersection of environmental exploitation with patriarchal power structures, and they help explain why Indigenous women environmental defenders are so consistently over-represented among those subjected to the most extreme forms of violence. The case of Berta Cáceres, examined in section 2, illustrates this intersection with particular force: a woman, an Indigenous leader, and an environmental defender, whose assassination embodied the convergence of corporate power, state complicity, and gendered targeting that the data reviewed here describe in the aggregate.

1.2.7 Shrinking Civic Space as Structural Context

The legislative dimensions of this trend warrant specific attention. During the reporting period 2022–2025, draft or adopted ‘foreign agent’ laws were tabled or enacted in Georgia, Hungary, Kyrgyzstan, and Slovakia — laws that impose burdensome registration requirements, restrict the activities of civil society organisations receiving foreign funding, and carry powerful stigmatising effects (Special Rapporteur on Environmental Defenders, 2025b, para. 21). In Tajikistan, the government dissolved approximately 700 NGOs within an eighteen-month period in 2022–2023 (Special Rapporteur on Environmental Defenders, 2025c, para. 36). In Italy and the United Kingdom, new legislation specifically targeted peaceful environmental protest, introducing new criminal offences, harsher sentencing frameworks, and expanded police powers to respond to demonstrations (Special Rapporteur on Environmental Defenders, 2025b, para. 21). In some European Union member states, authorities have gone so far as to label environmental activism per se as a potential terrorist threat — a characterisation that not only stigmatises defenders but provides a legal and rhetorical framework for the deployment of counter-terrorism apparatus against peaceful civic engagement (Special Rapporteur on Environmental Defenders, 2025b, para. 20).

The rhetorical dimension of this repression is equally significant. Across regions, the Special Rapporteur’s consultations documented a consistent repertoire of stigmatising narratives deployed against environmental defenders:

they are labelled ‘anti-development’, portrayed as ‘foreign agents’ or ‘enemies of the State’, or characterised as dangerous criminals — ‘ecoterrorists’ or practitioners of ‘green jihad’ (Special Rapporteur on Environmental Defenders, 2025b, para. 25). These narratives serve a precise political function: they delegitimise defenders in the eyes of the broader public, transforming those who seek to exercise fundamental democratic rights into threats to national security, economic prosperity, or social order. Once this rhetorical transformation is accomplished, the deployment of legal and physical force against defenders becomes, in the eyes of the state and of much of the public, not merely permissible but necessary.

The consequence of this combined legislative and rhetorical environment is a profound chilling effect that extends well beyond those directly targeted. Environmental defenders across regions described a growing reluctance among ordinary members of the public to engage with environmental NGOs — to sign petitions, make donations, or volunteer — out of concern that doing so might itself attract retaliation (Special Rapporteur on Environmental Defenders, 2025c, para. 93). In Central Asia, participants at the regional consultation expressed concern that the venue itself might be under surveillance, with several declining to speak openly (Special Rapporteur on Environmental Defenders, 2025c, para. 57). This atmosphere of pervasive suspicion represents, perhaps, the most corrosive long-term consequence of systematic repression: not merely the silencing of individual defenders, but the erosion of the broader culture of civic engagement upon which democratic governance and environmental protection ultimately depend.

The Special Rapporteur’s thematic report identifies this structural dimension with notable precision, observing that the shrinking of civic space raises serious concerns regarding the ability of environmental defenders to safely exercise their rights under the Convention and that, in several states, environmental issues have become more politicised and sensitive, with the result that environmental activism has been re-framed — both rhetorically and legally — as a form of threat to national security or social order (Special Rapporteur on Environmental Defenders, 2025b, para. 20). This re-framing is not merely rhetorical: it has material consequences for the legal and institutional frameworks within which environmental defenders must operate, and it shapes the responses — or non-responses — of prosecutors, courts, and law enforcement to the attacks they face.

1.2.8 Towards Protection: The Normative Framework and Its Limits

The international normative framework for the protection of environmental defenders has developed significantly in recent decades, though its

implementation remains deeply uneven. At the global level, the UN Declaration on Human Rights Defenders (1998) provides the foundational normative basis, affirming the right of individuals, groups, and associations to promote and protect human rights and fundamental freedoms — including, by extension, environmental rights. The corporate responsibility to respect human rights — the second pillar of the UN Guiding Principles on Business and Human Rights, examined in Chapter 3 (§3) of this volume — is directly relevant to the corporate dimension of attacks against environmental defenders, requiring companies to conduct human rights due diligence that identifies and mitigates risks to civic freedoms and defenders throughout their operations and supply chains (OHCHR, 2011).

At the regional level, the Aarhus Convention constitutes the most legally binding and institutionally developed instrument for the protection of environmental defenders within its geographic scope. Article 3(8) of the Convention explicitly prohibits the penalisation, persecution, or harassment of any person for exercising their rights under the Convention, and the rapid response mechanism established by the Meeting of the Parties in 2021 — under which Michel Forst serves as Special Rapporteur — provides a concrete institutional mechanism for the investigation of alleged violations and the protection of defenders at risk (Special Rapporteur on Environmental Defenders, 2025a). Outside the Aarhus geographic area, the Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters in Latin America and the Caribbean (Escazú Agreement, 2018) (*see Glossary, Box 3*) provides comparable protections, with Article 9 specifically addressing the protection of environmental defenders.

Development finance institutions (DFIs) (*see Glossary, Box 3*) — state-owned or state-backed entities whose mandate is to promote sustainable development through investment in the Global South — occupy a particularly complex position in this architecture. They are at once subject to their home states' human rights obligations, bound by their own environmental and social safeguard policies, and — as the Agua Zarca case demonstrates in section 2 — capable of remaining engaged in projects associated with lethal threats against defenders long after the warning signs have become visible. Their integration into mandatory human rights due diligence frameworks remains, at the time of writing, incomplete and contested — a gap directly relevant to the access to remedy framework established under Pillar 3 of the UNGPs, examined in Chapter 3 (§4) of this volume, which requires states and businesses to ensure that affected communities have access to effective judicial and non-judicial remedies. The implications of this gap are examined in

Chapter 4 (§3) of this volume in relation to the EU Corporate Sustainability Due Diligence Directive.

The near-total impunity documented here is not merely a failure of criminal justice systems: it is a structural signal that operates with the precision of a price mechanism. As established in Chapter 6 (§2) of this volume, the Expected Cost framework — in which the rational calculus of harm is determined by the probability of enforcement, the magnitude of sanctions, and the temporal discount applied to future liability — explains formally why impunity perpetuates violence: when the expected cost of silencing a defender is, in most cases, negligible, the rational actor — corporate, state, or hired — faces no meaningful deterrent. Research by Global Witness suggests that only approximately ten per cent of those who kill environmental defenders are ever convicted (as cited in Fried, 2025). Raising that expected cost, through mandatory due diligence obligations, anti-SLAPP legislation, and effective criminal accountability for corporate actors, is therefore not merely a normative aspiration: it is the structural intervention necessary to alter the incentive architecture within which violence against defenders is currently rational.

The role of civil society organisations — including investigative journalists, NGOs, and academic researchers — in making corporate and state conduct visible, and in creating the conditions under which accountability becomes possible, is examined in Chapter 6 (§3) of this volume. In the Agua Zarca case, it was sustained civil society pressure — including The Intercept's 2019 investigation — that established the corporate dimension of Cáceres's murder at trial, in the absence of any adequate institutional mechanism for doing so.

Yet there are, nonetheless, meaningful signs of progress. The adoption of the EU Anti-SLAPPs Directive 2024/1069 (European Parliament and Council of the European Union, 2024a) and the Council of Europe's Committee of Ministers Recommendation on SLAPPs (CM/Rec(2024)2) represent important advances in the legal protection of public participation rights, including those of environmental defenders. The International Council on Mining and Metals committed in 2024 to respect the rights of HRDs in its Mining Principles, and eight of the world's 28 largest wind and solar companies had by the same year adopted public commitments to respect HRDs' rights, compared to none in 2021 (BHRRC, 2025). The Special Rapporteur's Guidelines on the Right to Peaceful Environmental Protest and Civil Disobedience, submitted to the eighth session of the Meeting of the Parties in November 2025, rep-

resent a further step in operationalising the protections afforded by Article 3(8) in the specific context of protest and civil disobedience.

These developments, though meaningful, remain insufficient in the face of the scale and intensity of the threats documented above. The structural conditions necessary for meaningful improvement — identified by the BHRRC and the Special Rapporteur alike — include the adoption and implementation of legislation recognising the right to defend rights; the repeal of laws that criminalise the exercise of freedoms of expression, assembly, and association; the passage and enforcement of anti-SLAPP protections; the integration of HRD protection into mandatory human rights due diligence frameworks; and — critically — a fundamental reorientation in the relationship between business actors and the communities affected by their operations, from one of suppression to one of genuine partnership (BHRRC, 2025; Special Rapporteur on Environmental Defenders, 2025b). The structural gap between normative aspiration and operational reality that this section has documented in the aggregate finds its most compelling — and most humanly consequential — illustration in the life and death of a single defender, in a single valley, on a single river. It is to that story that the chapter now turns.

2. Berta Cáceres: Resistance, Assassination, and the Anatomy of Corporate Complicity

The distance between what the normative frameworks examined in section 1 require and what the evidence shows they deliver finds its most humanly consequential — and analytically irreducible — illustration in the life and death of a single defender, in a single valley, on a single river. Berta Cáceres — Lenca Indigenous leader, co-founder of COPINH, Goldman Environmental Prize laureate, and one of the most prominent environmental defenders in Latin America — was assassinated on 2 March 2016 for her opposition to the Agua Zarca hydroelectric dam on the Gualcarque River in Honduras. Her refusal to be intimidated, expressed in the words that became her epitaph, captures something essential about the psycho-political dynamic of environmental defence: that the power of defenders lies precisely in their refusal to yield, and that the violence directed against them is, at its root, an expression of fear on the part of those whose interests they threaten.

2.1 Background: Honduras and the Deadly Geography of Extraction

To understand the life, work, and death of Berta Cáceres, it is necessary first to understand Honduras. Consistently ranked among the most dangerous countries in the world for environmental defenders — accounting for 6.5% of all recorded attacks globally despite comprising just 0.1% of the world's population (BHRRC, 2025) — Honduras presents in concentrated form many of the structural features that render environmental defenders vulnerable across the Global South: extreme inequality, endemic corruption, a history of political instability and state capture by economic elites, a legal and institutional framework systematically inadequate for the protection of civil liberties, and a political economy organised around the extraction and export of natural resources in ways that generate enormous profits for a small elite whilst displacing and dispossessing rural and Indigenous communities.

The figure of 6.5% of global attacks concentrated in a country of 0.1% of the world's population is drawn from the BHRRC dataset, which tracks attacks against defenders raising concerns about corporate harm. Parallel data compiled by Global Witness — which tracks all land and environmental defender killings globally, using a broader methodological scope — recorded 200 killings of land and environmental defenders worldwide in 2016, the year of Cáceres's assassination (Fried, 2025). The difference between these figures reflects distinct methodological approaches rather than contradictory findings: the BHRRC dataset captures a narrower category of corporate-linked attacks across all forms of harm, whilst Global Witness focuses specifically on lethal attacks across the full spectrum of environmental and land defence. Both datasets point consistently to Latin America, and Honduras in particular, as the epicentre of lethal violence against defenders.

The political context in which Cáceres operated was shaped decisively by the 2009 coup that ousted the democratically elected government of Manuel Zelaya. The coup — which Cáceres herself publicly criticised as having been enabled by US diplomatic support — ushered in a government that passed so-called anti-terrorism and intelligence laws that effectively criminalised political protest, placing defenders like Cáceres in still greater jeopardy (Fried, 2025). The institutional frameworks that might otherwise have provided protection were systematically weakened, creating a context of near-complete impunity for those who targeted defenders. It is against this backdrop that the Agua Zarca case must be understood: not as an isolated incident of corporate malfeasance, but as a manifestation of structural conditions that made Cáceres's murder not merely possible, but in a tragic sense predictable.

2.2 Berta Cáceres: A Life in Resistance

Berta Isabel Cáceres Flores was born in 1971 in La Esperanza, in the Intibucá department of southwestern Honduras, at the heart of the territory of the Lenca people — one of the largest Indigenous groups in Central America, with a population of several hundred thousand concentrated in the highlands of Honduras and eastern El Salvador. Her formation as an activist began early. Her mother, a midwife and social worker who would go on to become mayor of La Esperanza and governor of Intibucá, modelled a politics of care and solidarity: taking in Central American migrants, providing medical support, combining the personal and the political in ways that would profoundly shape her daughter's own vocation (Fried, 2025).

While still a student in 1993, Cáceres co-founded the Civic Council of Popular and Indigenous Organizations of Honduras (COPINH — Consejo Cívico de Organizaciones Populares e Indígenas de Honduras), an organisation that brought together Lenca communities across the region to defend their territorial rights, cultural traditions, and political autonomy against the encroachments of the Honduran state and transnational capital. Through COPINH, Cáceres campaigned against illegal logging and deforestation, resisted the construction of river dams, and worked to revive Lenca cultural traditions that had partially fallen out of practice — a form of cultural activism that was inseparable from her environmental and political work (Fried, 2025). She organised student movements, survived multiple death threats, and became one of the most prominent and widely respected Indigenous leaders in Latin America.

Her international profile reached its peak in April 2015, when she was awarded the Goldman Environmental Prize — sometimes called the 'Green Nobel' — for her leadership of a grassroots campaign to prevent the construction of the Agua Zarca hydroelectric dam on the Gualcarque River. In her acceptance speech, Cáceres articulated with characteristic directness the vision that animated her life's work:

"The Gualcarque River has called upon us, as have other gravely threatened rivers. We must answer their call. Our Mother Earth — militarised, fenced in, poisoned, a place where basic rights are systematically violated — demands that we take action." (Cáceres, as cited in Fried, 2025)

Less than a year later, on 2 March 2016, she was shot and killed by assassins who broke into her home in La Esperanza. She was 44 years old.

2.3 The Agua Zarca Dam: Corporate Power, Indigenous Rights, and the Failure of Due Diligence

The Agua Zarca hydroelectric project was a 22-megawatt dam proposed for the Gualcarque River in western Honduras, to be developed by Desarrollos Energéticos SA (DESA), a Honduran private energy company with close ties to the Honduran military and to the powerful Atala family — one of the most influential oligarchic clans in Central American business and politics (Fried, 2025). For the Lenca people, the Gualcarque River is not merely a water source: it is a sacred site, a centre of spiritual practice, a source of food, water, and medicinal plants, and the foundation of a cultural identity built over centuries of relationship with the land. The construction of a dam would have destroyed this relationship irreparably.

The project was financed by a constellation of international actors. The Central American Bank for Economic Integration (CABEI) provided USD 24.4 million in financing; an audit conducted by the Organised Crime and Corruption Reporting Project and Columbia Journalism Investigations subsequently found that the Atala family may have used back channels to secure this financing whilst the bank ignored warnings of the dam's potential environmental and human rights harms (Fried, 2025). Sinohydro, at the time China's largest state-owned dam builder, held an early stake in the project but withdrew in 2013 following an assessment that found Agua Zarca violated the UN Guiding Principles on Business and Human Rights — a finding consistent with the framework established in Chapter 3 (§3), and one that directly vindicated the concerns raised by Cáceres and COPINH (Fried, 2025). Two European development finance institutions — FMO (the Netherlands Development Finance Institution) and Finnfund (the Finnish Fund for Industrial Cooperation) — remained in the project for longer, ultimately withdrawing only after Cáceres's assassination and the subsequent killing of fellow COPINH activist Nelson García, under intense international pressure, though both denied knowledge of DESA's involvement in illegal activities (Fried, 2025).

The Agua Zarca case exposes, with unusual clarity, the multiple layers at which corporate due diligence failed. Sinohydro's early withdrawal on human rights grounds — based on an assessment that found the project violated the UN Guiding Principles on Business and Human Rights — demonstrates that the mechanisms for identifying risk were available and could function when applied with integrity. FMO and Finnfund had access to the same normative framework and to the same evidence of DESA's conduct. The Agua Zarca case is, in this sense, paradigmatic: it illustrates the configuration identified in Chapter 1 (§5) of this volume — in which corporations and financial insti-

tutions generate returns from activities whose harmful consequences were known, foreseeable, and documented before the harm occurred. The warnings were not acted upon; and the cost — Berta Cáceres's life — was borne by the person who had least power to prevent it. This is not a story of ignorance: it is a story of institutional knowledge that did not translate into protective action in the absence of mandatory obligations and enforceable accountability.

Cáceres and COPINH had begun organising opposition to the dam in 2013, mobilising Lenca communities in peaceful protest and blockades that attracted national and international attention. The response of DESA and its allies was systematic and escalating repression. Cáceres's phone was tapped. Men in unmarked cars followed her. She received death threats by telephone and in writing. A fellow COPINH member was killed during a peaceful protest against the dam's construction in 2013. Cáceres herself reported these threats to the Honduran authorities on multiple occasions and sought protection, but was left without effective remedy (Fried, 2025). The company orchestrated an intimidation campaign against her that bore all the hallmarks of what the BHRRC dataset would later categorise as a systematic attack on a high-profile human rights defender opposing a large-scale business project.

The full extent of corporate complicity in her murder emerged only gradually through years of judicial proceedings and investigative journalism. In 2018, seven individuals — characterised in subsequent proceedings as executors and intermediate instigators — were convicted of her murder. In December 2019, *The Intercept* revealed that the men who killed Cáceres were linked through a communications chain to the highest echelons of DESA's leadership (Fried, 2025). In 2021, Roberto David Castillo Mejía — a West Point graduate and the CEO of DESA — was separately convicted as co-author of the assassination, bringing the total number of convictions to eight across two distinct sets of proceedings (Fried, 2025). In February 2025, the Honduran Supreme Court upheld a 30-year prison sentence for former DESA manager Sergio Ramón Rodríguez Orellana, recognising his role in orchestrating her murder (Fried, 2025).⁷ Yet COPINH and Cáceres's surviving family have consistently maintained that the intellectual authors of the assassination — the business

⁷ The eight convictions for the murder of Berta Cáceres span two distinct sets of proceedings: (i) seven executors and intermediate instigators, convicted in 2018; and (ii) Roberto David Castillo Mejía, CEO of DESA, convicted in 2021 as co-author of the assassination. In February 2025, the Honduran Supreme Court upheld a 30-year prison sentence for former DESA manager Sergio Ramón Rodríguez Orellana, confirming his role in orchestrating the murder. COPINH and Cáceres's surviving family have consistently maintained that the intellectual authors of the assassination — the business and political leaders who ordered and ultimately financed it — have not been fully brought to justice.

and political leaders who ordered and ultimately financed it — have not been fully brought to justice.

2.4 The Anatomy of a Pattern: Generalising from Berta's Case

The case of Berta Cáceres is exceptional in its visibility and in the degree to which it galvanised international attention. It is, however, far from unique in its essential structure. As the data reviewed in sections 1.1 and 1.2 make clear, the combination of forces that killed her — a large-scale extractive or energy project; an Indigenous or rural community asserting its rights to land, water, and self-determination; a corporation with close ties to the state; a legal and institutional environment offering impunity to perpetrators and no effective remedy to victims; and an international financing chain whose due diligence mechanisms proved wholly inadequate — constitutes a recurring configuration documented across hundreds of cases in dozens of countries.

Honduras itself offers a further illustration of this logic. The Agua Zarca project sits within a broader geography of violence that the BHRRC data describe in aggregate: a country in which the combination of extractive industry activity, post-coup institutional fragility, and near-complete impunity for attacks on defenders has produced one of the highest per capita rates of defender killings in the world. It joins a list of high-profile projects — the Lake Albert oil extraction and East African Crude Oil Pipeline in Uganda and Tanzania, the Las Bambas Mine in Peru, the Dakota Access and Line 3 Pipelines in North America — in which the structural logic is, as the BHRRC notes, entirely consistent: community opposition and the exercise of rights to peaceful assembly and public participation were met with coordinated repression involving combinations of state actors, private security forces, and legal mechanisms (BHRRC, 2025).

The Cáceres case also brings into sharp relief the intersection of environmental defence with Indigenous rights and with feminist politics. For Cáceres, these were not separate struggles: the defence of the Gualcarque River was simultaneously a defence of Lenca cultural sovereignty, a resistance to capitalist extractivism, and an assertion of women's leadership in a context where both corporate power and community patriarchy conspired to silence women's voices. Her refusal to be intimidated — expressed in the words that became her epitaph — captures something essential about the psycho-political dynamic of environmental defence: that the power of defenders lies precisely in their refusal to yield, and that the violence directed against them is, at its root, an expression of fear on the part of those whose interests they threaten.

The parallels with other struggles are instructive and worth drawing briefly. In Nigeria, Ken Saro-Wiwa — president of the Movement for the Survival of the Ogoni People — was tried and executed in 1995 by the military government of General Sani Abacha, along with eight other MOSOP leaders, for his resistance to the environmental devastation caused by Royal Dutch Shell in Ogoniland. Like Cáceres, Saro-Wiwa combined Indigenous rights advocacy with environmental protection and anti-corporate activism; like Cáceres, he was killed through a conjunction of state and corporate power; and like Cáceres, his death ultimately contributed to a wave of international accountability — Shell settling out of court with the families of the Ogoni Nine on the eve of an impending trial, a settlement the families considered a substantive, if incomplete, victory (Fried, 2025). In Ethiopia, the construction of the Gibe III dam on the Omo River — examined in detail in Chapter 9 of this volume — has been associated with the forced displacement of hundreds of thousands of indigenous people from the Lower Omo Valley, and with the systematic silencing of those who sought to document or oppose it, in a configuration strikingly reminiscent of the Agua Zarca case (International Rivers, 2013). The Gibe III case illustrates the same structural logic with particular force: a project classified as green at the macro level, financed through a deliberately fragmented architecture designed to circumvent the procedural safeguards of international development banks, producing the dispossession of over 500,000 indigenous people without adequate prior consultation, transparent impact assessment, or meaningful redress. The defenders who sought to document or oppose that dispossession faced the same combination of state repression and institutional silence that characterised the response to Cáceres's warnings in Honduras.

In the Occupied Palestinian Territory, environmental and human rights defenders face a context of structural dispossession and militarised occupation in which the very concept of civic space has been comprehensively dismantled, and in which the exercise of any form of rights-based advocacy exposes individuals to arrest, administrative detention, and lethal force — a situation that has prompted the UN Special Rapporteur on the situation of human rights defenders, Mary Lawlor (2024), to describe the conditions facing Palestinian defenders as among the most extreme in the world: “There is literally no place left for human rights defenders and civil society actors to continue documenting the litany of human rights violations to which Israel is subjecting the people of the Gaza Strip”.⁸ This situation is examined in Chapter 12 of this volume

⁸ The UN Special Rapporteur on the situation of human rights defenders cited here is a distinct mandate from that of Michel Forst, who serves as Special Rapporteur on Environmental Defenders under the Aarhus Convention. The two mandates are referenced consistently and

in the context of corporate complicity in occupation and the responsibilities of businesses operating in conflict-affected areas.

The dynamic — corporate interest, state complicity, inadequate due diligence, and the systematic silencing of those who resist — is not a coincidence. It is a structure.

2.5 Legacy: *“They Wanted to Bury Her, But They Didn’t Know She Was a Seed”*

The phrase most frequently associated with Berta Cáceres in death — *“They wanted to bury her, but they didn’t know she was a seed”* — captures something that is both practically and symbolically true. Rather than extinguishing the movement she helped to build, her assassination accelerated it, transforming a regional struggle into a global cause and catalysing a range of institutional responses that have, in measurable ways, strengthened the architecture of protection for environmental defenders worldwide.

At the most immediate level, the international outcry following her death contributed directly to the withdrawal of FMO and Finnfund from the Agua Zarca project, which was ultimately abandoned. This outcome demonstrated — as subsequent cases would confirm — that international financial institutions are not immune to reputational and legal consequences when their investments are associated with the murder of human rights defenders, and that sustained advocacy by civil society organisations can, under the right conditions, translate into tangible changes in corporate behaviour (Fried, 2025). COPINH itself survived the assassination of its co-founder, continuing its advocacy for Lenca territorial rights and the permanent cancellation of all dam concessions on the Gualcarque River. Her daughter, Bertha Zúñiga Cáceres, assumed a leadership role within the organisation, ensuring continuity of the struggle across generations (Fried, 2025).

At the level of international norm development, the Cáceres case contributed to a broader momentum towards stronger protections for environmental defenders that has since found expression in a series of significant institutional advances. The Escazú Agreement — the first regional environmental agreement in Latin America and the Caribbean to include specific provisions on the protection of environmental defenders, adopted in 2018 — was in part a response to the dynamic of violence of which her assassination was the most prominent manifestation. The establishment of the mandate of the Special Rapporteur on Environmental Defenders under the Aarhus Convention in 2022 reflects a parallel recognition within the European institutional framework that specific, dedicated protection mechanisms are necessary. At the

separately throughout this chapter to avoid confusion.

corporate level, the adoption of the EU Anti-SLAPPs Directive (2024/1069) and the growing, though still insufficient, uptake of HRD protection commitments by companies in the mining and renewable energy sectors represent further, if partial, advances.

The Cáceres case also transformed the discourse on business and human rights in ways that remain directly relevant to students and practitioners in this field. It demonstrated, with painful force, the inadequacy of voluntary due diligence frameworks in the face of determined corporate malfeasance: both Sinohydro's early withdrawal on human rights grounds and FMO and Finnfund's belated exit from the project suggest that the mechanisms for identifying and acting on human rights risks were available but not adequately applied — at least not until the cost of inaction, in the sense established in Chapter 4 (§1) of this volume, became internationally visible (Fried, 2025). It highlighted the critical role of independent investigative journalism — The Intercept's 2019 investigation into the communications chain linking the killers to DESA's leadership was instrumental in establishing the corporate dimension of the murder at trial. And it illustrated the structural limits of criminal justice as a mechanism of accountability in the absence of broader institutional reform: whilst the conviction of eight individuals across two sets of proceedings represents a significant judicial achievement by the standards of a field in which impunity is the norm, the fact that DESA continues to hold an exclusive concession over the Gualcarque watershed until 2059 suggests that the structural conditions that generated the violence remain substantially intact (Fried, 2025).

Most profoundly, perhaps, the legacy of Berta Cáceres is one of moral directness in the face of structural complexity. In a world in which the language of sustainable development, the green transition, and corporate social responsibility is routinely deployed to obscure the ongoing dispossession and repression of the communities most directly affected by the global economy's relationship with the natural world, her life and death insist on a set of uncomfortable but indispensable questions. Who benefits from the extraction of the resources that power the global economy? Who bears the costs? Whose rights are systematically subordinated to whose profits? And what is the responsibility — moral, legal, and institutional — of the states, financial institutions, and corporations that enable, finance, or simply fail to prevent the violence through which those questions are answered in practice?

3. Concluding Reflections

The juxtaposition of aggregate data and individual narrative in this chapter is deliberate. Statistics on the frequency and distribution of attacks against defenders provide an essential macro-level picture of the phenomenon, but they risk abstracting it from the human reality that underlies it. The case of Berta Cáceres restores that reality: it reminds us that behind every data point in the BHRRC dataset, behind every complaint logged with the Special Rapporteur, behind every killing recorded by Global Witness, there is a person — a life, a community, a river, a culture — whose defence of the most fundamental human interests brought them into collision with the most powerful forces of the contemporary global economy.

At the same time, the aggregate data contextualises the individual case in ways that are analytically essential. Without it, the murder of Berta Cáceres might be read as a tragic but exceptional event — the product of particular circumstances, a particular country, a particular corporation. Read against the backdrop of more than 6,400 documented attacks across 147 countries, a near-daily average of two attacks for a decade, close to 1,100 killings, and an 89% concentration of attacks on environmental defenders in 2024 alone, it becomes something different: a particularly visible and internationally resonant instance of a structural violence that is global, systematic, and deeply embedded in the political economy of resource extraction and the green transition.

The implications for business and human rights scholarship and practice are clear, even if they are uncomfortable. Companies operating in — or financing operations in — contexts where environmental defenders are at risk are not passive bystanders to that risk. Through their investment, financing, and operational decisions; through their due diligence processes and their failures thereof; through their lobbying activities and their relationships with state security forces; and through the impunity they implicitly or explicitly enable, they are active participants in the creation of the conditions that generate violence against defenders. The corporate responsibility to respect human rights — the second pillar of the UN Guiding Principles, examined in Chapter 3 (§3) of this volume — is unambiguous on this point: it extends to the actual and potential adverse impacts of a company's activities and business relationships throughout its value chain, and includes the impacts on the civic freedoms and rights of human rights defenders.

What the evidence reviewed in this chapter makes equally clear is that the voluntary frameworks that have, to date, governed corporate behaviour in this domain are wholly insufficient to the scale and urgency of the problem. The

fact that no mining company met all three benchmark criteria for HRD protection in the BHRRC's 2025 assessment; the fact that the majority of state parties to the Aarhus Convention responded late or not at all to the Special Rapporteur's letters of allegation; the fact that DESA continues to hold a concession over the Gualcarque watershed until 2059, more than nine years after its CEO was convicted of co-authoring the murder of the woman who opposed it — these are not isolated failures. They are symptoms of a structural deficit in the accountability architecture for business and human rights that mandatory due diligence legislation, anti-SLAPP instruments, and strengthened international monitoring mechanisms are beginning — but only beginning — to address. The mandatory frameworks examined in Chapters 3 (§3) and 4 (§2) of this volume represent the most significant institutional response to this deficit yet attempted; their adequacy must ultimately be measured against the standard set by the cases documented here.

The structural conditions documented in this chapter — impunity, shrinking civic space, the weaponisation of law, the inadequacy of voluntary corporate commitments — are not immutable features of the global economy. They are the product of choices: choices made by states that enact laws criminalising peaceful protest rather than protecting those who make it; by corporations that deploy legal mechanisms to silence critics rather than engaging with them; by financial institutions that pursue returns without adequate scrutiny of the human costs; and by consumers and citizens whose demand for the products of extractive industries creates the economic incentives that drive those choices. The corridor of possibility identified in Chapter 2 of this volume — the safe and just space within which human development can be sustained without transgressing planetary boundaries — requires, as a precondition, that the people who defend that space are able to do so safely. Civic space is not merely a human rights issue: it is the enabling environment within which the free choice to pursue a just transition becomes possible at all. Where defenders are silenced, that choice is made for everyone — and it is made, consistently, in favour of the most powerful.

These are the questions that Berta Cáceres asked, in the Gualcarque valley, with her life. They are the questions that thousands of defenders — named and unnamed, known and unknown — continue to ask, at enormous personal cost, in the highlands of Honduras and Ethiopia, in the river deltas of Nigeria and the Philippines, in the wind-swept reindeer pastures of northern Scandinavia, and in the occupied territories of Palestine. They are, ultimately, the questions that this chapter has sought to frame, and that the field of business and human rights exists, in its best moments, to help answer.

As the UN Working Group on Business and Human Rights has stated, the most forward-thinking and effective business enterprises will view HRDs as partners, engaging with them early and often, finding that doing so strengthens risk management overall and contributes to building the trust and rule of law on which sustainable business ultimately depends (as cited in BHRRC, 2025). The case of Berta Cáceres demonstrates, with tragic force, what happens when they do not.

The forms of violence documented in this chapter — physical, legal, rhetorical — share a common logic: the suppression of those who seek to make corporate and state conduct visible. In the cases examined here, that suppression has been carried out through assassins, courts, and legislatures. Chapter 11 examines a further dimension of the same logic: the deployment of digital technologies — surveillance systems, data extraction, and artificial intelligence — as instruments of corporate and state control over workers, communities, and defenders. The tools change; the structural relationship between power, profit, and the silencing of dissent does not.

Box 1 - Guiding Questions

1. Despite formal recognition through the UN Declaration on Human Rights Defenders of 1998, why has effective protection remained so consistently inadequate, and what structural conditions explain the gap between the normative recognition of defenders' rights and their operational protection?
2. What does the concentration of targeted attacks on environmental defenders suggest in terms of the relationship between capital, the state, and nature?
3. Is 'green colonialism' an inevitable outcome of global climate policy, or can resource extraction be decoupled from community exploitation?
4. Does impunity exist by design to protect economic interests?
5. The case of Berta Cáceres demonstrates that voluntary due diligence frameworks were available but not adequately applied by FMO and Finnfund until after her assassination. What combination of mandatory obligations, enforcement mechanisms, and institutional incentives would be necessary to ensure that development finance institutions act on human rights risk before — rather than after — lethal harm occurs?

Box 2 - Key facts

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Between 2015 and 2024, more than 6,400 attacks against human rights defenders were recorded across 147 countries, averaging close to two per day.

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Mining, agribusiness, and fossil fuels were the three most dangerous sectors, accounting for 1,681, 1,154, and 792 documented attacks respectively.

→

Honduras, with 0.1% of the world’s population, accounted for 6.5% of all recorded attacks globally.

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Roberto David Castillo Mejía, CEO of DESA, was convicted in 2021 as co-author of Berta Cáceres’s assassination — one of the few cases globally in which corporate leadership has been held criminally accountable for the killing of a defender.

→

In 2024 alone, 89% of all attacks against human rights defenders targeted climate, land, and environmental defenders — a proportion that has risen consistently over the decade 2015–2024, reflecting the intensification of pressure on those who resist the social and environmental costs of the green transition.

→

Renewable energy is now the fourth most dangerous sector for environmental defenders globally, with 454 documented attacks over 2015–2024 — a finding that directly challenges the assumption that green infrastructure is inherently aligned with human rights.

→

Despite eight convictions across two sets of proceedings for the murder of Berta Cáceres, DESA continues to hold an exclusive concession over the Gualcarque watershed until 2059 — illustrating that criminal accountability for individual perpetrators does not, in itself, dismantle the structural conditions that generate violence against defenders.

Box 3 - Key Concepts: A Working Glossary

Term	Definition
Human rights defender (HRD)	Any person who, individually or in association with others, acts peacefully to promote or protect human rights and fundamental freedoms; formally recognised through UN General Assembly Resolution A/RES/53/144 (1998); the category encompasses trade unionists, Indigenous land rights campaigners, journalists, lawyers, and community activists, united not by professional identity but by the act of peaceful advocacy
Environmental defender	Any person exercising rights related to access to environmental information, public participation in environmental decision-making, and access to justice in environmental matters, as defined under the Aarhus Convention; a distinct but substantially overlapping subset of HRDs, empirically constituting the largest category of those attacked globally
Strategic lawsuit against public participation (SLAPP)	A legal action threatened, initiated, or pursued as a means of harassing or intimidating its target, seeking to prevent, inhibit, restrict, or penalise free expression on matters of public interest and the exercise of rights associated with public participation (Council of Europe, CM/Rec(2024)2); characterised by the deployment of legal mechanisms as instruments of suppression rather than legitimate dispute resolution

Aarhus Convention	The Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (UNECE, 1998); the most legally binding and institutionally developed international instrument for the protection of environmental defenders within its geographic scope; Article 3(8) explicitly prohibits the penalisation, persecution, or harassment of any person for exercising their rights under the Convention
Escazú Agreement	The Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters in Latin America and the Caribbean (2018); the first regional environmental agreement in Latin America and the Caribbean to include specific provisions on the protection of environmental defenders; Article 9 specifically addresses their protection
Impunity	The absence of accountability for violations of human rights, including attacks against defenders; research by Global Witness suggests that only approximately 10% of those who kill environmental defenders are ever convicted; identified as a structural signal that communicates to potential perpetrators that the cost of silencing a defender is, in most cases, negligible
Green colonialism	The displacement of the social and environmental costs of the green transition onto the most vulnerable populations in the Global South — particularly Indigenous and rural communities — who have contributed least to the climate crisis; introduced as an analytical category by participants in the Special Rapporteur's Latin America and Caribbean regional consultation (Bogotá, 2024)
Civic space	The enabling environment — legal, institutional, and cultural — within which individuals and organisations can exercise their rights to freedom of expression, assembly, and association; its systematic erosion through legislative repression, rhetorical stigmatisation, and physical violence constitutes one of the defining structural features of the contemporary landscape of attacks against defenders
Chilling effect	The deterrent impact on the exercise of rights — particularly freedom of expression and public participation — produced by the threat or reality of legal, physical, or reputational retaliation; in the context of environmental defence, it extends beyond those directly targeted to suppress broader civic engagement with environmental and human rights issues
Development finance institution (DFI)	A state-owned or state-backed entity whose mandate is to promote sustainable development through investment, typically in the Global South; in the context of this chapter, FMO (Netherlands) and Finnfund (Finland) are examined as DFIs whose prolonged engagement with the Agua Zarca project despite mounting evidence of human rights violations illustrates the structural gap between voluntary due diligence commitments and operational investment decisions

Tripartite role of the state	The structural configuration in which a state simultaneously acts as the author of the policy driving a project, the licensing authority for its development, and the security apparatus deployed to suppress opposition to it; identified as one of the defining structural features of the contexts in which environmental defenders face the greatest risk
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Chapter 11
**Digital Freedom, Artificial Intelligence,
Automation and Impacts on Human Rights
and the Future of Work**
Case Study: Huawei's role in Uganda's digital future

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Visibility is a trap

Michel Foucault, *Discipline and Punish* (1975)

The most dangerous form of control is the one that appears as a service
Shoshana Zuboff, *The Age of Surveillance Capitalism* (2019)

The digital transformation of the global economy has generated far-reaching and intersecting challenges for human rights protection. This chapter examines three dimensions of this transformation: the weaponisation of surveillance technologies as instruments of state repression, the erosion of decent work through platform-based digital economies, and the emergence of technocolonialism as a framework for understanding how digital infrastructures reproduce patterns of dependency and control in the Global South. Drawing on international human rights law, the UN Guiding Principles on Business and Human Rights, and empirical evidence from multiple jurisdictions, Section I maps the structural mechanisms through which corporations act as indispensable enablers of rights violations, whether by supplying surveillance hardware to repressive regimes or designing algorithmic architectures that systematically deny workers legal protection. Section II applies these dynamics through a focused case study of Huawei's

Safe Cities initiative in Uganda, demonstrating how foreign-supplied digital infrastructure, debt-linked financing, and weak regulatory capacity combine to facilitate authoritarian governance while insulating corporate actors from accountability. The chapter concludes that the digital transformation of the global economy does not generate human rights challenges incidentally: it generates them structurally, as a function of business models designed to externalise costs onto surveilled populations, platform workers, and digitally dependent states — and that closing the resulting accountability gap requires a transition from voluntary to binding governance frameworks adequate to the scale and structural character of these challenges.

Keywords: surveillance capitalism; technocolonialism; algorithmic management; digital labour platforms; artificial intelligence; decent work; safe cities; Uganda.

Learning Objectives

After reading this chapter, you will be able to:
Explain the concept of surveillance capitalism and analyse how digital technologies — including facial recognition, algorithmic management, and predictive analytics — are deployed as instruments of state repression and corporate control, with reference to the normative framework of the UN Guiding Principles on Business and Human Rights.
Evaluate the impact of digital labour platforms and algorithmic management on the four pillars of decent work as defined by the ILO, identifying the structural mechanisms through which platform companies extract economic value whilst denying workers legal protection.
Apply the concept of technocolonialism to the case of Huawei’s Safe Cities initiative in Uganda, analysing how foreign-supplied digital infrastructure, debt-linked financing, and weak regulatory capacity combine to facilitate authoritarian governance whilst insulating corporate actors from accountability.
Assess the adequacy of existing governance frameworks — including the EU AI Act, the forthcoming ILO Convention on Decent Work in the Platform Economy, and the CS3D — in addressing the human rights challenges generated by digital technologies, identifying their structural limitations and the populations they fail to reach.
Evaluate the conditions under which digital technologies can serve as instruments of emancipation rather than control, and assess what structural reforms — at the level of international regulation, corporate accountability, and democratic governance — would be necessary to widen the corridor of possibility in the digital age.

1. The Digital Rights Landscape: Between Opportunity and Control

The preceding chapter documented the systematic targeting of human rights defenders and environmental defenders by corporate and state actors — through assassins, courts, and legislatures. It concluded by observing that the forms of violence directed against defenders share a common logic: the suppression of those who seek to make corporate and state conduct visible. This chapter examines a further dimension of that logic: the deployment of digital technologies — surveillance systems, data extraction, and artificial intelligence — as instruments of corporate and state control over workers, communities, and the defenders who resist them. The tools change; the structural relationship between power, profit, and the silencing of dissent does not. What changes, in the digital domain, is the scale, the speed, and the invisibility of the control — and therefore the difficulty of identifying, documenting, and challenging it. The extractivist logic identified in Chapter 2 (§3) as structurally incompatible with a safe and just corridor for humanity extends, in the digital domain, to the expropriation of data, attention, and labour from populations with the least capacity to resist it.

The rapid expansion of digital technologies, artificial intelligence (AI), and platform-based business models is reshaping the relationship between corporate profit-making and human rights protection across multiple governance levels. A growing body of interdisciplinary scholarship highlights a dual dynamic: while digital innovation can enhance access to information, participation, and economic opportunity, it simultaneously generates new risks for fundamental rights, notably in contexts of weak regulation and asymmetric power between corporations and individuals (Land & Aronson, 2020; Leslie et al., 2021).

Digital freedom constitutes a central dimension of this transformation. The proliferation of data-driven business models has intensified material concerns around privacy, surveillance, and freedom of expression. Scholars note that digital infrastructures enable both state and corporate actors to monitor individuals at unprecedented scale, often affecting journalists and human rights defenders (Jain, 2025; Głowacka et al., 2021). Evidence from regional consultations with environmental defenders — documented in Chapter 10 (§1.2.3) — further indicates that digital tools are increasingly used to track, intimidate, or silence activists, above all in extractive or high-conflict sectors. These dynamics raise fundamental questions about the protection of civil and political rights in digital spaces, including the right to privacy, freedom of expression, and freedom of assembly.

At the same time, the rise of AI introduces governance challenges that cut across multiple domains. AI systems are increasingly deployed in decision-making processes affecting employment, access to services, and public administration. While such systems can increase efficiency, they also risk reinforcing discrimination, opacity, and lack of accountability, especially when based on biased datasets or opaque algorithms (Leslie et al., 2021; Lane, 2023). The literature increasingly frames these risks within broader debates on AI colonialism (*see Glossary, Box 3*), emphasising how resource extraction, data exploitation, and environmental costs disproportionately affect communities in the Global South (Regilme, 2024).

In sum, the intersection of digital freedom, AI, and automation with human rights reveals a contested landscape in which corporate practices generate both opportunities and risks. Two domains — the weaponisation of surveillance technologies in contexts of state repression, and the transformation of labour through platform-based digital economies — are particularly illustrative of this complexity and are examined in the sections that follow.

1.1 Surveillance Technologies as Instruments of Repression: Targeting Rights and Victims

Among the most acute manifestations of AI's human rights impact is the weaponisation of surveillance technologies by state and non-state actors to repress dissent, enforce discriminatory control, and systematically target vulnerable populations. This phenomenon extends far beyond commercial data exploitation: in conflict zones and occupied territories, it takes the form of an architecture of domination in which AI-driven tools become instruments of structural oppression. What Shoshana Zuboff (2019) termed surveillance capitalism (*see Glossary, Box 3*) — a profit-making system predicated on expropriating users' data — assumes, in these contexts, a qualitatively different and more violent dimension: the dispossession not merely of data, but of fundamental human dignity and freedom.

Contemporary surveillance systems deployed in repressive contexts typically combine biometric identification, facial recognition, behavioural analysis, and predictive analytics into integrated platforms capable of monitoring entire populations in real time, often without consent and without meaningful legal oversight (Głowacka et al., 2021). The resulting infrastructure enables authorities to identify, track, detain, or pre-emptively neutralise individuals perceived as threats — not on the basis of demonstrated conduct, but through algorithmic inference and racial or political profiling.

The human rights implications are severe and multi-layered. At the individual level, pervasive surveillance erodes the right to privacy (UDHR, Art. 12; ICCPR, Art. 17), chills freedom of expression and assembly (UDHR, Arts. 19–20), and restricts freedom of movement (UDHR, Art. 13). At the systemic level, when surveillance is applied discriminatorily — targeting specific ethnic, religious, or national groups — it reinforces and deepens structural inequality, constituting a form of institutionalised discrimination prohibited under the International Convention on the Elimination of All Forms of Racial Discrimination (1965, Art. 5). Scholars and human rights organisations have documented how this *chilling effect* (see *Glossary, Box 3, Ch. 10*) produces self-censorship and social withdrawal, fragmenting communities and silencing legitimate political participation (Al Jazeera, 2023; Amnesty International, 2022).

Private corporations are deeply implicated in these dynamics. The development, sale, and operational deployment of surveillance technologies by profit-driven firms — often with inadequate due diligence — places them in potential complicity with human rights violations under the UN Guiding Principles on Business and Human Rights, examined in Chapter 3 (§3) of this volume (OHCHR, 2011). Companies supplying hardware, software, or data infrastructure to repressive regimes may contribute to violations even when their technologies were not originally designed for such purposes. As Amnesty International (2024) documents, neither the indirect nor intermediary nature of a business relationship exempts a company from its responsibility to respect human rights throughout its value chain. The failure to conduct meaningful human rights due diligence in high-risk environments is not a compliance gap: it reflects the Expected Cost logic identified in Chapter 6 (§2), in which the rational calculus of harm is determined by the probability of enforcement — and in the absence of binding accountability mechanisms, that probability remains negligible.

A particularly instructive case is the Israeli surveillance apparatus deployed in the Occupied Palestinian Territories (OPT), most notably through the interconnected systems known as Wolf Pack, Blue Wolf, and Red Wolf.¹ Developed with strong ties between the Israeli military — particularly Unit 8200 — and the private cybersecurity sector, these systems represent a paradigmatic example of what critics describe as the *Palestine Laboratory* (see *Glossary, Box 3*): a live testing ground for surveillance and control technologies, whose lessons are subsequently exported commercially to governments

¹ The broader context of corporate complicity in the Israeli occupation of Palestinian territories — including the political economy of the surveillance apparatus examined in section 1.1 — is analysed in Chapter 12 of this volume.

worldwide (Buonsanti et al., 2025; Al-Haq, 2019). As of mid-2023, Israel remained the leading global exporter of spyware and digital forensic technologies, having exported USD 6.5 billion in cybersecurity products in 2016 alone (Carnegie Endowment for International Peace, 2023; Al-Haq, 2019). The country's expertise in controlling Palestinian land and people has become, paradoxically, a commercial selling point on global markets.

The Wolf Pack database aggregates comprehensive biometric and biographical data on Palestinians, including residency information, family connections, permit status, and security classifications. Its mobile interface, the Blue Wolf application, enables Israeli soldiers to instantly retrieve and update individual profiles via smartphone, with military units incentivised to maximise data collection — including images of children and the elderly — through a competitive rewards system (Amnesty International, 2022). The Red Wolf system, identified in Hebron in 2022, represents a further escalation: an AI-driven facial recognition platform integrated with behavioural analysis algorithms and predictive analytics, deployed at checkpoints to determine — automatically and often without human oversight — whether individuals should be permitted to pass, questioned, or detained (Buonsanti et al., 2025). Red Wolf's colour-coded output — green for clearance, yellow for questioning, red for arrest — reduces human beings to algorithmic classifications operating without transparency, without appeal mechanisms, and without judicial oversight.

The discriminatory design of these systems is explicit: only Palestinians are required to use the checkpoints where Red Wolf operates; Jewish settlers are exempt. The database draws exclusively on Palestinian biometric data, rendering racial profiling not an incidental flaw but a structural feature. Palestinians who lack existing biometric records are forcibly enrolled, stripping them of any agency over their personal data (Amnesty International, 2022). As one Palestinian resident told Al Jazeera (2023), “people do not socialise or move as freely as they would — they do not live normally as they would.” This chilling effect constitutes a measurable curtailment of fundamental rights, extending well beyond the checkpoint into the fabric of social life.

Private companies, including the Chinese manufacturer Hikvision, the Dutch firm TKH Security, and the Israeli company Corsight — whose facial recognition software is used by Unit 8200 in combination with Google Photos — have supplied essential components of this surveillance infrastructure (Amnesty International, 2022; Buonsanti et al., 2025). When approached by Amnesty International, neither Hikvision nor TKH Security provided satisfactory responses regarding their human rights due diligence, illustrating

the persistent gap between corporate responsibility frameworks and actual business conduct in high-risk environments (Amnesty International, 2024).

Comparisons with analogous systems — such as China’s Integrated Joint Operations Platform in Xinjiang, examined in Chapter 5 (§2.2) — underscore the global dimensions of this phenomenon (Human Rights Watch, 2021a). In both contexts, big data and AI are deployed to monitor and pre-emptively suppress marginalised populations, normalising surveillance as a security technology while obscuring its function as an instrument of political control. In both cases, technologies are developed and refined in collaboration with private industry, raising fundamental questions about corporate responsibility when commercial products serve as enabling infrastructure for systemic rights violations.

Surveillance technologies deployed in repressive contexts thus represent a consequential failure of existing governance frameworks to constrain the misuse of digital technologies. Civil society organisations and human rights researchers have called for bans on facial recognition in public spaces as a minimum regulatory floor (Bacciarelli, 2023). Addressing these challenges requires not only stronger international regulation of the development and export of surveillance tools, but also robust corporate accountability mechanisms, mandatory human rights due diligence, and meaningful remedies for affected communities — the very populations who bear the highest costs of unregulated technological innovation.

1.2 The Gig Economy, Algorithmic Management, and the Future of Decent Work

Alongside state-sponsored surveillance, the transformation of labour through digital platforms constitutes the second major site where AI and automation intersect with fundamental human rights. The phenomenon of *digital labour platforms* (DLPs) (see *Glossary, Box 3*) has generated structural and systemic challenges to the concept of decent work (see *Glossary, Box 3*) as formulated by the International Labour Organization (ILO) — a concept encompassing four strategic pillars: promoting fundamental principles and rights at work; fostering employment; strengthening social protection; and improving social dialogue and tripartism (ILO, 1999; ILO, 2008). The gendered dimension of platform labour — documented in Chapter 8 (§1 and §3) — is reproduced and amplified in the *gig economy* (see *Glossary, Box 3*): women, migrants, and workers from the Global South are disproportionately concentrated in the lowest-paid and most precarious segments of the platform labour market.

The market value of the labour platform economy — variously termed the gig economy or sharing economy — increased from USD 7.1 trillion in 2018 to USD 10.2 trillion in 2023, with the number of active platforms growing from 193 in 2010 to 1,070 in 2023 (ILO, 2025a). Digital labour platforms have emerged as a structural feature of contemporary labour markets across the European Union. As of 2024, more than 28 million people were engaged in platform work across EU member states — a figure that underscores both the scale and the policy urgency of the sector (Fredman et al., 2025). DLPs operate by establishing virtual connections between service requesters and workers, spanning three main models: web-based platforms for remote crowd work (such as Amazon Mechanical Turk or Clickworker); location-based or app-based platforms for on-demand offline services (such as Uber, Deliveroo, or Glovo); and content platforms (such as YouTube), where creators monetise their intellectual output through advertising and subscriptions (Ceretelli, 2026; De Stefano, 2016).

1.2.1 Fundamental Principles and Rights at Work

The first pillar of decent work — the core labour standards (CLSs) — is systematically jeopardised by the operation of DLPs. The 1998 ILO Declaration on Fundamental Principles and Rights at Work, subsequently expanded in 2022 to include the right to a safe and healthy working environment, establishes a universal floor of protection applicable to all workers regardless of employment status (ILO, 1998; Politakis, 2023). In the gig economy, the CLSs most at risk are the freedom of association, the prohibition of discrimination, and the right to safe and healthy working conditions (Ceretelli, 2026).

Algorithms lie at the heart of these violations. Their design features and source code are rarely disclosed to workers, making it practically impossible to challenge discriminatory outcomes (Rani & Furrer, 2021). Both direct and indirect forms of discrimination are pervasive: assigning higher ratings to workers available on festive days or at night disproportionately affects religious minorities and caregivers, constituting indirect religious and gender discrimination; studies on micro-task crowd work document the systematic exclusion of workers from developing countries from the most complex and remunerative assignments (Ceretelli, 2026). The rating systems applied by algorithms create a conditional relationship between workers and platforms, compelling workers to remain perpetually available — on weekends, in adverse weather, in poor health — in order to maintain their ranking. Disconnecting during demand peaks risks the unmotivated deactivation of accounts, depriving workers of income and social protection simultaneously

(De Stefano & Aloisi, 2018). The promise of flexibility, in practice, proves deceptive.

Physical and psychological health risks are equally documented. The European Agency for Safety and Health at Work (2022) has identified occupational hazards specific to platform work, including stress, burnout, physical risks for on-demand workers, and the psychological consequences of constant algorithmic monitoring. Roggensack et al. (2024) further note that digital infrastructure enables corporations to monitor individuals at an unprecedented scale, eroding the boundary between supervision and surveillance.

1.2.2 Employment Creation and Fair Remuneration

The second pillar of decent work — employment creation accompanied by fair wages — presents a deeply contradictory picture in the gig economy. On one hand, DLPs have expanded access to the labour market, enabling participation by people with disabilities, single parents, and young professionals unable to access traditional employment structures (Berg, 2016). On the other hand, working in the gig economy is by definition precarious: DLPs encourage over-recruitment as a market strategy, making the digital workforce a fungible resource in which workers' competition becomes vital, and the only way to avoid replacement is full subordination to the platform (van Doorn, 2017).

Wages are structurally inadequate. According to ILO data, the average hourly wage on web-based platforms amounts to USD 3.4, with 66% of workers earning less and 37% relying on crowd work as their primary income source — with direct consequences for their capacity to afford social protection and health coverage (Berg, 2016; ILO, 2021). On-demand workers fare similarly, with hourly earnings fluctuating between USD 1 and USD 4 in most countries (ILO, 2021). Several compounding factors explain this wage poverty: commission fees are predominantly unloaded on workers; digital workers spend approximately twenty minutes per hour in unpaid invisible labour — managing payments, searching for tasks, or building qualifications — that goes entirely unremunerated (Toxtli et al., 2021); on-demand workers incur unrefunded work-related costs such as transport and fuel; and on certain platforms, consumers may reject work products without motivation or payment obligation, opening to what has been termed wage-theft (Silberman et al., 2010; Ceretelli, 2026).

1.2.3 Social Protection and Social Dialogue

The third and fourth pillars of decent work — social protection and social dialogue — are most severely undermined by the legal qualification

that DLPs unilaterally impose on their workforce. Terms of Service (ToS) agreements typically classify digital workers as independent contractors or self-employed, thereby excluding them from the employment-contingent protections that domestic legislation provides: pension contributions, unemployment insurance, invalidity coverage, sick leave, and maternity protection (Ceretelli, 2026; Behrendt et al., 2019). Social protection thus becomes an individual responsibility for workers who are structurally unable to afford it.

This legal qualification is frequently fictitious. DLPs exert indirect control through reputation systems — consumer reviews directly influence workers' algorithmic ratings and future assignment opportunities — and often direct control through precise operational instructions, the provision of working tools, and the real-time monitoring of performance (De Stefano, 2017; Kocher, 2022). Web-based platforms may even take regular screenshots of workers' displays to verify dedication to assigned tasks (De Stefano, 2017). In this context, domestic jurisdictions have increasingly opted for the requalification of platform workers as employees on the basis of the primacy of facts principle enshrined in ILO Recommendation 198 (ILO, 2006). Landmark rulings include the California Supreme Court's *Dynamex* decision (2018), the French Cour de Cassation's *TakeEatEasy* judgment (2020), the Spanish Tribunal Supremo's *Glovo* ruling (2020), and analogous decisions in Ireland, the Netherlands, Germany, and Italy (Ceretelli, 2026). The UK Supreme Court's ruling in *Uber BV v Aslam* (2021) further confirmed the trend, albeit with inconsistencies — Uber drivers were qualified as workers whilst Deliveroo riders were not.

The absence of collective bargaining rights compounds these vulnerabilities. Because most platform workers are formally classified as self-employed, they are excluded from trade union membership and collective bargaining processes, leaving them without institutional voice in the determination of their working conditions. The Inter-American Court of Human Rights, in its Advisory Opinion OC-27/21 (2021), emphasised that the protection of freedom of association and collective bargaining “must be understood in consideration of the fact that labour relations are in constant flux due to a variety of factors, including the use of new digital technologies in the workplace,” and that states must adopt legislative measures that “respond to the challenges and opportunities brought about by digital transformation of work, including work over digital platforms.”

1.3. *Converging Risks: Corporate Accountability at the Intersection of Surveillance and Labour*

The two phenomena examined in the preceding sections — the weaponisation of surveillance technologies and the erosion of decent work in the gig economy — are not merely parallel developments. They share structural features that reveal systemic dynamics in how digital technologies, deployed in the pursuit of profit, generate human rights violations at scale.

In both contexts, private corporations act as indispensable enablers of rights violations: surveillance technology companies supply the hardware and software that make state-sponsored repression technologically feasible; platform companies design *algorithmic management* (see Glossary, Box 3) that systematically extract economic value from workers while denying them the legal protections that make such extraction accountable. In both cases, corporate conduct is obscured by layers of technical complexity, contractual indirection, and jurisdictional fragmentation that existing governance frameworks have proven ill-equipped to penetrate. And in both cases, the populations bearing the greatest costs — Palestinian communities in the OPT, gig workers in the Global South, migrants, women, and other vulnerable groups in platform labour markets — are those with the least access to legal remedy.

The UN Guiding Principles on Business and Human Rights (OHCHR, 2011) establish that companies have a responsibility to respect human rights throughout their operations and value chains, to conduct meaningful human rights due diligence, and to contribute to effective remedy where violations occur. Yet as the cases examined in this chapter demonstrate, voluntary frameworks have proven systematically insufficient. Neither Hikvision nor TKH Security provided satisfactory due diligence responses when confronted by Amnesty International (2024); DLPs continue to unilaterally impose ToS agreements that misclassify workers and strip them of fundamental protections, relying on jurisdictional arbitrage and the difficulty of legal enforcement to insulate their business models from accountability (Ceretelli, 2026). These failures are not isolated: they reflect a structural dynamic in which corporate conduct is shielded by the very complexity of the governance environments in which it operates.

Nowhere is this dynamic more acutely illustrated than in the OPT, where the business activities examined in this chapter — the development, sale, and deployment of surveillance technologies — are not incidental to a broader political context, but functionally constitutive of it (Sa'di, 2016).

As the UN Special Rapporteur on the situation of human rights in the Palestinian territories occupied since 1967 has documented, the economy sustaining these activities is inseparable from a process that began with the illegal occupation of Palestinian territories in 1967, evolved into a system of segregation and apartheid of the Palestinian population, and has, since October 2023, entered what the Special Rapporteur characterises as an economy of genocide: a phase in which corporate and financial actors are implicated not merely in occupation and apartheid, but in the material conditions enabling the destruction of Palestinian life itself (Amnesty International, 2023; Albanese, 2025). The full implications of this trajectory for business and human rights law, and for the international legal responsibility of both states and corporations, are examined in Chapter 12 of this volume.

This convergence points toward the urgent need for binding multilevel governance frameworks that integrate international human rights law, mandatory corporate accountability mechanisms, and inclusive participation by affected communities and human rights defenders (Land & Aronson, 2020; Leslie et al., 2021). The EU AI Act (Regulation 2024/1689), which introduces harmonised rules on AI across high-risk application domains, represents a partial step in this direction, though its labour-specific provisions remain limited in scope and effectiveness (Cristofolini, 2024).

The EU Directive on *improving working conditions in platform work* introduces a set of measures designed to increase transparency in algorithmic management within human resources, requiring that automated decision-making systems operate under the supervision of qualified personnel and that workers retain the right to challenge decisions made by automated processes. The Directive further addresses the question of employment status classification for platform workers, establishing a legal presumption of employment — triggered by the presence of indicators of control and direction — as a mandatory element of member states' legal frameworks, thereby enabling workers to access the labour rights to which they may be entitled (European Parliament and Council of the European Union, 2024b).

The forthcoming ILO Convention on Decent Work in the Platform Economy, if ratified widely, would establish a meaningful international floor for platform workers' rights. Yet both instruments leave consequential gaps — above all in their capacity to reach the most vulnerable workers in the Global South, where the combination of weak regulatory capacity, corporate power asymmetries, and the global architecture of platform labour creates conditions of acute exploitation (Regilme, 2024; ILO, 2021).

Ultimately, the digital transformation of economy and society does not generate human rights challenges incidentally or as unintended side effects. It generates them structurally, as a function of business models designed to externalise costs — whether onto surveilled populations deprived of privacy, movement, and dignity, or onto gig workers deprived of wages, security, and collective voice. Recognising this structural dimension is the first condition for designing governance responses adequate to the scale of the challenge.

2. Case Study: Safe Cities and Technocolonialism — Huawei's Role in Uganda's Digital Future²

Throughout history, societies have developed tools and technologies to improve daily life, enhance productivity, and expand human knowledge. Technology is often celebrated as a positive force for development. The spread of the internet, mobile devices, and online platforms increases global connections, reduces geographical barriers, and creates new opportunities for education, innovation, and participation in the worldwide economy. For many countries, above all in the Global South, technological development is viewed as a key instrument for modernisation and social advancement (OECD, 2016a, pp. 5–6). Despite these benefits, the misuse of technology produces consequential negative outcomes that are often overlooked. Digital surveillance, data exploitation, loss of privacy, environmental harm, and persistent digital divides³ demonstrate that technological progress is uneven and does not affect all societies equally. In the current global order, technological infrastructures become strategic assets that governments and corporations use to pursue profits, power, and social control (Batok, 2024). Many scholars refer to this phenomenon as *technocolonialism* (see *Glossary, Box 3*): a contemporary form of domination in which control is exercised not

² Section 2 of this chapter — Case Study: Safe Cities and Technocolonialism — Huawei's Role in Uganda's Digital Future — is based on a group assignment prepared by Adriana Naviglio, Giulia Bosco, Valentina Frau, and Francesca Simonato, master's students at the University of Padova, within the Master's Programme in Human Rights and Multi-level Governance. The Author gratefully acknowledges their contribution in documenting this case study. The analytical framing, integration with Section 1, and editorial adaptation are the responsibility of the chapter author.

³ The digital divide refers to the inequality between those who have access to and the capacity to use digital technologies and those who are excluded from them, creating disparities in social, economic, educational, and cultural spheres. For a standardised definition, see Eurostat (2023).

through direct territorial occupation, but instead by digital infrastructures, data extraction, and technological dependency.

The terminology surrounding these dynamics remains a subject of contention in the literature. Concepts such as techno-, digital-, and data-colonialism are sometimes used interchangeably, yet several scholars argue that they capture different dimensions. As Sreemala (2025) explains in her review of Madianou's *Technocolonialism: When Technology for Good is Harmful*, technocolonialism should be distinguished from digital and data colonialism. The latter centres on the idea of capital, extractivism, and labour, highlighting the discontinuity between historical and digital colonialism in the contemporary world. The former focuses on the continuity and persistence of colonial structures into the present.

By contrast, authors such as Muldoon and Wu (2023) emphasise that digital colonialism generates structural power imbalances through the extractive practices embedded in modern technologies. Drawing on theories of extraction and extractivism, they demonstrate how global capitalism has historically relied on the exploitation of raw materials and plantation economies, enabling wealthy countries and multinational corporations to exploit developing nations for profits (Kponyo et al., 2024). This dynamic now extends into the digital sphere through data extractivism (Muldoon & Wu, 2023). Consequently, the Global South is often reduced to a testing ground for new technologies, a supplier of raw materials, and a source of cheap labour. Although critiques of technocolonialism often focus on historically Western powers, contemporary forms of digital domination extend well beyond the West. China, for instance, engages in such practices, exporting digital infrastructures and security technologies that reproduce similar patterns of influence.

For this study, technocolonialism is adopted as a broader framework that includes digital colonialism and captures the structural continuities shaping present-day technological domination. In light of these concerns, this case study focuses on the relationship between Uganda and Huawei, asking: how do Safe Cities (*see Glossary, Box 3*) surveillance systems deployed in African countries – specifically the Huawei Safe Cities projects in Uganda – reflect contemporary forms of technocolonialism, and what are their implications for human rights? To answer this question, the case study first details the theoretical basis of technocolonialism, then examines Huawei's position within this framework, and finally analyses the Ugandan Safe Cities projects.

2.1 Case Study Description

2.1.1 Huawei as a Global Infrastructure Power

Huawei is a Chinese global leading supplier of telecommunications and digital services that, due to its dominant position, has a strong ability to influence the ways through which digital technologies interact with and impact governance, human rights, and other sectors, such as data control, public security, and the economy (Effoduh, 2025).

In the context of business and human rights, the company publicly commits to corporate social responsibility, compliance with national regulations, and data protection, and affirms that it respects internationally recognised human rights. According to its statements, Huawei aims to ensure that its business activities “do not cause or contribute to any adverse impact on human rights” (Huawei, n.d.-a).

Moreover, Huawei explicitly addresses the sourcing of raw materials used in its electronic components and has released public statements on due diligence, one specifically concerning the responsible supply chain of minerals. Huawei follows the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas, which promotes transparency and respect for human rights through the sustainable sourcing of minerals and metals in conflict-affected and high-risk areas (OECD, 2016b).

In addition to its supply-chain commitments, Huawei has developed a series of human rights policies that constitute the guiding principles of the company’s operations at the global level. These policies align with the UN Guiding Principles on Business and Human Rights, examined in Chapter 3 (§3) of this volume, and extend to Huawei’s partners and suppliers through the Huawei Supplier Social Responsibility Code of Conduct, which focuses on relevant human rights areas, such as labour, business ethics, and health (Huawei, n.d.-b).

Despite its public commitment to the respect for human rights, the company’s transparency and accountability remain limited and reveal contradictions. Independent investigations demonstrate inconsistencies between Huawei’s declared human rights standards and the real implications of its technologies, above all concerning privacy violations, cybersecurity, surveillance, and control over personal data (Effoduh, 2025; Gravett, 2020). Huawei’s practices often reflect China’s geopolitical interests, which are known for raising concerns about inadequate safeguards against rights violations.

Its *modus operandi* plays a decisive role in Huawei's worldwide expansion and is based on a combination of hardware, software, and operational services, often financially supported — at least partially — by China, although the company denies direct governmental control (Gravett, 2020). Huawei's operating model in Uganda reproduces, in the digital domain, the double-profit architecture identified in Chapter 9 (§2.2.2): the People's Republic of China simultaneously profits from the financial instruments used to fund the infrastructure and from the export of the goods and services that constitute it. The same state-corporate nexus that enabled the labour transfer programmes in the Xinjiang Uyghur Autonomous Region, examined in Chapter 5 (§2.2), underpins Huawei's global expansion: in both cases, the Chinese state acts simultaneously as regulator, financier, and commercial beneficiary.

Huawei is active in 170 countries and, since the early 2000s, its digital infrastructures have been rapidly expanding across the African continent. Africa is its most consolidated market (Huawei, 2025a), and most notably for the deployment of digital public-security systems. Its strategic policies are structured as a three-pillar framework aimed at the development of the project All Intelligence for New Africa: New Value, New Infrastructure, and New Ecosystem. The first pillar introduces five inclusive solutions (Inclusive Connectivity, Inclusive Education, Inclusive Government Service, Inclusive Security, and Inclusive Energy). The second pillar combines networks, cloud, artificial intelligence, and devices to deliver end-to-end offerings. The last builds an open and collaborative community of partners, customers, and talent to promote a faster shift to digital and intelligent operations in Africa (Huawei, 2025a). These tools provide essential connectivity. At the same time, they raise serious concerns regarding privacy, accountability, surveillance, and data governance. These risks are most visible in Huawei's expanding Safe Cities systems across Africa.

2.1.2 Huawei's Safe Cities in Uganda

Huawei positions itself as a key driver of urban modernisation in Africa, offering solutions such as traffic-control systems, energy-efficient buildings, healthcare platforms, and expansive digital networks (Warner & Ajibade, 2024). Central to Huawei's vision of smart governance and sustainable urban growth are its Safe Cities initiatives, which the company promotes as a technologically integrated model for enhancing public safety and overall wellbe-

ing. By combining 5G networks⁴, artificial intelligence, IoT devices⁵, cloud computing⁶, and big data analytics, Huawei presents an urban management infrastructure designed to optimise city life (Huawei, 2025b). However, the real-world implementation of these initiatives often diverges from this narrative because they rely on expansive surveillance infrastructures, including CCTV cameras, facial recognition systems, crowd-monitoring technologies, noise sensors, and social-media tracking tools, claiming these measures are necessary to improve security and urban efficiency (Hillman & McCalpin, 2019). As a result, what begins as an urban development project is increasingly evolving into a consequential reconfiguration of state power and citizens' daily lives.

Uganda provides one of the clearest examples of how Huawei's Safe City model has been implemented in Africa. The partnership between the Ugandan government and Huawei began in 2014, when Huawei donated twenty CCTV cameras (valued at approximately USD 750,000) to the Ugandan government (The East African, 2022), marking the initial phase of what would later expand into a nationwide surveillance programme. Following President Yoweri Museveni's 2017 directive to intensify digital surveillance of political opposition, Uganda's communications regulator asked Huawei to assess the feasibility of establishing a centralised surveillance centre, in coordination with national security agencies (Parkinson et al., 2019). In 2018, Kampala formalised this relationship by signing a USD 126 million Safe City contract with Huawei, resulting in the installation of approximately 5,000 surveillance cameras across highways and major urban areas. These cameras, equipped with facial recognition technology, transmit data through fibre-optic networks to eleven regional monitoring centres and a centralised police data hub in Kampala, enabling real-time surveillance and data analysis at a national scale (The East African, 2022). As a result of this expanding role, Huawei has become Uganda's largest digital technology supplier (Kirabo, 2019).

⁴ In Uganda, the deployment of Huawei's 5G technology enables real-time data transmission, offering speeds up to 100 times faster than 4G and reducing latency from an average of 60 milliseconds to approximately 5 milliseconds.

⁵ Huawei IoT (Internet of Things) devices are physical objects with sensors, software, and internet connectivity that allow them to collect, send, and share data for monitoring and management purposes.

⁶ Huawei Cloud Computing is a platform that allows users to store, manage, and analyse data over the internet.

2.1.3 Uganda's Safe Cities: Players and Drivers

An interconnected network of actors supports the implementation of Uganda's Safe Cities. At its core, there is Huawei, which provides surveillance hardware and software. On the Ugandan side, the Government and Presidency serve as the primary contracting authorities, whilst the Uganda Police Force (UPF) is the primary operational authority responsible for running the Safe City system through its national and regional command centres. These centres function as hubs where surveillance data is collected and analysed. To build the technical capacity required to operate this infrastructure, the UPF sent dozens of officers to China for specialised training in surveillance technologies. Huawei executives presented surveillance systems that the company has deployed in other countries, providing Ugandan officials with direct exposure to how such technologies could be implemented in practice (Parkinson et al., 2019). A security official explained: "They teach us to use spyware against security threats and political enemies" (Parkinson et al., 2019). The UPF has expanded the system's scope by integrating it with databases managed by other state institutions, including the Uganda Revenue Authority (URA), the National Identification and Registration Authority (NIRA), the National Information Technology Authority (NITA-U), and the Immigration Office. This integration allows police to cross-reference surveillance data with personal identification records, tax information, and immigration data, effectively transforming the Safe City infrastructure from an autonomous policing tool into a centralised platform for population control (Privacy International, 2020).

The Safe City project is largely financed through external credit arrangements that bind Uganda to long-term debt obligations closely tied to Huawei's proprietary technologies (Nkwanyana, 2021). Under the agreement, the Ugandan government paid USD 16.3 million upfront, whilst most of the remaining cost was financed through a USD 104 million loan from Standard Chartered Bank, as documented in submissions to a parliamentary committee (Parkinson et al., 2019). Local subcontractors and telecommunications firms also support the installation and maintenance of the system, further rooting the infrastructure within Uganda's domestic economy. Meanwhile, civil society organisations act as independent observers, raising concerns about governance, accountability, and human rights implications.

Taken together, these actors and relationships demonstrate that Huawei's Safe City initiative in Uganda functions not merely as a political and economic ecosystem that consolidates security, finance, and governance, but as a single, technology-driven surveillance framework. Beyond the roles

played by individual actors, the adoption of Huawei's Safe City system is shaped by deeper structural, political, economic, and legal drivers that explain why the Ugandan government invests in systems that can harm human rights. Structurally, Uganda's scarcity of capital creates dependence on foreign loans and ready-made technology, fostering technocolonial reliance. Politically, the Ugandan government prioritises maintaining power over protecting freedoms, creating a high demand for mass monitoring systems. Economically, companies like Huawei exploit this demand to expand their market, sell proprietary systems, and secure long-term profits. Legally, weak regulations and oversight further facilitate state abuse and corporate irresponsibility, whilst international standards remain largely symbolic. Together, these drivers and the network of actors create systemic technological dependency, posing serious risks to human rights.

2.2 Findings

The evidence that follows is intended to directly address the research question by showing how Uganda's Huawei Safe Cities initiatives operate in practice and how they shape digital governance. Whilst these initiatives have not yet produced full-scale technocolonial domination, they nonetheless reveal emerging forms of technocolonial influence. The Ugandan case highlights foreign-controlled infrastructures, debt-linked financing, technical dependencies, and the deep integration of Huawei technologies into government institutions. These dynamics make Uganda's surveillance system both technologically and financially reliant on Huawei, enabling the Ugandan government to deploy the system against its own citizens, extending surveillance far beyond public safety objectives. Uganda's documented history of surveillance abuse and political repression (Human Rights Watch, 2021b) intensifies these concerns. By equipping authorities with centralised monitoring tools and integrated data systems, Huawei has effectively facilitated a government known for silencing dissent in expanding its control over citizens, suppressing opposition, and consolidating authority. Evidence further indicates that Huawei's involvement in political surveillance extends beyond infrastructure provision. In a political environment characterised by weak oversight and concentrated executive power, allegations of direct collaboration between Huawei staff and Ugandan security services further intensify concerns about the company's active participation in political monitoring (The East African, 2022).

A 2019 Wall Street Journal investigation reports that Huawei directly assisted Ugandan authorities in surveillance operations targeting opposi-

tion leader Robert Kyagulanyi, commonly known as Bobi Wine (Parkinson et al., 2019). This investigation relies on classified police and parliamentary committee documents, as well as interviews with senior security officials, diplomats, cyber-defence experts, and opposition activists who report compromised communications. In 2018 and 2019, Huawei's infrastructure played a key role in enabling Ugandan authorities to monitor and suppress opposition activities, most notably those of Bobi Wine. As Wine gained political influence and mobilised popular support, Uganda's security apparatus grew increasingly alarmed. In response, social media monitoring units began sending alerts to security chiefs if they detected offensive communication (Parkinson et al., 2019). Within this environment, Safe City infrastructure increasingly shifted from a publicly stated crime-prevention initiative to a regime-security instrument. Rather than enhancing citizen safety, the system was repurposed to monitor political opposition and potential uprisings, thereby undermining the political security of regime opponents (Edimo & Rajaoson, 2025).

This conception of digital monitoring as a political tool led directly to its use against opposition figures. Acting on a presidential order, a senior police commander tasked a six-member cyber team to infiltrate Wine's WhatsApp group, Firebase Crew, as well as his Skype communications, invoking a 2010 law that authorises the government to secure its multidimensional interests (Parkinson et al., 2019). After several days of unsuccessful attempts, Huawei technicians were brought in to provide technical expertise. Wine described these practices as pervasive, extending even to his personal life, describing Huawei-enabled monitoring as a survivor strategy to consolidate power and an all-out assault because they knew everything (Parkinson et al., 2019). The same technological architecture was then deployed beyond targeted monitoring to broader population control, with Ugandan police publicly crediting Huawei's CCTV systems with facilitating the identification and arrest of more than 836 suspects (Kafeero, 2022). As these practices widened in scope, their consequences became increasingly visible. Human Rights Watch documented patterns of unlawful detentions targeting individuals accused of participating in protests, highlighting the broader risks associated with the expansion of the monitoring regime (Human Rights Watch, 2021b).

Huawei has denied these allegations, maintaining that it merely supplies technological infrastructure. Huawei's founder, Ren Zhengfei, publicly denied that the company engaged in spying on behalf of the Chinese government: "Neither Huawei, nor I personally, have ever received any requests from any government to provide improper information" (Parkinson et al.,

2019). In a legal letter, the company argued that the WSJ article contains false statements that harm Huawei's global reputation and business interests, rejecting the report and characterising its allegations as unfounded and inaccurate (Huawei, 2019). Similarly, Ofwono Opondo, a Ugandan government spokesman, has rejected all the allegations (Parkinson et al., 2019). Despite these denials, portraying Huawei's technology as neutral remains unconvincing. Since 2012, the US government has accused Huawei of being a potential tool for Chinese government spying, citing decades of alleged corporate espionage by state-backed Chinese actors. Huawei has consistently and forcefully denied these charges (Parkinson et al., 2019).

The centralisation of surveillance powers within the Uganda Police Forces carries far-reaching political and human rights implications. By embedding these practices into Uganda's security apparatus, Huawei helps consolidate a surveillance culture focused on regime protection, mirroring the Chinese intent of exporting its authoritarian model of governance (Collaboration on International ICT Policy for East and Southern Africa, 2024). The institutionalisation of these practices is clearly manifested within Uganda's police headquarters, where Huawei's red logo is displayed. Civil society has criticised both the Ugandan government and Huawei for failing to conduct adequate human rights due diligence.

2.3 Discussion

2.3.1 Human Rights Assessment

The Safe City surveillance infrastructure poses acute human rights concerns by enabling real-time tracking of vehicles and individuals, directly infringing on the right to privacy and indirectly restricting freedoms of expression, association, and peaceful assembly. These risks must be assessed against Uganda's international obligations, above all under the International Covenant on Civil and Political Rights (ICCPR, 1966). Article 19(2) of the ICCPR guarantees freedom of expression, whilst Article 21 protects the right to peaceful assembly. Uganda ratified the ICCPR on 21 June 1995, thereby committing to uphold these standards; however, persistent reports from Human Rights Watch and submissions to the United Nations⁷ highlight ongoing violations and weak enforcement of these rights.

⁷ These include reports from the ICJ (International Commission of Jurists, 2023), The Advocates for Human Rights (The Advocates for Human Rights, 2023), the Foundation for Human Rights Initiative (FHRI), and the World Coalition Against the Death Penalty (United Nations Human Rights Committee, 2023), all submitted in 2023 during the Committee's 138th Session.

These risks are amplified by Uganda's extensive collection of personal data, including names, photos, fingerprints, and signatures for SIM card and national ID registration, creating a vast database exploitable for surveillance (Human Rights Watch, 2023a). A 2023 report by the African Centre for Media Excellence revealed that this environment fosters an intimidation-induced chilling effect among journalists, limiting free reporting, whilst government intentions to add DNA and iris scans to ID cards further deepen intrusion (African Centre for Media Excellence, 2023; Murray et al., 2024). Governance risks are exacerbated by the lack of transparency surrounding the Safe City project. Contractual details between the Ugandan government and Huawei remain largely classified and a state secret, removing them from parliamentary scrutiny and public oversight. This exclusion from normal accountability processes — including parliament and the press — occurred from the outset (Edimo & Rajaason, 2025). Consequently, two key institutions that normally hold governments accountable — legislators and journalists — were excluded from monitoring or questioning the deal (Edimo & Rajaason, 2025). Opposition lawmakers in Uganda are concerned about the government giving control of the country's communications systems to Huawei. Their main fear is that this could create hidden ways for outsiders to access or monitor sensitive information secretly. Maxwell Akora, a member of Parliament's ICT Committee, stated: "There appears to be a policy to hand over the country's entire communications infrastructure to the Chinese. It's unwise given our concerns about spying and creating backdoor channels" (Parkinson et al., 2019). These threats are further reinforced by Uganda's political structure, where the police and intelligence agencies are formally and informally accountable to the President, who controls senior appointments and dismissals (Police Act, 2003; The Ugandan Peoples' Defence Forces Act, 2005). This concentration of power not only undermines institutional independence but also sets the stage for weak legal protections against surveillance and data misuse. Uganda's Data Protection and Privacy Act of 2019 allows broad data collection under national security, whilst the Anti-Terrorism Act of 2002 and the Regulation of Interception of Communications Act of 2010 authorise extensive interception of communications (Human Rights Watch, 2023a). These provisions fall short of international standards, which require surveillance to be necessary, proportionate, and subject to clear oversight (Human Rights Watch, 2023b).

Given the range of human rights risks involved, the Safe City project should be assessed in relation to Uganda's legal framework and applicable international standards on state and corporate responsibility. The combi-

nation of expansive surveillance capabilities, inadequate legal safeguards, limited transparency, and concentrated executive control reveals a governance gap that enables both public authorities and private actors to operate with insufficient accountability. In this context, international frameworks for protecting human rights play a crucial role. The United Nations Guiding Principles on Business and Human Rights (OHCHR, 2011) serve as a key global standard for addressing and preventing adverse human rights impacts associated with business activities, above all those involving technology companies. First, the principles establish the state's duty to safeguard individuals from human rights abuses perpetrated by third parties, including corporations. States must implement suitable laws, regulations, and policies to ensure that business activities within their territory or jurisdiction do not violate fundamental rights (OHCHR, 2011). This obligation is relevant in the digital context, where inadequate regulatory frameworks may permit the unrestrained growth of data exploitation and digital dependency. Second, corporations have an independent duty to uphold human rights: they must avoid actions that violate them and take responsibility for addressing any harmful impacts resulting from their activities. This accountability applies regardless of a state's capacity or willingness to fulfil its own human rights obligations, and it requires companies to conduct due diligence to identify, prevent, and mitigate potential breaches (OHCHR, 2011). The principles emphasise the importance of ensuring access to remedies for individuals and communities damaged by corporate-related human rights abuses. Both governments and companies share the responsibility to ensure that victims have access to effective judicial and non-judicial proceedings through which they can seek justice and redress (OHCHR, 2011). Within the framework of technocolonialism, the UN Guiding Principles appear relevant, as they are often presented as a key reference for addressing harms related to digital surveillance, data exploitation, and technological dependency imposed on vulnerable populations. However, their practical application remains limited.

2.3.2 Contributions and Implications

Building on prior analyses of technocolonial practices and surveillance infrastructures in Africa, this study highlights deep inconsistencies between the theoretical commitments of International Business and Human Rights (BHR) frameworks and their practical implementations by states and corporations. Instruments such as the UN Guiding Principles on Business and Human Rights and the OECD Guidelines for Responsible Business Conduct codify explicit norms regarding corporate accountability, human rights due diligence, and access to remedy. As Rutledge (2023) observes in the revised

OECD Guidelines, the non-binding nature of recommendations, coupled with the lack of enforcement mechanisms, undermines their effectiveness in preventing abuses, in high-risk sectors such as digital surveillance in particular. The United Nations High Commissioner for Human Rights (2021) similarly warns that, despite growing awareness of human rights risks linked to technology, corporations and investors frequently continue to prioritise profitability, market opportunities, and geopolitical interests over the safeguarding of fundamental rights.

Huawei illustrates this structural contradiction: whilst the company publicly affirms its commitment to corporate social responsibility and international norms, independent investigations link its technologies to widespread surveillance, repression, violations of privacy, and freedom of expression (Wang, 2022). This gap between stated principles and their application highlights how human rights commitments frequently serve as reputational tools rather than effective constraints on corporate power. As established in Chapter 4 (§3) of this volume, this dynamic is structurally analogous to the regulatory capture that has characterised corporate lobbying against binding due diligence obligations: the language of responsibility is adopted precisely because it forestalls the binding obligations that would make responsibility enforceable.

Moreover, as Zheng (n.d.) argues in *Digital Colonialism: How Tech Powers Are Rewriting Africa's Sovereignty*, the structural limitations of existing BHR frameworks become even more apparent within the broader context of Africa's digital transformation. The article illustrates how foreign governments and technology corporations consolidate control over data, network infrastructures, and cloud ecosystems, thereby creating long-term dependencies that erode African regulatory sovereignty. In such conditions, international standards risk legitimising rather than limiting external dominance, as weak governance frameworks and reliance on foreign digital infrastructures fundamentally restrict African states' capacity to enforce accountability. As a result, the fracture between theoretical human rights obligations and actual practice becomes not only a corporate failure, but a structural feature of the global digital order, where state security interests and corporate power routinely override the protection of fundamental rights.

Taken together, these contradictions illustrate the limits of existing international human rights and business frameworks within the context of digital dependency and structural asymmetry. In response, this study outlines a series of recommendations to support a transition toward a more just digital order, one in which the Global South can take on a proactive and

self-determining role in building an inclusive future (De Freitas, 2025a). The implications are examined at three levels: global, national, and corporate.

At the global level, the Huawei-Uganda case demonstrates how digital infrastructures can become instruments of geopolitical influence. To prevent the replication of historical extractive dependency, developing nations should strengthen South-South cooperation, investing in regional data networks and coordinated regulatory frameworks. Such cooperation can promote independence and data sovereignty, whilst avoiding isolation from the global digital economy (De Freitas, 2025b). The African Union's Digital Transformation Strategy for Africa 2020–2030 offers a potential counterweight to these risks of surveillance expansion and digital colonialism. The strategy articulates a vision centred on inclusive growth, resilient infrastructure, and the protection of digital rights, empowering African states and citizens to shape their own digital futures (De Freitas, 2025a).

At the national level, governments should allocate greater resources in physical - regional data centres and cloud services - and intangible assets - digital literacy, education, and public awareness (De Freitas, 2025a). Video footage published by the Wall Street Journal showed rural communities lacking access to basic services such as electricity, whilst simultaneously being equipped with advanced surveillance cameras supplied by Huawei (Parkinson et al., 2019). This contrast underscores how technological investment often follows political interests rather than development goals, facilitating the exploitation of citizens' vulnerability and normalising intrusive surveillance practices. In this context, reforming weak privacy and data-protection laws becomes essential. Uganda's Regulation of Interception of Communications Act (RICA) 2010⁸ represents a contested law due to a lack of adequate safeguards of rights to freedom of expression and the right to privacy. In a 2010 memorandum on Uganda's Regulation of Interception of Communications Act, Amnesty International underlines that the Act enables lawful interception and monitoring of communications in the course of their transmission, permitting a broad and unclear power of surveillance. Section 3 of the Act establishes a Monitoring Centre, under the control of the Minister, which shall be the sole facility through which authorised interceptions shall be effected. This raises concerns over the absence of an oversight mechanism ensuring accountability (Amnesty International, 2010).

At the corporate level, the gap between Huawei's public commitments and the documented use of its technologies in enabling surveillance abuses

⁸ Regulation of Interception of Communications Act 2010, [https://bills.parliament.ug/attachments/Laws%20of%20Uganda%20\(Acts\)%20-%20THE%20REGULATION%20OF%20INTERCEPTION%20OF%20COMMUNICATIONS%20ACT%202010.pdf](https://bills.parliament.ug/attachments/Laws%20of%20Uganda%20(Acts)%20-%20THE%20REGULATION%20OF%20INTERCEPTION%20OF%20COMMUNICATIONS%20ACT%202010.pdf)

exposes the risk of corporate human rights washing. This highlights the need for corporations to exercise due diligence and be held accountable when collaborating with governments known for their lack of transparency and poor human rights records. Additionally, corporations should adopt privacy policies to protect users' rights and foster transparency in publishing reports on cooperation cases with state actors (Collaboration on International ICT Policy for East and Southern Africa, 2024).

2.4 Case Study Conclusion

Huawei's role and infrastructure in Uganda are not merely neutral technological tools aimed at improving the nation's security. They are political and economic infrastructures that influence power relations and reinforce the dependence on foreign-supplied technologies, enabling human rights violations. The Ugandan case study is a clear example of how technocolonialism operates through digital infrastructures that reshape security practices and policies in a context characterised by fragile institutional safeguards. Rather than strengthening inclusive digital development, both Huawei and the Ugandan government have contributed to the intensification of authoritarian tendencies that limit privacy and freedom of expression.

From a human rights perspective, the case emphasises the governmental misuse of Huawei-supplied infrastructure and the gap between the multinational's commitments and its practices, suggesting the lack of governmental transparency and of corporate human rights due diligence. In spite of these issues, the research acknowledges that Huawei has brought to Uganda an improvement in the digital infrastructure of the state. However, this development is closely linked to technocolonial patterns.

By highlighting the relation between technocolonialism, human rights, and the surveillance infrastructure, the research underscores the urgent need for a thorough re-evaluation of the deployment of the system: without accountability, technological advancements can lead to power imbalance and affect people's rights. The study invites broader reflection on the issue: is the current international legal framework effective in counterbalancing the threat of technocolonialism? If not, what are the implications for democratic governance?

3. Concluding Remarks

The three phenomena examined in this chapter — the deployment of surveillance technologies as instruments of repression, the systematic erosion of decent work in the gig economy, and the entrenchment of technocolonial dependency through foreign digital infrastructure — are not independent developments. They are structurally connected expressions of a single underlying dynamic: the capacity of digital technologies, deployed in the pursuit of profit and power, to generate human rights violations at scale while remaining shielded from accountability by the complexity of the governance environments in which they operate.

In the context of surveillance, this dynamic takes its most acute form. The systems documented in this chapter — from the Wolf Pack, Blue Wolf, and Red Wolf platforms in the Occupied Palestinian Territories to Huawei's Safe Cities infrastructure in Uganda — are not technologies that were designed for benign purposes and subsequently misused. They are architectures of control whose human rights implications were foreseeable, and in many cases foreseen, by the corporations that developed and deployed them. The failure of Hikvision, TKH Security, and Huawei to conduct meaningful human rights due diligence when supplying components or systems to high-risk environments is not a compliance gap; it is a structural logic of business models that prioritise market expansion over rights protection, insulated by the non-binding character of the frameworks nominally governing their conduct. As established in Chapter 10 (§1.2.8), impunity is not merely a failure of criminal justice systems: it is a structural signal that operates with the precision of a price mechanism — and until the expected cost of enabling surveillance abuse is raised through binding accountability mechanisms, the rational actor faces no meaningful deterrent.

In the gig economy, the mechanism is different, but the logic is identical. Platform companies deploy algorithmic management to extract maximum economic value from workers whilst denying them the legal protections — employment status, collective bargaining rights, social protection — that make such extraction accountable. The misclassification of workers as independent contractors is not a legal technicality; it is a deliberate strategy of cost externalisation that transfers the burden of competitive pressure onto the workers least able to resist it. The landmark judicial decisions reviewed in this chapter — from the UK Supreme Court's Uber ruling to the Spanish Tribunal Supremo's Glovo judgment — represent the legal system's belated

recognition of a structural reality that platform companies had every incentive to obscure.

The Huawei-Uganda case study integrates both dimensions. It illustrates how surveillance infrastructure, debt-linked financing, and technical dependency can combine to create conditions of technocolonial control in which a government deploys foreign-supplied technology against its own citizens, whilst the supplying corporation maintains formal plausible deniability. The structural drivers identified in the case — capital scarcity, weak regulation, concentrated executive power, and the geopolitical interests embedded in Chinese digital expansion — are not specific to Uganda. They are features of the broader environment in which digital infrastructure is being deployed across the Global South, where the combination of governance deficits and corporate power asymmetries creates conditions of acute vulnerability.

What the evidence assembled in this chapter ultimately demands is a transition from voluntary to binding governance frameworks adequate to the scale and structural character of these challenges. The EU AI Act, the forthcoming ILO Convention on Decent Work in the Platform Economy (Fredman et al., 2025), and the CS3D represent partial but meaningful steps. Their common limitation is reach: the populations bearing the greatest costs of unregulated digital capitalism — Palestinian communities under surveillance, gig workers in the Global South, citizens of states with captured regulatory institutions — are precisely those least protected by instruments whose enforcement depends on the capacity and will of states that are themselves implicated in the violations they are designed to prevent. Closing this gap requires not only stronger international regulation but a fundamental reorientation of how human rights obligations are allocated in the digital economy — one that places binding, enforceable accountability on corporations at the point where their technologies meet the most vulnerable.

Yet even this reorientation, necessary as it is, does not reach the deepest layer of the challenge. Zuboff's (2019) analysis of surveillance capitalism identifies the precise mechanism through which digital technologies narrow the corridor of possibility identified in Chapter 2 of this volume — and it operates below the threshold of what existing regulatory frameworks are designed to address. The logic is not that of the twentieth-century totalitarian state, which closed the future through violence and ideology. It is subtler and, in some respects, more consequential: a system that does not forbid choices but modifies the conditions under which they are made, orienting human behaviour toward the outcomes most profitable for behavioural futures markets. Zuboff terms this *instrumentarian power* (see *Glossary*, *Box*

3) — a form of control that operates not through coercion but through the architecture of the digital environment itself, shaping what people see, what they are offered, what they are nudged toward, and what they are silently steered away from. Where surveillance capitalism operates without constraint, the corridor of possibility does not close dramatically: it narrows incrementally, through the accumulation of small modifications to the informational environment in which human choices are made. The result is not a population that cannot choose freely — it is a population that does not know that its choices are being shaped.

This is the dimension of the digital rights challenge that existing governance frameworks are least equipped to address. The EU AI Act can prohibit certain high-risk applications; the CS3D can require due diligence in value chains; the forthcoming ILO Convention can establish a floor for platform workers' rights. None of these instruments reaches the deeper structural dynamic that Zuboff identifies: the systematic privatisation of the epistemic conditions of human autonomy — the conditions under which people form preferences, make decisions, and exercise the freedom that the corridor of possibility requires. Widening that corridor in the digital age requires not only binding regulation of specific applications but a fundamental reorientation of the governance of digital infrastructure itself: one that treats the epistemic commons — the shared informational environment in which democratic choice is exercised — as a public good to be protected, not a raw material to be extracted.

There is a further dimension to this convergence that the evidence assembled in this chapter makes impossible to ignore. The surveillance technologies examined in section 1.1 — facial recognition, biometric profiling, predictive analytics, behavioural analysis — were not developed in a laboratory and then deployed in the field. They were developed in the field: tested, refined, and commercialised through their application to the Palestinian population of the Occupied Palestinian Territories, where the Israeli military-technology complex has operated, for decades, what critics have termed a Palestine Laboratory — a live environment for the development of control technologies whose lessons are subsequently exported to governments worldwide. The Wolf Pack, Blue Wolf, and Red Wolf systems examined in this chapter are not the end point of this process: they are its most recent and most visible expression. The corporations that developed them, the states that purchased them, and the financial institutions that enabled both are examined in Chapter 12 of this volume, in the context of corporate

complicity in occupation and genocide. The digital infrastructure of control and the political economy of dispossession are not parallel phenomena: they are the same phenomenon, viewed from different angles.

The structural conditions documented in this chapter — surveillance architectures that monitor and pre-empt dissent, algorithmic management systems that extract value whilst denying accountability, technocolonial dependencies that bind the Global South to foreign-controlled digital infrastructures — are not the inevitable product of technological progress. They are the product of choices: choices about which technologies to develop, for whom, under what governance conditions, and with what accountability mechanisms (Jieutsa et al., 2024). The corridor of possibility identified in Chapter 2 of this volume remains open — but navigating it requires, as a precondition, that the digital infrastructure of the global economy serves human development rather than constraining it. Where surveillance systems monitor and pre-empt the exercise of rights, where algorithmic management strips workers of the protections that make their labour dignified, and where technocolonial dependencies reproduce the extractive hierarchies of the colonial past in digital form, that corridor narrows. Widening it is not a technical problem: it is a political one, and it requires the same combination of binding regulation, corporate accountability, and democratic governance that the preceding chapters of this volume have identified as necessary across every domain of business and human rights.

Box 1 - Guiding Questions

1. Does “technocolonialism” describe a temporary regulatory gap or intentional structural dependency?
2. Is digital and technological sovereignty for states that rely on foreign ready-made systems possible? Can they be politically neutral?
3. Can privacy exist as a fundamental right if predictive profiling reduces human behavior to an algorithmic risk classification?
4. How do surveillance systems’ data compilations and analytics affect the rights of targeted populations long term?
5. To what extent do existing governance frameworks — including the EU AI Act, the forthcoming ILO Convention on Decent Work in the Platform Economy, and the CS3D — adequately protect the populations bearing the greatest costs of unregulated digital capitalism, and what structural reforms would be required to close the accountability gap they leave open?

Box 2 - Key facts

- In the European Union alone, the platform workforce reached 28 million people in 2022 and was projected to nearly double by the end of 2025.
- As of mid-2023, Israel stood as the leading global exporter of spyware and digital forensic technologies, having exported USD 6.5 billion in cybersecurity products in 2016 alone — many of which were developed and refined through their application to the Palestinian population of the Occupied Palestinian Territories.
- Red Wolf's facial recognition system applies exclusively to Palestinians; Jewish settlers are exempt — a structural design feature, not an incidental flaw.
- A 2019 Wall Street Journal investigation reported that Huawei technicians directly assisted Ugandan authorities in infiltrating the WhatsApp and Skype communications of opposition leader Bobi Wine.
- The average hourly wage on web-based digital labour platforms amounts to USD 3.4, with 66% of workers earning less; 37% rely on platform work as their primary income source, with direct consequences for their capacity to afford social protection and health coverage (ILO, 2021).
- The market value of the labour platform economy grew from USD 7.1 trillion in 2018 to USD 10.2 trillion in 2023, with the number of active platforms increasing from 193 in 2010 to 1,070 in 2023 — a growth trajectory that has outpaced the development of any adequate regulatory framework (ILO, 2025a).
- Uganda's USD 126 million Safe City contract with Huawei was financed primarily through a USD 104 million loan from Standard Chartered Bank, with contractual details classified as a state secret and removed from parliamentary scrutiny — illustrating the accountability gap that technocolonial financing arrangements systematically create.

Box 3 - A Working Glossary

Term	Definition
AI colonialism	The concentration of artificial intelligence development, infrastructure, and governance capacity in a small number of technologically advanced states and corporations, whilst the populations of the Global South bear disproportionate costs — including data extraction, environmental harm, and the deployment of AI systems that reinforce existing inequalities — without meaningful participation in their design or governance
Algorithmic management	The use of automated systems to direct, monitor, evaluate, and discipline workers in real time, replacing or supplementing human supervisory functions; in platform labour markets, it typically operates through rating systems, task allocation, and account deactivation mechanisms that are opaque to workers and not subject to collective bargaining
Decent work	A concept developed by the ILO encompassing four strategic pillars: promoting fundamental principles and rights at work; fostering employment; strengthening social protection; and improving social dialogue and tripartism; the ILO's framework for measuring the quality of work as distinct from its mere existence

Digital divide	The inequality between those who have access to and the capacity to use digital technologies and those who are excluded from them, creating disparities in social, economic, educational, and cultural spheres; in the context of this chapter, the digital divide is compounded by technocolonial dependencies that position the Global South as a consumer rather than a producer of digital infrastructure
Digital labour platform (DLP)	A business model that uses digital technology to establish virtual connections between service requesters and workers, spanning web-based platforms for remote crowd work, location-based platforms for on-demand offline services, and content platforms; the ILO identifies three main models: web-based, location-based, and content platforms
Epistemic commons	The shared informational environment in which democratic choice is exercised and individual and collective preferences are formed; identified by Zuboff (2019) as the public good that surveillance capitalism systematically privatises through the extraction and manipulation of behavioural data; its protection is identified in this chapter as a necessary condition for the adequate governance of digital infrastructure — one that treats the conditions of human autonomy as a common resource to be safeguarded rather than a raw material to be extracted
Gig economy	The segment of the labour market characterised by short-term, task-based, or project-based work mediated through digital platforms, in which workers are typically classified as independent contractors rather than employees, thereby excluding them from employment-contingent legal protections
Instrumentarian power	A form of power identified by Zuboff (2019) that operates not through coercion but through the architecture of the digital environment itself, modifying the conditions under which human choices are formed and orienting behaviour towards the outcomes most profitable for behavioural futures markets; it narrows the corridor of possibility incrementally rather than dramatically, producing a population whose choices are being shaped without its awareness, and is distinguished from twentieth-century totalitarian power by its invisibility and its reliance on the modification of the epistemic environment rather than on physical force
Palestine Laboratory	A term used by critics and researchers to describe the Occupied Palestinian Territories as a live testing ground for surveillance and control technologies — including facial recognition, biometric profiling, and predictive analytics — developed by the Israeli military-technology complex and subsequently exported commercially to governments worldwide (7amleh – The Arab Center for the Advancement of Social Media, 2023)

Safe Cities	A commercial product category offered by technology companies — most prominently Huawei — comprising integrated urban surveillance infrastructure including CCTV cameras, facial recognition systems, crowd-monitoring technologies, and data analytics platforms, marketed to governments as instruments of public safety and urban management
Surveillance capitalism	A profit-making system predicated on the unilateral appropriation of human experience as raw material for translation into behavioural data, which is then processed into prediction products sold in behavioural futures markets; identified by Zuboff (2019) as the dominant economic logic of the digital economy
Technocolonialism	A contemporary form of domination in which control is exercised not through direct territorial occupation but through digital infrastructures, data extraction, and technological dependency; distinguished from digital colonialism by its emphasis on the continuity and persistence of colonial structures into the present digital order

Chapter 12

The Governance Laboratory: Business, Genocide, and the Architecture of Impunity

Case Studies: From Economy of Occupation to Economy of Genocide

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*First they came for the Communists,
and I did not speak out —
because I was not a Communist.
Then they came for the Socialists,
and I did not speak out —
because I was not a Socialist.
Then they came for the trade unionists,
and I did not speak out —
because I was not a trade unionist.
Then they came for the Jews,
and I did not speak out —
because I was not a Jew.
Then they came for me —
and there was no one left
to speak out for me.
Martin Niemöller (1892–1984)*

This chapter reviews and extends the analytical framework of the report presented on 30 June 2025 by the UN Special Rapporteur on the situation of human rights in the Palestinian territories occupied since 1967, Francesca Albanese, titled *From Economy of Occupation to Economy of Genocide*. The report exposes the corporate machinery sustaining the Israeli settler-co-

lonial project of displacement and replacement of the Palestinian people – documenting how transnational corporations across eight key sectors have profited from, and actively enabled, Israel’s economy of illegal occupation, apartheid, and genocide. The chapter situates this analysis within the broader volume framework: the occupied Palestinian territory is not an exception to the global system of corporate impunity and governance failure documented in the preceding chapters – it is that system operating at its most extreme and most documented expression. Two case studies are developed: the first examines Lockheed Martin’s role in the arms trade with Israel, illustrating how corporate governance architecture can be deliberately configured to insulate profitable conduct from international accountability; the second analyses the illegal expansion of solar energy infrastructure in the West Bank, documenting how the language of environmental sustainability is mobilised to legitimate and entrench territorial dispossession – a structural case of greenwashing the occupation. The chapter argues that the Palestine case is not merely a humanitarian emergency but a governance laboratory: if the convergence of capital, military technology, and opaque elite power is allowed to proceed with impunity, the model it has perfected – the annihilation of a people, a culture, a history, and a biodiversity – becomes exportable. Resistance is possible, but only if organised, global, and multi-level. The corridor of possibilities remains open. What comes next depends on everyone.

Keywords: Nakba, settler-colonialism, genocide, Palestine, corporate responsibility, economy of occupation, greenwashing, governance laboratory, resistance

Learning Objectives

After reading this chapter, you will be able to:
Explain the legal framework governing corporate responsibility in the context of belligerent occupation, with particular reference to the UN Guiding Principles on Business and Human Rights, the ICJ Advisory Opinion of July 2024, and the ICC proceedings concerning the occupied Palestinian territory.
Identify and critically assess the eight key sectors through which transnational corporations have enabled and profited from Israel’s economy of occupation and its transition to an economy of genocide, distinguishing between the three stages of displacement, replacement, and enabling.
Analyse the governance architecture of a major defence contractor – using Lockheed Martin as a case study – and evaluate how corporate governance structures, lobbying strategies, and regulatory gaps combine to insulate profitable conduct from international human rights accountability.

Apply the concept of greenwashing to the specific context of belligerent occupation, using the case of solar energy infrastructure in the West Bank's Area C to demonstrate how environmental sustainability narratives can legitimate and entrench territorial dispossession.

Critically evaluate the conditions under which organised, multi-level resistance to systems of corporate impunity becomes structurally viable, drawing on the legal, civil society, and academic accountability mechanisms documented in this chapter and on the analytical frameworks developed across this volume.

From the Palestine Laboratory to the Global System: A Note on This Chapter's Place in the Volume

The preceding chapter of this volume established that the occupied Palestinian territory functions as what researchers and critics have termed a *Palestine Laboratory*: the terrain in which surveillance technologies, biometric recognition systems, AI-assisted targeting tools, and mass data collection infrastructures are developed, tested on a captive population under conditions of near-total impunity, and subsequently commercialised to governments worldwide (Loewenstein, 2023; Albanese, 2025). The digital infrastructure of control and the political economy of dispossession examined across eleven chapters of this volume are not parallel phenomena. They are the same phenomenon, viewed from different disciplinary angles — and this final chapter closes the circle.

But this chapter adds a dimension that no preceding chapter has been required to confront with the same directness: the possibility that what is happening in Palestine is not only the convergence of the analytical patterns documented in this volume — extractivism, supply chain opacity, greenwashing, land grabbing, surveillance, the silencing of defenders — but their prototype. A system that has been tested, refined, and is now available for export.

This volume opened, in Chapter 2, with the framework of planetary boundaries and the concept of the safe and just corridor: the space above the social floor and below the ecological ceiling within which human civilisation can sustain itself. The Palestinian case forces a confrontation with a dimension of that framework that is rarely named directly: the genocide in Gaza and the settler-colonial enterprise in the West Bank are not only political and legal violations. They are, simultaneously, an ecocide. The systematic destruction of Palestinian agricultural land — olive groves uprooted,

orchards razed, fertile soil sealed under concrete and rubble — the weaponisation of water through deliberate restriction of supply, the contamination of the Gaza coastal aquifer, the obliteration of 81 per cent of cropland documented by UNOSAT: these are not collateral consequences of military operations. They are the calculated destruction of the biophysical conditions of a people's existence. The political project of erasure and the ecological project of destruction are not parallel tracks — they are the same track, and understanding one requires understanding the other. Alatout's (2006) bio-territorial conceptualisation of power in the Palestinian-Israeli context identifies the precise mechanism through which this unity is obscured: by focusing on the quality of life of the population, power's expression in territorial forms is rendered invisible; and by framing resistance in terms of property rights and sovereignty, the bio-political dimension of control over bodies, movement, and reproduction is left untheorised. Chapter 6 of this volume documented how environmental destruction and human rights violations are structurally inseparable. The Palestinian case is the most extreme documented instance of that inseparability.

The architecture of impunity that enables this double destruction — political and ecological — is the defining analytical contribution of the present chapter to the volume's argument. That architecture operates at multiple levels simultaneously, and its most instructive feature is not its strength but its constructed character: it has been built, maintained, and on occasion repaired through identifiable political choices by identifiable actors.

The most documented of these choices is the systematic use of the United States veto at the UN Security Council — deployed over 40 times to shield Israel from binding Chapter VII measures — which has structurally immunised a strategic ally from the international legal order that the same power invokes against adversaries. But the architecture of impunity extends beyond the Security Council, and one of its most analytically revealing episodes involves the General Assembly itself. In 1975, UNGA Resolution 3379 — adopted by 72 votes in favour, 35 against, and 32 abstentions — declared that "Zionism is a form of racism and racial discrimination". In 1991, UNGA Resolution 46/86 revoked that determination by 111 votes in favour, 25 against, and 13 abstentions — a reversal explicitly conditioned on Israel's participation in the Madrid Peace Conference, negotiated as part of the post-Gulf War diplomatic settlement. The analytical implication is not primarily about the substantive content of either resolution. It is about what the sequence reveals: that a formal determination of the international community's principal deliberative body can be reversed not through new legal

argument or new evidence, but through diplomatic leverage and geopolitical conditionality. The revocation of Resolution 3379 does not cancel the debate it opened. It transforms that debate into a case study in the mechanics of structural impunity — evidence that the perimeter of what international law formally condemns is determined not solely by normative principle, but by the distribution of political power among those who negotiate its content. This is the same mechanism, operating at a higher institutional level, that this chapter documents in the corporate context: the redrawing of accountability perimeters through political choice rather than legal reasoning.

This selective multilateralism — protecting allies whilst prosecuting adversaries through the same institutions — does not merely weaken specific legal provisions. It undermines the legitimacy of international law as a governance instrument at the precise moment of its greatest necessity: when the transgression of both ecological and social boundaries has made the need for enforceable global governance more urgent than at any previous point in human history.

Against this background, the present chapter does not argue that corporate accountability or a stronger enforcement of international law is sufficient to end the genocide in Gaza or to dismantle the settler-colonial enterprise in the West Bank. It argues something more modest and more durable: that understanding the mechanisms of corporate complicity — their legal architecture, their financial chains, their greenwashing strategies, and their governance configurations — is a necessary condition for building the organised, global, multi-level resistance that is the only historically documented path through which systems of impunity have ever been dismantled. We know this because it has happened before. And we know, from the record examined in these pages, that it requires everyone.

1. Introduction⁹

Sections 1–5 review the report by UN Special Rapporteur Francesca Albanese on human rights in the Palestinian territories occupied since 1967, presented to the UN Human Rights Council (fifty-ninth session, Agenda Item 7), entitled “From Economy of Occupation to Economy of Genocide” (Albanese, 2025). Special Rapporteur, classifies the Israeli genocide, occupa-

⁹ Sections 1-5 of this chapter are written by Teresa Cucca. The Author gratefully acknowledges her original contribution to Chapter 12. The analytical framing, integration with following Sections in this chapter, and editorial adaptation are the responsibility of the Author.

tion, and settler-colonial apartheid in Palestine as a case of “colonial racial capitalism”. She stresses that a genuine human rights due diligence would have required corporate entities to disengage from the Israeli occupation decades ago. Nevertheless, the report demonstrates how corporations have continued to support Israel’s crimes and thus “*contributed to the acceleration of the displacement-replacement process throughout the*” genocidal “*military campaign that has pulverized Gaza and displaced the largest number of Palestinians in the West Bank since 1967*” (Albanese, 2025, p. 2).

The report outlines the merging of occupation and genocidal economies. The author calls on corporations to end complicity in Israel’s violations and demands that they are held accountable under international law (see Section 2). After the publication of this report, the author was subjected to US sanctions, making her the first UN official to be formally sanctioned by a state party, in violation of the Convention on UN immunities (United Nations, 2025).

Finally, two case studies are included: Section 6 examines the case of US-based Lockheed Martin illegally exporting weapons to Israel; Section 7 analyses the case of solar panels in the West Bank, documenting how renewable energy infrastructure greenwashes the occupation.

2. Applicable Legal framework

“*Settler-colonialism involves extraction and profit from, and colonization of, land through the expulsion of its owners*” (Albanese, 2025, p. 5). Historically, in Palestine, enterprises have fuelled and enabled the process of displacing and replacing the Arab population — at the heart of the settler-colonial erasure carried out by Israel. The establishment of the Jewish National Fund, a land-acquisition corporation, helped organise and execute the progressive ethnic cleansing of Arab Palestinians, which intensified during the Nakba (1948) and has continued since then.

After 1967, companies intensified their material support for Israel’s expansion through the dispossession and displacement of Palestinians. The Special Rapporteur concludes that the corporate sector participated in the fabrication of “*the conditions for Palestinian ethnic cleansing*”, by effectively providing machinery and weapons necessary to destroy Palestinian territories and prevent them from accessing their natural resources (Albanese, 2025, p. 10).

In 1967, following the *Naksa* — the massive displacement of approximately 350,000 Palestinians which led to the Israeli occupation of the West Bank, East Jerusalem, the Gaza Strip, and the Syrian Golan Heights — Israel became an occupying power in the Palestinian territories (Albanese & Elia, 2023). Under international law, specifically the Fourth Geneva Convention and international humanitarian law, an occupying power is obligated to ensure the welfare of the population under its control. This responsibility encompasses all aspects of civilian life, including economic development. One of the fundamental duties of an occupying power is therefore to refrain from exploiting the territory it occupies or undermining the development of the local population for the benefit of its own citizens.

Israel's occupation is illegal, as it has proved not to be temporary (Albanese, 2023) and breaches these obligations. It has exploited its control over these territories, leveraging military regulations and the involvement of international corporations to advance its economic interests, often at the expense of the occupied Palestinian economy. The Occupied Palestinian Territories beyond the Green Line (OPT), particularly Area C of the West Bank, are under complete Israeli administrative and military control, which includes strict regulation of imports and exports. These controls have severely hampered the development of the local Palestinian economy and restricted market growth.

The current economy of occupation between Israel and the Palestinian territories was formalised through the Paris Protocol (1994), an economic annex to the Oslo Accords, which effectively cemented Israeli dominance over the Palestinian economy, imposing a customs union that favoured Israeli economic interests and contributed to normalising the occupation rather than challenging its colonial nature (Albanese & Elia, 2023; Amnesty International, 2024).

Under this arrangement, Palestinians face restrictive trade regulations, high tariffs, and limitations that do not apply to Israeli businesses. As a result, Palestinian society in the OPT has become increasingly dependent on Israeli companies for employment and goods, creating a scenario of economic exploitation. Palestinian labour, natural resources, and consumer markets are utilised primarily for the benefit of the Israeli economy, while local development is systematically stifled (Albanese, 2024).

The report of UNCTAD highlights the heavy dependence of the West Bank on employment opportunities in Israel and Israeli settlements, which stems from a lack of job availability in the local labour market. In 2022, 22.5% of employed Palestinians from the West Bank worked in Israel or its settle-

ments, generating USD 4 billion in income, equivalent to 25% of the Palestinian GDP and 18.5% of its gross national income. UNCTAD pointed out that this reliance on external labour markets leaves the Palestinian economy vulnerable to the region's volatile political situation. The Paris Protocol requires Israel to collect tax revenues from Area C and transfer them to the Palestinian government, but this has yet to be implemented. UNCTAD estimates that the occupying power generates approximately USD 41 billion annually from Palestinian land and resources in settlements in East Jerusalem and Area C, with around 33% of this amount collected as tax revenue by Israel (United Nations Conference on Trade and Development, 2024).

The Palestinian population of the territories occupied after 1967 thus finds itself trapped in a settler-colonial dynamic: subjected to the authority of the occupying power, which restricts its capacity for self-development, yet reliant on this very power for employment and economic survival. This dependency relationship undermines the autonomy and economic resilience of Palestinian communities and is designed to perpetuate Israel's settler-colonial project, which from the Nakba until today has aimed to ethnically cleanse the entire Palestinian territory of its indigenous population. (Albanese, 2025)

2.1 Legal Framework and Exploitation of Natural Resources under Occupation

Under international law, a state of occupation is recognised when all or part of a territory is under the effective control of a foreign military force. This status remains until the occupying power withdraws or is expelled and a local government regains full and unrestricted sovereignty. The period of occupation is intended to be temporary, governed by the principles of international humanitarian law (IHL) and international human rights law (IHRL), which extend state obligations to all territories under its jurisdiction. These legal frameworks bind all parties involved in the conflict, including business enterprises, which are required to respect IHL and IHRL standards. Businesses must ensure that their operations do not contribute to or benefit from violations of these laws.

IHL provides specific protections for the local population, defined as "protected persons", who should not be deprived of their rights and guarantees. It prohibits the forcible transfer of populations, forced labour, and collective punishment. Moreover, IHL explicitly forbids the transfer of the occupying power's civilian population into occupied territories, recognising the detrimental impact on local demographics, property rights, and resource allocation. Such practices often lead to the unlawful appropriation of prop-

erty and the exploitation of natural resources, both of which are prohibited under international law.

The Hague Regulations and the Fourth Geneva Convention further impose restrictions on the confiscation of private property and the destruction of property unless absolutely required by military necessity. Article 46 of the Hague Regulations prohibits the confiscation of private property, whilst Article 53 of the Fourth Geneva Convention prohibits the destruction of real or personal property belonging to private individuals, the state, or other public authorities, except in cases of absolute military necessity.

Additionally, the principle of permanent sovereignty over natural resources remains vested in the people of the occupied territories, underscoring their right to economic self-determination. Obstruction of economic development, including the denial of access to natural resources, negatively impacts other fundamental rights, such as the right to an adequate standard of living and the right to work, as enshrined in Articles 6 and 11 of the International Covenant on Economic, Social and Cultural Rights (ICESCR). International law establishes that the exploitation of natural resources in occupied territories should serve to offset the costs of the occupation and not benefit the occupying power's economy exclusively.

Beyond IHL and IHRL, states and business enterprises must also consider their obligations under international criminal law. Businesses, as legal entities, may face prosecution for direct involvement in or complicity with international crimes, including violations of the laws of occupation. They may also be held liable under civil law for such actions.

Despite these clear legal prohibitions, Israel has exploited Palestinian natural resources, particularly in Area C, where it maintains full administrative control. Renewable energy, specifically solar power, has become a key sector in this exploitation. Israel's control over energy infrastructure and natural resources in the West Bank serves not only as a means of economic gain but also as a tool of territorial entrenchment, furthering its expansionist settlement policy at the expense of the Palestinian population and land (*see Chapter 9 of this volume on greenwashing as a structural mechanism* [Ed.]).

The UN Special Rapporteur exposes the global governance gap between the enormous power that some corporations hold and the insufficient judicial accountability they are subjected to. The report traces corporations' impunity back to their relationship with "settler colonialism and racial segregation"; corporations and their home countries, primarily global-minority states, have always enslaved and dispossessed indigenous peoples, continuing to act solely according to their profit interests whilst avoiding accounta-

bility through structural imbalances stemming from “colonial dispossession” and domestic normative gaps in previously colonised countries (Albanese, 2025, p. 28).

In 2011, the United Nations Human Rights Council endorsed the Guiding Principles on Business and Human Rights (UNGP) (resolution 17/4) (see Chapter 3 of this volume), which indicate that “*at a minimum, corporate entities directly linked to human rights impacts must exercise leverage or consider termination of their activities or relationships. Failure to act accordingly may give rise to liability.*” Furthermore, the complexity of the required Human Rights Due Diligence (HRDD) processes and the urgency with which corporate entities must respond is proportional to the scale, reach, and irreversible nature of the abuses occurring. When there is manifest evidence of ongoing, widespread human rights abuses, a company must treat the risk of involvement as a legal compliance matter and, in the most severe cases, entirely cease operations within that nation. Since the economy of occupation in Palestine links these companies to severe violations of international law, they were almost certainly already obliged, under the UNGP, to halt any involvement linked to the occupied Palestinian territories (Albanese, 2025).

The decades-long knowledge of the structural violations of imperative norms of international law and international humanitarian law, such as the unlawful occupation, should have already warned businesses of their responsibility to avoid “causing, contributing to or being directly linked” to the ongoing human rights abuses, and of the risk of being complicit in international crimes “by aiding and abetting and facilitating them”. As Albanese (2025, p. 35) documents: “*Since 1967, Palestinian and Israeli human rights groups, the United Nations main organs as well as UN treaty bodies, special rapporteurs, investigative committees and major international NGOs have systematically documented the Israeli occupation’s many violations, including the economic structures that sustain it.*” Notwithstanding their knowledge of contributing to such international abuses, corporations continued to support and profit from Israel’s economy rooted in settler-colonial expansion, unlawful occupation, and apartheid.

2.2 Recent Developments

In 2004, the ICJ found that Israel’s erection of the Wall in the West Bank, including East Jerusalem, violated imperative norms of international law, including the right to self-determination, the prohibition on annexation, and obligations under international humanitarian and human rights law, among which the crime of forced displacement.

When dealing in the territories occupied after 1967, corporations were already required to engage in heightened human rights due diligence and to take the necessary actions to cease their engagement with the unlawful occupation (Albanese, 2025, Annex, paras. 10–16).

However, the most recent proceedings created a situation in which it is simply impossible for corporations to continue business as usual, placing them on “*notice of the serious risk of being implicated in very serious violations of international law, including human rights violations and international crimes, and of their actions having contributed to or become criminally complicit in these violations and crimes*” (Albanese, 2025, p. 38).

In January 2024, the ICJ mandated Israel to employ all available means to “prevent genocidal acts against Palestinians”. In May 2024, it followed up by ordering it to forthwith cease all military operations that might “bring about conditions of life intended to destroy”. Hence, the Court triggered the duty under Article 1 of the Genocide Convention to “prevent and punish” genocide, consequently exposing anyone who continues “*to aid, abet or assist Israel in committing such acts to potential international responsibility for complicity in genocide*” (Albanese, 2025, p. 37).

In July 2024, the same court found “a violation of the prohibition on the use of force effectively” and classified the occupation as an act of aggression, declaring Israel’s entire presence in the Palestinian territories occupied after 1967 as unlawful. Consequently, any dealing with the occupation may constitute complicity in an international crime punishable under the ICC Statute. The Court also found Israel to be in breach of non-derogable norms of international law: the right to self-determination of the Palestinian people and the prohibition of annexation, associated with the breach of Article 3 of the CERD on apartheid. The Court reiterated third parties’ duties “not to render aid or assistance”, “not to recognize”, and “to take steps to prevent” trade or investments assisting “the maintenance of the illegal situation” (International Court of Justice, par. 277–278). Corporations can no longer advance mitigation measures or evaluate Israel’s conduct on a case-by-case basis; they must address in their heightened human rights due diligence the fundamental illegality of Israel’s project (*see Chapter 4 of this volume on CAHRAs and the political determination of regulatory perimeters* [Ed.]).

Consequently, in September 2024 the UNGA demanded the cessation of Israel’s unlawful presence by 17 September 2025 and ordered that “until that happens” states must not “provide aid or assistance or enter into economic or trade dealings, and must take steps to prevent trade or investment relations that would assist in maintaining the illegal situation” (Albanese, 2025, p. 37).

It also reiterated that the Geneva Convention prohibits states from providing or transferring weapons, ammunition, or related equipment to those violating international humanitarian law — and therefore in all cases in which there are reasonable grounds to suspect that they might be used in the occupied Palestinian territories (Albanese, 2024). This duty also applies to corporations that must respect international humanitarian law. States' failure to comply does not exonerate corporate responsibilities under international law and the UNGP (United Nations, 2024).

From this derives a *prima facie* responsibility for corporations “to not engage and/or to withdraw totally and unconditionally” from any existing collaboration with any part of the occupation. Any companies' involvement with any level of the occupation is inevitably linked to violations of peremptory norms of international law and of international criminal law. Non-compliance exposes them to the risk of being found liable for violations of Palestinian right to self-determination and of the prohibition of annexation of Palestinian territory, as well as of maintenance of an unlawful occupation and therefore the crime of aggression and associated human rights violations (Albanese, 2025).

Furthermore, corporations and their executives can also be liable for “crimes of apartheid and genocide and other ancillary crimes and violations”, as demonstrated by the ICJ Provisional Measures and ICC Arrest Warrants, clarifying that any involvement with Israel's economy occurs in full awareness of the possibility of being implicated in serious international crimes (Albanese, 2025).

A proper identification of a violation of international law is essential: companies must assess whether specific human rights breaches may simultaneously constitute broader, systemic infringements of international law (Albanese, 2025). The UNGP state that the gravity of the human rights impacts will define corporate liability and whether the measures “taken to prevent, cease and remedy the serious violations” were sufficient. A corporate entity may appear to be “contributing to home demolitions and forced displacement” whilst also being directly associated with upholding “*apartheid, racial discrimination and genocide, or contributing to those violations, when systematic forced displacement is a constitutive component of such crimes*” (Albanese, 2025, p. 31). Furthermore, they are also inherently contributing to the violation of the right to self-determination.

International law permits criminal prosecutions of transnational companies for certain crimes, including genocide, apartheid, financing terrorism, organised crime, and corruption. Corporate entities and/or their executives

failing to comply with their obligations under international law may be implicated in more severe violations triggering direct criminal liability or amounting to complicity or aiding and abetting. This may encompass “*instigating, moral support, [...] furnishing aid or assistance for or procuring the means for the commission of a crime or the creation of conditions necessary for atrocity crimes to occur*” (Albanese, 2025, p.32).

International jurisprudence has established criminal liability for such forms of complicity where the aid or assistance had a “material effect on the commission of the crime” and the entity had knowledge of “how its services or activities will be utilised, and the effect on the commission of the crime”. No “intention” threshold is required: “logistical, financial or operational support” with “constructive knowledge that the principal perpetrators were engaged in a given crime” is sufficient. Holding financial and managerial authority over a company involved in the offence can be the ground for individual criminal responsibility, and claiming to have been merely fulfilling commercial agreements is not a valid legal defence (Albanese, 2025, pp. 32–33).

Albanese stresses that Israel’s settler-colonial enterprise is rooted in the “normalisation of the illegal” and that the “*sustainment of any relationships and activities in such a serious context, contributes to legitimating Israeli conduct and furthering impunity*” (Albanese, 2025, p. 39) fuelling more atrocious acts.

3. From The Economy of Settler-Colonial Occupation to the Economy of Genocide

Albanese underlines that corporations have always contributed to the displacement and replacement of the Palestinian population through Israel’s settler-colonial and genocidal actions, from the Nakba until today (Albanese, 2025).

Companies have increasingly, especially after 1967, “materially contributed” to Israel’s Palestinian dispossession and displacement by supplying Israel with the arms and machinery necessary to “*destroy homes, schools, hospitals, places of leisure and worship, livelihoods and productive assets, such as olive groves and orchards, to segregate and control communities and to restrict access to natural resources*” (Albanese, 2025, pp. 5–6) — an integral part of the denial of Palestinian sovereignty over their natural resources. By militarising and incentivising unlawful Israeli presence in the territories occupied af-

ter 1967, the corporate sector has effectively helped engineer the conditions for Palestinian ethnic cleansing.

The Special Rapporteur also states that the Israeli occupation regime established an economy of occupation in the territories occupied after 1967, effectively turning them into a captive market through “draconian restrictions” across all key sectors — e.g. trade and investment, tree planting, fishing and water — that have contributed to prostrating agriculture and industry. The economy of settler-occupation is based on the violent dispossession and exploitation of *“Palestinian labour and resources, that are degraded and diverted, in order to build and power colonies, whilst selling and marketing derived goods and services in Israel, the occupied Palestinian territory and globally”* (Albanese, 2025, p. 6).

Albanese situates this within the normalisation process which, following the Oslo II Accords and in particular “the Israeli-Palestinian Interim Agreement on the West Bank and the Gaza Strip”, institutionalised Israel’s monopoly over “61 per cent of the resource-rich West Bank (Area C)”. Israel gains from this exploitation, while it costs the Palestinian economy at least 35 per cent of its GDP¹⁰ (Albanese, 2025, p.6).

According to the UN Working Group on Business and Human Rights and the UN Special Rapporteur, this political economy was “always eliminatory” but has now evolved into “genocidal mode” (OHCHR, 2025, p. 39).

Following the most recent genocidal escalation from October 2023, the “long-standing systems of control, exploitation and dispossession” progressed into “economic, technological and political infrastructures mobilized to inflict mass violence and immense destruction”. Consequently, transnational corporations that previously “enabled and profited from Palestinian elimination and erasure within the economy of occupation” and failed to disengage “are now involved in the economy of genocide” (Albanese, 2025, p. 6).

The UN Special Rapporteur identified eight key sectors on which the settler-colonial economy of displacement and replacement has been rooted, now fully adapted to its genocidal practices. Albanese grouped them in three stages: displacement, replacement, and enablers, as follows.

¹⁰ In 2026 the UNCTAD published a new report stating that over the last years across all the Palestinian territories beyond the Green Line “by 2024, GDP had fallen to 70% of its 2022 level, erasing 22 years of economic progress. GDP per capita declined sharply, while unemployment surged to 80% in Gaza and 35% in the West Bank, pushing Gaza’s entire population into multidimensional poverty” with Gaza’s GDP in 2024 that shrank to just 13% of its 2022 level. (United Nations Conference on Trade and Development, 2026)

3.1 Displacement

Post-October 2023, weapons and military technologies used to advance Palestinian expulsion became tools for mass killing and destruction, rendering Gaza and parts of the West Bank uninhabitable. “Surveillance and incarceration technologies”, ordinarily “used to enforce apartheid” segregation, became instruments for the indiscriminate targeting of the Palestinian population. “Heavy machinery”, previously utilised for “house demolitions, infrastructure destruction and resource seizure in the West Bank”, is now also being employed in Gaza to “obliterate the urban landscape”, hindering the return of the displaced inhabitants and the restoration of community life (Albanese, 2025, p. 7).

3.1.1 *The Military Sector: The Business of Elimination*

Militarised violence created the State of Israel and remains the engine of its settler-colonial project, which in its political economy has led to the military-industrial complex becoming “the economic backbone of the State”. International and Israeli arms industries, “collaborating and competing”, have developed increasingly sophisticated systems to expel Palestinians from their land. These international partnerships provide advanced technologies, strengthening Israel’s capacity to carry out settler-colonial expansion, apartheid, and genocidal assault in Gaza (Albanese, 2025, p.7).

These partnerships are mutually beneficial: in the context of “prolonged occupation and repeated military campaigns”, with little if any judicial oversight, the occupied Palestinian territory has provided the ideal testing ground for world-class military tools “then marketed as battle-proven”, ranging from air defence platforms and drones to targeting tools powered by artificial intelligence (AI) and the US-led F-35 programme. Israel was the first to use combat F-35 jets in 2018 and the first to test its “beast mode” in 2025. The components and parts are developed as part of a global chain supplying the Israeli F-35 fleet, which Israel customises and maintains in partnership with Lockheed Martin (see Section 6) and domestic companies. The procurement programme is led by United States-based Lockheed Martin, alongside at least 1,650 other companies, including Italian manufacturer Leonardo S.p.A., and eight states. Since October 2023, F-35s and F-16s fighter jets have provided Israel with unparalleled aerial power to drop roughly 85,000 tons of bombs, much of it unguided, killing and injuring over 179,411 Palestinians and obliterating Gaza (Albanese, 2025).

Regarding Italy, a dossier published in March 2026, entitled “Made in Italy, delivered to Israel: Italian military and energy transfers fueling genocide”,

claims that between 2024 and 2025, Leonardo S.p.A. alone sent more than “150 shipments of aerospace and avionics components, including deliveries to Elbit Systems’ F-15 component production lines. These loads, supporting one of the main attack platforms used” to bomb Gaza, departed from Milan Malpensa Airport and Rome Fiumicino, and consisted of “critical components for aircraft structures and specialised electronics, including actuators for fighter aircraft cockpits, floor assemblies, dual-mode anti-collision lights and test sets for flight control systems” (People’s Embargo for Palestine et al., 2026, p. 2).

Albanese also underlines that shipping companies — such as Danish A.P. Moller and Maersk A/S — have no secondary role, as they transport components, parts, arms, and raw materials, allowing a steady flow of US-supplied military equipment throughout the genocide (Albanese, 2025).

The Special Rapporteur concludes that, given Israel’s increase of 65 per cent in military spending from 2023 to 2024, “*the ongoing genocide has been a profitable venture*” (Albanese, 2025, p.9) both for its domestic arms companies, such as Elbit Systems and Israel Aerospace Industries, and for international ones. This trajectory is consistent with the broader pattern documented by Tian et al. (2024): estimated global military expenditure surpassed \$2.4 trillion in 2023 — the highest level ever recorded by SIPRI — with Israel recording a 24 per cent increase in military spending in that year alone, driven by the Israel– Hamas war, against a backdrop of the United States maintaining military expenditure of \$916 billion, more than the combined spending of the nine next-largest spenders worldwide.

3.1.2 Surveillance and Carcerality: The Dark Side of the “Start-up Nation”

As of May 2026, Israel detains with no fair trial over 9,384 Palestinian political prisoners, of which 3,376 are in administrative detention (HaMoked, 2026). The systematic arbitrary deprivation of freedom, torture, and sexual violence¹¹ targeting Palestinians is upheld in violation of the Hague Regulations, the Third and Fourth Geneva Conventions, the International Covenant on Civil and Political Rights, the International Covenant against Torture, and can amount to crimes against humanity under the Rome Statute (Albanese, 2023a; Albanese & Elia, 2023).

¹¹ For more information on the mass administrative detention see: <https://docs.un.org/en/A/HRC/53/59> (United Nations, 2023); See “Israel’s systematic use of sexual, reproductive and other forms of gender-based violence since 7 October 2023” <https://www.ohchr.org/sites/default/files/documents/hrbodies/hrcouncil/sessions-regular/session58/a-hrc-58-crp-6.pdf> for information on the widespread use of sexual violence in places of detention and beyond (United Nations, 2025b)

Albanese & Elia (2023, p. 121) describe the massive surveillance and restrictions imposed against Palestinians as a *prison continuum* extending beyond jails to the entire Palestinian territory.

Tech companies have been profiting from the unique testing ground for military technology offered by the occupation, mass-imprisonment, and blockade of Gaza, contributing to the increased automatised of Israel's repression of Palestinians by providing dual-use infrastructures to integrate mass data collection and surveillance. This has resulted in the creation of cutting-edge carceral, facial recognition, and mass surveillance tools — ranging from “closed-circuit television (CCTV) networks, biometric surveillance, advanced tech checkpoint networks, ‘smart walls’ and drone surveillance to cloud computing, artificial intelligence and data analytics” — also employed on the ground by the IDF (Albanese, 2025, p. 9; Loewenstein, 2023). As Chapter 11 of this volume documents, these technologies, once tested in the occupied Palestinian territory, are now exported and commercialised globally: the Palestine Laboratory's output is a global governance risk (see Chapter 11, §1.1).

Companies such as AnyVision (now Oosto) and CorsightAI have tested their biometric recognition systems at checkpoints to profile Palestinians, implement mass surveillance, and subsequently export these tools to repressive police forces worldwide. Similarly, the Israeli Supercom sold ankle bracelets during Covid — openly advertised as tested on detainees — to Finland and the United States (Loewenstein, 2023; Albanese, 2025).

Israeli tech companies often originate from the military sector. The NSO Group's “Pegasus spyware”, created for covert smartphone surveillance, has been tested on and employed against Palestinians and sold worldwide for spying on politicians, journalists, and human rights activists. The central database of the Population and Immigration Authority has been run and “upgraded” by IBM Israel since 2019, “enabling collection, storage and governmental use of biometric data on Palestinians, and supporting the discriminatory permit regime of Israel” (Albanese, 2025, pp. 9–10).

Microsoft has been incorporating its systems and civilian tech across the IDF since 2003 and its tools are widely used by police, prisons, universities, and schools, including in colonies beyond the UN-accepted border. To secure supply of key technological infrastructure, in 2021 Israel awarded Alphabet Inc. (Google) and Amazon.com, Inc. a \$1.2 billion contract (Project Nimbus), heavily financed by Ministry of Defence expenditure. Microsoft, Alphabet, and Amazon offer the Israeli government access to their cloud and AI resources, strengthening capabilities for data processing, decision-making, and surveillance. Israel-located servers ensure data sovereignty and a

shield from accountability under contracts stipulating minimal constraints or supervision (Albanese, 2025, p. 10–11).

Moreover, the IDF has created AI systems — such as “Lavender”, “Gospel”, and “Where’s Daddy?” — designed for data-processing and identifying target lists, redefining modern warfare and highlighting AI’s dual-use nature. Palantir Technologies Inc. expanded its assistance to the IDF after October 2023. The report under analysis claims it may have supplied automated predictive policing technology and its AI Platform, which enables live “battlefield data integration for automated decision-making”. In January 2024, Palantir announced a new strategic partnership with Israel and held a board meeting in Tel Aviv in solidarity; in April 2025, Palantir’s Chief Executive Officer responded to accusations that Palantir had killed Palestinians in Gaza by saying, “*mostly terrorists, that’s true*” — both incidents indicative of executive-level knowledge and purpose vis-à-vis the unlawful use of force by Israel (Albanese, 2025).

The latest genocidal escalation led to a documented surge of Israeli military tech start-ups, recording a 143 per cent increase in 2024 alone, with technological commodities amounting to 64 per cent of Israeli exports from October 2023 (Albanese, 2025, pp. 10–11).

3.1.3 Civilian Guise: Heavy Machinery in Service of Settler-colonial Destruction

Civilian technologies have long served as dual-use tools of settler-colonial occupation. Israeli military operations rely heavily on equipment from leading global manufacturers to forcibly remove Palestinians from their land, systematically demolishing homes, public facilities, farmland, roads, and other life-sustaining infrastructure. Since the onset of the latest genocidal escalation, civilian equipment has been essential to destroying 81 per cent of cropland and 70 per cent of structures in Gaza (Albanese, 2025).

Caterpillar Inc. had been supplying Israel with machinery employed “*to demolish Palestinian houses and infrastructure*”. Evidence indicates that following October 2023, imported equipment was utilised to conduct mass razing of homes, mosques, and vital infrastructure, to assault hospitals, and to bury alive Palestinians. Nevertheless, in 2025, Caterpillar sealed with Israel another multi-million-dollar contract (Albanese, 2025, pp. 12–13).

Similar contributions were made by Hyundai and Volvo. All these transnational corporations have persevered in their provisions notwithstanding overwhelming evidence of Israel’s illegal usage, as well as numerous requests from civil society groups to sever ties. Passive suppliers have thereby become deliberate contributors to a system of displacement (Albanese, 2025, p. 13).

3.2 Replacement

Albanese outlines that companies have not only been directly involved in the obliteration of Palestinian life and livelihood, but have also actively supported their replacement: contributing to the construction of colonies and their infrastructure, extracting and selling materials, energy and agricultural products, whilst also normalising settlements as ordinary holiday venues. These activities have contributed to the unparalleled growth in Israel's settlement expansion over the past three years, which peaked since Israel doubled the budget for colony construction, with competence moved from the military to the civilian government. Transnational companies have continued fuelling and benefiting from the manufacturing of living conditions aimed at erasing the Palestinian population (Albanese, 2025).

3.2.1 Construction: Home on Stolen Land

Israel's replacement of the Palestinian indigenous population is also facilitated by companies powering trade with the over 501 colonies and illegal outposts built beyond the Green Line (PeaceNow, 2026).

During the first year of genocide in Gaza alone, Israel established at least 57 new colonies and outposts through Israeli and international corporations' provision of machinery and raw materials as well as logistical support in building roads and public transport facilities essential to the foundation and enlargement of settlements, linking them to Israel whilst excluding and segregating Palestinians.

For at least a decade, Caterpillar, HD Hyundai, and Volvo have been supplying excavators and heavy equipment used to build illegal settlements. In addition, the German Heidelberg Materials AG, through its subsidiary Hanson Israel, was implicated in the pillage of "*millions of tons of dolomite rock from the Nahal Raba quarry*" expropriated from Palestinian villages in the West Bank. In parallel, real estate firms market premises in illegal settlements to Israeli and international purchasers alike. Keller Williams Realty LLC, operating via its franchisee KW Israel, builds and sells thousands of houses in illegal settlements (Albanese, 2025, p. 14).

3.2.2 The Grip on Natural Resources: The Incubator of Conditions of Life Calculated to Destroy

Since 1967, Israel has systematically controlled Palestinian natural resources, building facilities that integrate the settlements into Israeli national resource systems whilst cementing "*Palestinian dependency*" designed to evict and control them. From October 2023, this "*engineered dependency*" was

“operationalized for genocide”, including through the near-complete halting of access to water, electricity, and fuel, contributing to creating living conditions calculated for Palestinian erasure. The parallel tightening of restrictions on resources — water, energy, land — in the West Bank must therefore be considered in conjunction with the genocide in Gaza (Albanese, 2025).

Israel compels Palestinians to buy water at heightened tariffs with irregular provision. Mekorot, an Israeli national company, holds a water monopoly in the West Bank and Gaza. For at minimum six months after October 2023, the company supplied Gaza at only 22 per cent of its normal volume, cutting off water to Gaza City and other areas 95 per cent of the time, thus turning water into a genocidal weapon (Albanese, 2025).

Israel requires fuel and coal imports, provided by international energy companies, that have been fuelling the “energy-intensive” ongoing genocide. Gaza was already made heavily dependent on Israeli supply lines: its power plant generated merely 10–20 per cent of its total energy needs. During the genocide, Israel impeded energy supply to most of the Gaza Strip, preventing the operation of most water pumps, hospitals, and transport, resulting in the breakdown of sanitation systems, contributing to a resurgence of poliomyelitis, and forcing essential desalination facilities to close (Albanese, 2025).

Through the provision of coal, gas, oil, and fuel, energy corporations have been supporting Israeli civilian infrastructures weaponised to consolidate permanent annexation and fund “*the energy-intensive tech-driven obliteration of Gaza*” (Albanese, 2025, p. 17). The apparently civilian character of these cooperations does not erase companies’ liability. The primary suppliers of crude oil are BP and Chevron.

In 2020, the Office of the High Commissioner for Human Rights established a database listing business enterprises that have directly and indirectly enabled, facilitated and profited from the construction and growth of the settlements, identifying ten specific types of activities.

In its most recent version, the database lists 158 companies, among which:

- two companies that, on the basis of state-awarded contracts, supply service stations in Israel and the occupied Palestinian territory, including illegal settlements and the army, from the Haifa refinery;
- Paz Retail and Energy Ltd., whose subsidiary supplies, through the Ashdod refinery, jet fuel to the IDF Air Force operating in Gaza (OHCHR, 2020).

3.2.3 Trading the Fruits of Illegality

Israel has used kibbutzim and agricultural outposts for territorial expropriation and the replacement of Palestinians. State-led extractivism and land-grabbing have made agribusiness flourish, manufacturing commodities and technologies that benefit settler-colonial aims, strengthening market hegemony and driving international capital, whilst simultaneously uprooting Palestinian agrarian infrastructures and hastening their displacement.

Companies like Tnuva — the preeminent food conglomerate in Israel, now majority-owned by Chinese Bright Food (Group) Co., Ltd. — catalyse and profit from territorial expropriation by sourcing products from the colonies and exploiting the resulting captive Palestinian market to establish market dominance. Palestinian dependence on the Israeli dairy industry increased 160 per cent in the decade following destruction caused by Israel to Gaza's dairy industry, amounting to sector losses estimated at \$43 million. Tnuva has absorbed the loss of the Gaza market, failing to use its substantial leverage to influence the situation.

Netafim — a global leader in drip irrigation technology, now 80 per cent owned by the Mexican company Orbia Advance Corporation — has designed its agritech in concert with Israel's expansion imperatives. Whilst maintaining a global image of sustainability, Netafim technology has enabled intensive exploitation of water and land in the West Bank, further depleting Palestinian natural resources, whilst being refined through collaboration with Israeli military-technology firms. In the Jordan Valley, Netafim-aided irrigation systems have facilitated Israeli crop expansion, whilst Palestinian farmers — denied water access and with 93 per cent of their land unirrigated — are pushed out, unable to compete. Such irrigation techniques also threaten to exhaust the Jordan River and the Dead Sea.

Companies such as Tnuva and Netafim continue to manufacture food security for Israelis whilst the food system to which they belong causes food insecurity — and famine — for others (Albanese, 2025).

3.2.4 Global Retail

Israeli goods, including those illegally originating from the territories that the UN recognises as occupied, freely circulate in world markets through major retailers, often without scrutiny. Despite the stipulations outlined in UN Security Council Resolution 2334 (United Nations, 2016), many countries do not require differentiation between products sourced from Israel and those from its colonies. To avoid “*growing backlash*”, corporations use

deceptive labels, barcodes, and supply-chain mixing to conceal the products' provenance, thus "*making occupation shelf-ready*" (Albanese, 2025, p. 19).

The violation of the Palestinian right to self-determination — including permanent sovereignty over their natural resources — and of the principle of usufruct trigger third parties' duty of non-recognition and of not rendering aid or assistance, implying at minimum that settlement produce should have been banned from the EU internal market decades ago (Kassoti, 2017). In this regard, a judgment from the Court of Justice (Case C-363/18) mandates that products originating from Israeli settlements must be labelled accordingly, whilst allowing their trade within the EU market, shifting the responsibility onto the individual consumer.¹² However, the labelling requirement, even if enforced, would not be sufficient to comply with international obligations: "*given the illegality of the colonies under international law, these products should not be traded at all*" (Albanese, 2025, p. 19). It has been shown to be systematically evaded, whilst the EU remains Israel's main trade partner and the latter benefits from preferential treatment under the EU-Israel Association Agreement (Oxfam Ireland, 2025).

In the economic engine of racial capitalism, a key role is also played by the world's logistics giants — such as A.P. Moller – Maersk A/S — which transport goods from settlements and OHCHR database-listed companies directly to external markets (Palestine Youth Movement, 2025), fostering the profitability of settler-colonialism (Albanese, 2025).

3.2.5 Occupation Tourism

Prominent online holiday platforms profit directly from the occupation by marketing tourism that sustains the colonies, marginalises Palestinians, advances colonial narratives, and legitimises annexation. The OHCHR database has listed Booking.com and Airbnb since 2020, as both include illegal colonial properties situated beyond the Green Line in their catalogues.

Booking.com's inventory in the West Bank more than doubled — from 26 listings in 2018 to 70 by mid-2023 — whilst in East Jerusalem it grew three-fold, reaching 39 in 2024. Despite having introduced the label "Palestinian

¹²It is analytically instructive that both Israeli settlements in Palestine and Moroccan settlements in Western Sahara follow the same pattern: the enforcement of labelling requirements is *de facto* left at the hands of the occupying power (Oxfam Ireland, 2025; Western Sahara Resource Watch, 2025). By contrast, certificates issued by the occupying authority in Northern Cyprus have been deemed invalid by the Court of Justice of the European Union (1994). The disomogeneity of treatment across these three cases of occupation is itself evidence that the perimeter of regulatory enforcement is determined by political considerations rather than by consistent normative principle.

territory, Israeli settlement”, it persists in capitalising on illegal settlements and faces criminal complaints in the Netherlands for laundering profits.

Airbnb expanded its revenues from settlements — from 139 facilities in 2016 to 350 in 2025 — despite having temporarily removed them in 2018. It now claims to be donating earnings to “humanitarian” causes, converting colonial profiteering into “*humanitarian-washing*” (Albanese, 2025, pp. 19–20).

Occupation tourism is associated with the obstruction of Palestinian access to land and the endangering of surrounding villages. “*In Tekoa, Airbnb enables settler promotion of a ‘warm and loving community’, whitewashing settler violence against the neighbouring Palestinian village of Tuqu*” (Albanese, 2025, p. 20).

3.3 Enablers

The Special Rapporteur classifies as “enablers” those that have long supported the settler-colonial occupation through intellectual capital, discourses, practical expertise, and funding, and that have additionally neglected to stop sustaining, profiting from, and normalising “*the economy operating in genocidal mode*”. This process entails various sectors: financial, research, legal, consulting, media, and advertising firms. Within the present report, Albanese focused on the financial and academic sectors (Albanese, 2025, p. 20).

3.3.1 Financing the Violations

Despite widespread pledges to the United Nations Global Compact (see Chapter 3 of this volume) and the Principles for Responsible Investment, the international financial sector continues to underwrite essential funding to both the Israeli state and enterprises complicit in the occupation and apartheid regime. Treasury bonds are the primary mechanism for financing the genocide in Gaza.

Between 2022 and 2024, Israel’s military budget grew from 4.2 per cent to 8.3 per cent of GDP, driving the public budget into a 6.8 per cent deficit (Albanese, 2025, p. 20). International financial interventions have therefore been crucial in financing the genocide and settlement expansion.

BlackRock and Vanguard rank among the largest institutional investors “*in arms companies pivotal to the genocidal arsenal of Israel*” (Albanese, 2025, p. 25). Some of the world’s largest banks — including BNP Paribas and Barclays — underwrote Israel’s international and domestic treasury bonds, pushing market confidence and allowing Israel to suppress “*its interest rate premium, despite a credit downgrade*”, contributing to the funding of Israel’s

crimes. Major “*sovereign wealth and pension funds invested public and private savings in the genocidal economy*”, despite officially maintaining “*ethical guidelines*” (Albanese, 2025, p. 22).

Global insurance companies, including Allianz and AXA, hold substantial investments in shares and bonds entangled in the occupation and genocide, partly as capital reserves for policyholder claims and regulatory compliance, but primarily to maximise financial yields. They also mitigate risks for other corporations operating in Palestine, thereby aiding international law violations. This financial support is propped up by the deliberate omission of international abuses in Palestine from their environmental, social and governance (ESG) investing evaluations — allowing responsible investment funds to claim ESG compliance whilst underwriting Israeli government bonds and shares of companies engaged in illegal activities in Palestine.

The Norwegian Government Pension Fund — the world’s largest sovereign wealth fund after October 2023, increased its investment in Israeli companies by 32 per cent. By the end of 2024, it had \$121.5 billion — 6.9 per cent of its entire assets — invested in companies named in the report (Albanese, 2025, p. 22). The Caisse de dépôt et placement du Québec, managing \$328.9 billion in pension funds for six million Canadians, had nearly \$6.67 billion invested in such companies, notwithstanding its sustainability and human rights policies. From 2023 to 2024, it virtually tripled its investment in Lockheed Martin, quadrupled its stake in Caterpillar, and multiplied by ten its investment in HD Hyundai (Albanese, 2025, p. 22).

Overall, these financial actors channel billions of dollars in sovereign debt and corporate investments that directly sustain Israel’s occupation and genocidal policies.

3.3.2 *Knowledge Production and Violation Legitimization*

The report addresses the role of universities in the normalisation of Israel’s settler colonialism in Palestine, challenging the defensive argument “of academic neutrality” and claiming that it has concealed “Palestinian erasure”. International elite universities, especially from global-minority countries, partner with Israeli institutions in fields impacting Palestinians, and many have upheld these ties despite the ongoing genocide.

Albanese (2025) stresses that Israeli universities, especially in the fields of law, archaeology, and Middle Eastern studies, sustain the ideology underpinning apartheid and foster government-aligned discourses, deleting Palestinian history and legitimising occupation strategies. Science and technology departments serve as research and development hubs for collaborations between the IDF and weapons industries — including Elbit Systems, Israel

Aerospace Industries, IBM, and Lockheed Martin — contributing to producing tools for “*surveillance, crowd control, urban warfare, facial recognition and targeted killing*”, effectively tested on Palestinians (Albanese, 2025) and subsequently exported globally (Loewenstein, 2023; see Chapter 11, §1.1 of this volume).

The European Commission’s Horizon Europe programme actively facilitates collaboration with Israeli institutions, including those complicit in apartheid and genocide. Since 2014, the European Commission has allocated within this framework over \$2.4 billion to Israeli entities, among which the Ministry of Defence. Universities in the European Union both profit from and consolidate this entanglement, as exemplified by the Technical University of Munich (Albanese, 2025).

Many universities still maintain close partnerships with firms directly supplying the Israeli military — such as the University of Edinburgh, which collaborates with Leonardo S.p.A. and Ben-Gurion University, sharing AI and data science research that directly links it with assaults on Palestinians.

The author stresses that it is unfeasible to separate the “expertise” provided by Israeli partners in specific projects from the context of abuses in which it is acquired and employed. Whilst the report only included a portion of the collected information, Albanese (2025, par. 86) acknowledged the essential role of students and staff in holding universities to account, noting that the repression of campus protest movements appears more plausibly motivated by the protection of institutional financial interests than by the stated concern for combating antisemitism. The selective silence of most academic and professional associations on the genocide in Gaza — documented by De Vogli et al. (2025) in *The Lancet* as a governance failure in the production of knowledge about mass atrocity — constitutes a further dimension of the enabler function that this section has examined.

4. Conclusions

Had transnational corporations fulfilled their heightened due diligence obligations — considering the unlawful occupation and apartheid regime — they would have halted all engagements with Israel several decades ago. As the ICJ underlined, any engagement with Palestinians and their land must be anchored to the respect of their right to self-determination.

Under the framework established by the UNGPs and developed in this chapter’s legal analysis, the obligations of corporate entities cannot be as-

sessed in isolation from the character of the context in which they operate. Where the ICJ has declared that context — Israel’s entire presence in the occupied Palestinian territory — to be unlawful in its entirety, the heightened HRDD standard requires that corporate entities address this fundamental illegality as the starting point of any due diligence process, not as a background variable (International Court of Justice, 2024; Albanese, 2025, Annex, para. 47).

The report concludes that the aggregate conduct of corporate actors across these sectors constitutes what international criminal law terms a “joint criminal enterprise” — a framing that, whilst contested in its application to corporate entities, reflects the doctrinal trajectory identified in Section 2 of this chapter and in the post-Holocaust industrialists’ trials at Nuremberg (Albanese, 2025, para. 91). The *“enduring ideological, political and economic engine of racial capitalism has transformed the Israeli displacement-replacement economy of occupation into an economy of genocide”* (Albanese, 2025, para. 91). This is a system in which the acts of each company ultimately contribute to a whole economy that drives, supplies, and enables this genocide.

The report names 45 companies, but acknowledges that this constitutes *“a fraction of a much deeper structure of corporate involvement, profiteering from and enabling these violations”* in Palestine. It exposes the deep entrenchment between Israeli apartheid and militarism and transnational businesses — ranging from supplying weapons to commit the genocide and facilitating demolitions, to fuelling the energy-intensive genocide, supporting settlement expansion and violent annexation, normalising illegal colonies, and allowing the trade of products originating from colonies beyond the Green Line. *“Business continues as usual, profiting from an economy now operating in genocidal mode”*, but *“nothing about this system [...] is neutral”* (Albanese, 2025, pp. 25–27).

The entities named in the report constitute a fraction of a much deeper structure of corporate involvement. Had they exercised due diligence, corporate entities would have ceased involvement with Israel long ago. Today, the demand for accountability is all the more urgent: any investment sustains a system of serious international crimes (Albanese, 2025, para. 92).

It is impossible to separate businesses’ human rights obligations from the Israeli illegal settler-colonial enterprise in the occupied Palestinian territory, which now functions as a genocidal machine, despite the International Court of Justice having ordered that it be fully and unconditionally dismantled. Corporate relations with Israel must cease until the occupation and apartheid end and reparations are made. The corporate sector, including its

executives, must be held to account as a necessary step towards ending the genocide and disassembling the global system of racialised capitalism that underpins it (Albanese, 2025, para. 93)

5. Recommendations

The following recommendations are reproduced directly from the report of the Special Rapporteur (Albanese, 2025, paras. 94–99):

94. The Special Rapporteur urges Member States:

- a. To impose sanctions and a full arms embargo on Israel, including all existing agreements and dual-use items such as technology and civilian heavy machinery;*
- b. To suspend or prevent all trade agreements and investment relations, and impose sanctions, including asset freezes, on entities and individuals involved in activities that may endanger the Palestinians;*
- c. To enforce accountability, ensuring that corporate entities face legal consequences for their involvement in serious violations of international law.*

95. The Special Rapporteur urges corporate entities:

- a. To promptly cease all business activities and terminate relationships directly linked with, contributing to and causing human rights violations and international crimes against the Palestinian people, in accordance with international corporate responsibilities and the law of self-determination;*
- b. To pay reparations to the Palestinian people, including in the form of an apartheid wealth tax along the lines of post-apartheid South Africa.*

96. The Special Rapporteur urges the International Criminal Court and national judiciaries to investigate and prosecute corporate executives and/or corporate entities for their part in the commission of international crimes and laundering of the proceeds from those crimes.

97. The Special Rapporteur urges the United Nations:

- a. To comply with the International Court of Justice advisory opinion of 2024*
- b. To include all entities involved in Israeli unlawful occupation in the OHCHR database (to be properly accessible on the OHCHR website)*

98. The Special Rapporteur urges trade unions, lawyers, civil society and ordinary citizens to press for boycotts, divestments, sanctions, justice for Palestine and accountability at the international and domestic levels; together, the people of the world can end these unspeakable crimes.

99. The present report is written at the cusp of a profound and tumultuous transformation. Globally witnessed atrocities require urgent accountability and justice, which demand diplomatic, economic and legal action against those who have maintained and profited from an economy of occupation turned genocidal. What comes next depends on everyone. (Albanese, 2025, paras. 94–99)

6. Case Study on The Business of War: Examining Lockheed Martin's Role in the Arms Trade with Israel¹³

The global arms trade presents one of the most complex challenges for human rights and ethical business practices, particularly in conflict zones where regulatory frameworks are often weak or absent. Arms sales to regions marred by instability can create profitable opportunities for defence contractors whilst exacerbating violence and humanitarian crises. In this context, corporate actors like Lockheed Martin — the world's largest defence contractor — play a central role, as their products and influence extend across multiple conflict zones.

This case study examines Lockheed Martin's involvement in arms transfers to conflict zones, using Israel as a focal point to illustrate how corporate practices can undermine human rights regulations. It examines the structural mechanisms that enable the company to shape defence policies and the international arms landscape, often amplifying cycles of violence and exacerbating humanitarian crises. The core issue extends far beyond the production of arms: it addresses defence policies through strategic lobbying.

The deployment of Lockheed Martin's weapons to Israel — including fighter jets, missiles, and rocket systems — has been implicated in serious human rights violations, revealing a wide gap between stated principles and operational realities. By examining these issues, the case study calls for a reassessment of corporate governance within the defence industry, advocating for practices that align business strategies with ethical responsibilities.

The findings shed light on a complex web between corporate power, government influence, and human rights, and emphasise the pressing need for

¹³ Section 6 of this chapter — Case Study on The Business of War: Examining Lockheed Martin's Role in the Arms Trade with Israel — is based on a group assignment prepared by Dora Almeida Valente da Silva, Mariana Carvajal Sojo, Oumaima Amezgar, master's students at the University of Padova, within the Master's Programme in Human Rights and Multi-level Governance, a.y. 2023/24. The Author gratefully acknowledges their contribution in documenting this case study. The analytical framing, integration with Sections in this chapter, and editorial adaptation are the responsibility of the Author.

enforceability of global standards in security and defence to ensure corporate accountability and uphold human dignity.

6.1 Case Background

Since 1947, widespread ethnic cleansing targeted the non-Jewish population in Palestine, leading to the forced displacement of hundreds of thousands. This ongoing process continues to exhibit extensive violence, including killings, the destruction of numerous villages and towns, widespread looting, the denial of the right to return for displaced Palestinians and of their right to self-determination including sovereignty over their natural resources. The actions carried out by Israel in the region have been described by the Special Rapporteur on the situation of human rights in the Palestinian territories as “indiscriminate”, “annihilating”, and “intentional”. These actions have not only targeted the lives and livelihoods of the population but also destroyed essential infrastructure for the survival and continuity of Palestinian communities (Albanese, 2023a). The devastation in Palestine is not simply a byproduct of the conflict; it is also enabled by systematic arms transfers especially from Global Minority countries, with Lockheed Martin playing a significant role in this exchange of weaponry. Despite ongoing international condemnation of Israel’s military actions, and criticism linking it to potential human rights violations, arms sales have continued taking place, raising serious questions about the responsibility of defence contractors in perpetuating violence in conflict-affected regions.

Lockheed Martin operates within a complex framework of national and international regulations governing arms sales. Despite federal regulations such as the Arms Export Control Act (AECA) and the Foreign Assistance Act (FAA), gaps in transparency often allow human rights abuses to go unchecked. Similarly, arms transfers are conditioned by certain procedural standards, such as the Congressional Notification Period¹⁴, which are designed to scrutinize important security assistance decisions, promote transparency, and foster bipartisan dialogue on human rights and global security. However, several arms transfers continue to present challenges in ensuring transparency and accountability, as they bypass control mechanisms, either by not meeting the threshold value requiring congressional notification or by utilizing emergency or “extraordinary” provisions¹⁵, which often results

¹⁴ Under Section 36(b) of the AECA, transactions exceeding \$14 million require congressional notification 30 calendar days before finalisation — a period reduced to 15 days for a select group of partners that includes Israel. See: <https://crsreports.congress.gov/product/pdf/IN/IN12359>

¹⁵ In cases of “emergency”, the President has the possibility of waiving the congressional

in billions of dollars in annual arms exports with minimal congressional oversight or public scrutiny (Matamis, 2024).

The international framework governing arms sales, including the Arms Trade Treaty (ATT) and the United Nations Guiding Principles on Business and Human Rights (UNGP, see Chapter 3 (§4), emphasizes the importance of ensuring that arms are not used to commit war crimes or human rights abuses. However, the ATT's enforcement mechanisms and national oversight structures are often weak, allowing significant arms sales to proceed without sufficient accountability. Lockheed Martin's involvement in the "annihilatory violence" (Albanese, 2024) reflects a broader problem in the defence industry, where companies often deflect responsibility by claiming to be following deficient government policy. This is particularly troubling given defence contractors' significant influence on policy decisions, through lobbying efforts to increase defence spending. Ultimately, this creates a cycle in which corporate interests, rather than ethical considerations or human rights, drive the decision-making process.

6.2 Introducing Lockheed Martin

For over 15 years, Lockheed Martin has maintained its position as the world's largest military contractor. In 2020 alone, the company secured \$58.2 billion in contracts, a figure representing more than 10% of total global arms sales in the same year — far surpassing its closest competitors, Raytheon and Boeing, which reported sales of \$36.8 billion and \$34.1 billion respectively (Marksteiner et al., 2021).

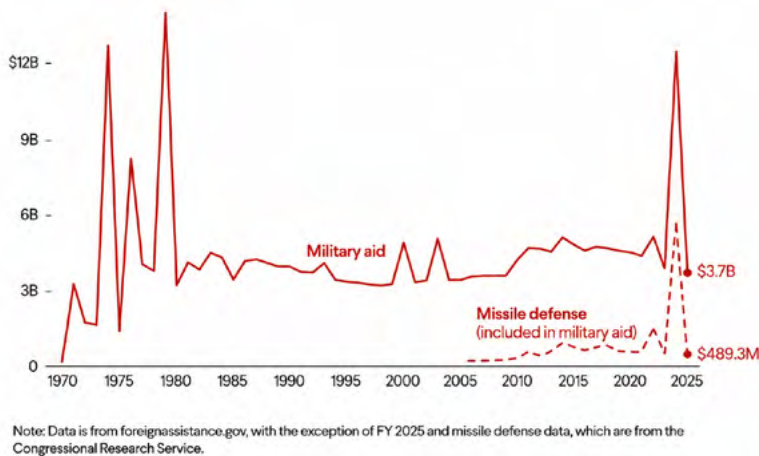
To understand the scale of Lockheed Martin's success, it is crucial to consider the indissoluble role of the United States government. The US maintains its position as the largest military spender in the world (Owens, 2023; Tian et al., 2024), with \$142 billion of the 2023 defence budget spent on weapons procurement alone (Peterson Foundation, 2024). Military spending in the US has seen an increase of 62% since 1980, with the most recent allocation being \$820 billion in 2023 (USAFacts, 2024).

Amongst the recipients of the US's considerable defence expenditures, Israel emerges as one of the top beneficiaries. Since its founding, Israel has been the largest recipient of US foreign aid, which today is mainly channelled towards military operations. Under the current Memorandum of Understanding between the nations — which allocates \$3.3 billion in Foreign Military Financing and \$500 million for cooperative military defence pro-

grammes — Israel secures a constant amount of \$3.8 billion per year until 2028 (Master and Merrow, 2024).

Since the war escalation in October 2023, the US has provided Israel with an additional \$12.5 billion in military aid. Despite the various mechanisms designed to prevent US weaponry from contributing to contraventions of human rights — such as the Leahy Law — enforcement remains challenging. In May 2024, the Biden administration issued a report concluding that there were reasonable grounds to assess whether the US had supplied weapons used by Israel in ways contrary to its obligations under International Humanitarian Law since October 2023. However, instead of launching a full-scale investigation, the White House suspended the approval of a shipment of large bombs intended for use in Rafah and subsequently resumed military assistance to Israel (Masters and Merrow, 2024).

Figure 1 - Military Aid from the U.S. to Israel from 1970 until 2024



Source: Edited by Author from Masters and Merrow 2024 (Council on Foreign Relations).

Lockheed Martin secures approximately 70% of its revenue from government contracts, with the Department of Defence (DoD) being its largest client. Since the earliest available data of 2007, the US has awarded contracts to Lockheed Martin ranging between a minimum of \$32.3 billion in 2014 and a maximum of \$76.6 billion in 2020 (USAspending.gov, 2024).

This close relationship raises fundamental questions about the nature of Lockheed Martin's operations. In an industry where defence and profit intersect in the business of war, this relationship creates a dynamic in which human rights priorities are structurally subordinated to corporate and state defence interests.

6.3 Corporate Governance Insights

Lockheed Martin's business model has had a documented influence on its corporate governance and government circles. According to Lockheed Martin's corporate governance guidelines (2023), the majority of board members must qualify as "independent directors" under the New York Stock Exchange (NYSE) listing standards. However, independence is assessed based on familial or financial relationships with the corporation rather than dependencies on revenues or suppliers. The NYSE's guidelines specify that a director is disqualified from being considered independent only if they, or their immediate family members, have been employed by or received compensation from the company within the past three years. This definition allows directors with substantial governmental connections to be classified as independent, even when the government is the company's main client.

The company's board of directors composition emphasises key competencies, including senior military and government experience. A substantial portion of the board — 5 out of 12 members — consists of individuals with extensive military backgrounds, ranging from the US Air Force to leadership positions within NATO, as well as high-ranking government roles, including congressional representation and General Counsel of the US Department of Defence. This composition ensures that corporate governance is intricately linked to defence and security policies.

Moreover, Lockheed Martin's leadership reflects a deep connection to government and military service. Norman Ralph Augustine (CEO from 1996 to 1997) served as United States Under Secretary of the Army from 1975 to 1977. Robert J. Stevens (CEO from 2004 to 2013) was a former United States Marine Corps officer who, whilst in office, was appointed by President Barack Obama to the Advisory Committee for Trade Policy and Negotiations. James Taiclet, the current CEO, graduated from the US Air Force Academy and was a pilot in the United States Air Force from 1985 to 1991 (Lockheed Martin, 2024).

The cross-functional nature of Lockheed Martin's management enables the company to maintain strong alignment with US defence priorities. Whilst this alignment may facilitate its role as a major defence contractor, it also complicates its ability to independently uphold human rights standards — particularly when arms sales are directed to conflict zones where human rights abuses are documented and ongoing.

6.4 Allegations on Human Rights Violations

Israel's settler-colonial enterprise in Palestine has been fuelled by decades of strategic partnerships with defence contractors, including Lockheed Martin. Since the 1970s, the company has been supplying the Israeli government with arms, with this portfolio growing steadily throughout the past two decades. As of today, Israel's purchases from Lockheed Martin comprise missiles, fighter jets, attack helicopters, and other instrumental technologies to the Israeli Defence Forces' weapons systems (AFSC, 2022). Across various periods of escalation in the conflict, the use of these weapons has been consistently documented in both alleged and established human rights violations in the Gaza Strip (OHCHR, 2024). The use of these arms has resulted in documented civilian casualties and the mass destruction of civilian infrastructure, including schools, hospitals, residential buildings, and electric and water infrastructure (OHCHR, 2009).

6.4.1 Warplanes and Fighter Jets

Lockheed Martin has been a key supplier to the Israeli Air Forces since the 1970s, providing F-16 fighter jets and, since 2016, F-35 warplanes. These jets have been a principal vehicle for documented human rights violations due to their involvement in almost every major operation in the Gaza Strip. F-16 jets were notably deployed during Operation Cast Lead (2008–2009) in attacks on infrastructure, refugee camps, and civilian areas, resulting in substantial civilian casualties (OHCHR, 2009). More recently, F-16 and F-35 aircraft, armed with high-precision bombs, were reported in use during Operation Guardian of the Walls (2021) on the Al Rimal neighbourhood and in attacks on residential and media organisations' buildings (Al Jazeera, 2021; Roblin, 2021). These aircraft have been instrumental in the ongoing war in Gaza (Akkad, 2024).

Lockheed Martin supplied Israel with over a hundred F-16 fighter jets between 2004 and 2009, and at least 50 F-35s since 2016 (SIPRI, n.d.). In 2022, the US Department of Defence awarded Lockheed Martin a total of \$8.1 million in the context of a pre-existing contract for training, data, and engineering purposes pertaining to Israel's F-35 programme (AFSC, 2022; Department of Defence, 2022), and a further \$10.5 million for sustained development and support for Israel's F-35 fleet in December 2023 (AFSC, 2023; US Department of Defence, 2023).

6.4.2 Rocket Artillery Systems and Missiles

Lockheed Martin's Longbow Hellfire (AGM-114L) missiles remain among the most documented weapons employed by the Israeli Air Force in assaults on the Gaza Strip. Despite their precision, their use has raised serious concerns among human rights advocates in light of the civilian casualties they have caused (Human Rights Watch, 2013). Their use was documented in the 2008–2009 offensive, where an Israeli strike killed three Palestinian paramedics and a 12-year-old boy in Gaza City (OHCHR, 2009), and during Operation Pillar of Defence in 2012, during which Israeli forces launched an attack on a hospital in Gaza (Human Rights Watch, 2013). Since October 2023, the company has provided 3,000 Hellfire precision-guided air-to-ground missiles for the Israeli army (Pamuk and Stone, 2024).

The Israeli Defence Forces also employ the M270 Multiple Launch Rocket System (MLRS), manufactured by Lockheed Martin, to fire Elbit Systems' AccuLAR-122 rockets (AFSC, 2023). This weapon was notably used by Israel in Gaza in October 2023, for the first time since the 2006 war in Lebanon (Fabian, 2023).

Despite these weapons' documented lethality and their proven role in enabling one of the most severe ongoing humanitarian crises, the US's continuous approval for their sale and transfer to Israel unveils broader considerations in the dynamics of the defence complex. Transcending the legality of its practices, the business activity of this defence contractor relies on public opinion, political consensus, and sustained support by various actors on the legislative and governmental levels.

6.5 Lobbying to Shape Policy

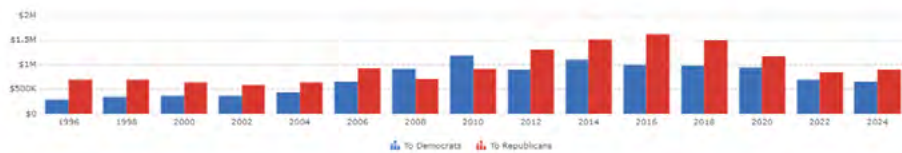
Lockheed Martin has positioned itself as a leader in the weapons trade through more than just an extensive military portfolio. To secure lucrative government contracts, Lockheed Martin employs a historically established method: lobbying. From 1998 until 2003, Lockheed Martin allocated over \$305 million in lobbying — between 50 and 300 individuals — on more than 1,700 issues including taxes, defence budgets, and missile funding (AFSC, 2022; Open Secrets, 2024a). These efforts are carried out through a two-layered strategy of direct lobbying at Capitol Hill and nationwide lobbying via the Lockheed Martin Employees' Political Action Committee (LMEPAC).

Since 2020, Lockheed Martin has maintained membership in the National Governors Association (NGA) to support their operations in all fifty

states of the US, allowing a multi-level approach through insertion of their influence across all major governmental bodies (Lockheed Martin, 2022b).

LMEPAC has been active in the 2023–2024 election cycle, donating to both Kamala Harris (\$163,070) and Donald Trump (\$135,036) alike, with a total of \$1,144,000 allocated to federal candidates. The distribution reflects a bipartisan strategy: 42.53% allocated to Democrats and 56.51% to Republicans (Open Secrets, 2024b). This dual approach ensures support from both parties and secures the company as an indispensable actor in the defence landscape.

Figure 2 - Lockheed Martin's Political Action Committees. Party Split by Election Cycle



Source: OpenSecrets.org

To ensure strategic influence, the company uses the “revolving door” approach, hiring former government officials into their lobbying bodies. In 2023, 517 of the 708 lobbyists working for defence contracts had experience as former government employees (Open Secrets, 2024a). Whilst a common practice in the institutional logic of lobbying, this allows senior officials to engage in lobbying practices without having to disclose it or be subject to oversight – navigating legal loopholes to exert influence.

Their influence extends into shaping US foreign policy, particularly in its alignment with US military aid to Israel (Wright, 2016; Freeman, 2012). Lockheed Martin’s track record in lobbying is not without controversy: in 2015, the company used federal funds to lobby for a contract extension at a nuclear weapons lab, resulting in a \$4.7 million settlement. Such incidents highlight the fine line between legal influence and misconduct in the company’s efforts to secure defence contracts.

6.6 Corporate Interests Vs. Ethics: Lockheed Martin’s Governance Dilemma

Lockheed Martin operates at the intersection of corporate interests, military influence, and government policy. The company’s Board of Directors plays a pivotal role in balancing these often-conflicting priorities – driving profitability whilst ostensibly adhering to ethical and human rights

standards. However, Lockheed Martin's deep entanglement with military and government affairs — facilitated by programmes such as the Secretary of Defence Executive Fellows (SDEF) — raises fundamental concerns about the company's prioritisation of profits and defence interests over its obligations under human rights and corporate social responsibility (CSR) frameworks.

Lockheed Martin's Board of Directors is heavily populated by individuals with deep ties to the military and government sectors (Stone, 2020). This close relationship aligns the company with US government defence priorities, often resulting in the seamless promotion of the government's values and strategic goals. Whilst this alignment may facilitate Lockheed Martin's role as a major defence contractor, it also complicates its ability to independently uphold human rights standards — notably if directed to conflict zones where human rights abuses are documented and ongoing.

The nature of Lockheed Martin's business exposes the company to documented human rights risks. Despite CSR and human rights due diligence obligations under frameworks such as the UNGP, Lockheed Martin's compliance with international human rights standards remains selective. Its policies — including the Good Corporate Citizenship and Respect for Human Rights Policy, the Code of Ethics and Business Conduct, and the Supplier Code of Conduct — fall short of addressing the most serious human rights impacts, as they do not adequately consider customer relationships or the end use of Lockheed Martin's products, where human rights abuses are most likely to occur (Gallagher, 2021). The continued sales to Israel amidst documented scrutiny of their actions highlight the limitations of its human rights due diligence.

The board's focus on compliance with US law — as required by International Traffic in Arms Regulations (ITAR) — often overlooks the broader ethical implications of these sales, which contribute to humanitarian crises in conflict zones. The company presents respect for human rights as an "essential element of being a good corporate citizen" (Lockheed Martin, 2022a) rather than a legal obligation, demonstrating the limitations of voluntary corporate initiatives. In its 2022 Human Rights Report, Lockheed Martin provides high-level human rights disclosures that lack specificity regarding its due diligence process, with no clear criteria for assessing human rights risks in potential contracts. This gap between policy and implementation reflects the broader challenges of integrating human rights due diligence into the defence sector, where military and profit motives dominate.

The SDEF programme, which embeds US military officers in large corporations such as Lockheed Martin, exemplifies the intertwining of corporate and government interests. Not only does this programme serve as a corporate subsidy, but it also gives defence contractors disproportionate influence over US DoD policy. SDEF fellows return to the DoD with recommendations that often align with corporate objectives — such as advocating for the relaxation of arms export controls like ITAR. In 2020, for example, a Lockheed Martin fellow proposed changes to current arms export laws that coincided with the company's \$15.2 billion in international sales that year (Heinz and Freeman, 2024). Over 43% of former SDEF fellows between 1996 and 2020 went on to work for defence contractors, strengthening the dynamic between military influence and corporate profit (Heinz and Freeman, 2024).

A further dimension of the governance gap merits attention in this context. Corporate Accountability and Human Rights Abuses (CAHRAs) frameworks — domestic legislative instruments designed to impose mandatory human rights due diligence obligations on corporations — have in several key jurisdictions either explicitly excluded or failed to incorporate the occupied Palestinian territory within their operative scope. As examined in Chapter 4 of this volume, this omission is not a technical drafting gap: it reflects a deliberate political determination about which contexts of systematic human rights violation fall within the perimeter of mandatory corporate accountability. Where the legal obligation to conduct heightened HRDD is contingent on a political will to define the OPT as a relevant context, the framework's protective function is systematically undermined at precisely the point where it is most urgently required. Lockheed Martin's conduct — and the broader structure of corporate engagement documented in this chapter — illustrates the consequence: in the absence of mandatory and enforceable due diligence obligations with genuine extra-territorial reach, voluntary corporate governance frameworks function as a legitimisation mechanism rather than an accountability tool (see Chapter 4, §4.3.1 of this volume).

In this sense, Lockheed Martin's governance highlights a fundamental tension between its role as a defence contractor and its responsibility to uphold human rights — revealing the complex dynamics in which profit and power consistently overshadow ethical accountability and human rights due diligence.

6.7 Discussion

Under the UN Guiding Principles on Business and Human Rights (UNGP), businesses are responsible for respecting human rights, independently of state obligations (United Nations, 2011). However, defence contractors like Lockheed Martin treat human rights compliance as an optional aspect of their self-defined “corporate citizenship” rather than a fundamental corporate responsibility. A recurring argument in defence of this approach frames companies’ human rights obligations as secondary to their role as contractors to state actors, implying that the state bears the primary responsibility for ensuring human rights compliance (OECD Watch, 2016). This perspective, which “outsources” responsibility to states, contradicts the UNGP’s call for businesses to conduct human rights due diligence (Amnesty International, 2019).

Human Rights Impact Assessments (HRIAs) are vital tools for identifying the potential adverse effects of business activities on human rights. Whilst Lockheed Martin’s Code of Ethics acknowledges human rights as part of good corporate citizenship (Investor Advocates for Social Justice, 2021), it lacks clear guidelines for assessing the human rights impact of its products. This gap is particularly concerning in the context of lobbying and its influence within the defence industry. Defence contractors, including Lockheed Martin, play a powerful role in shaping US defence policy through lobbying efforts, often investing in political actors to secure support for increased military spending. These activities raise serious concerns about the interplay between corporate interests and US foreign policy: on one hand, lobbying contributes to policies that prioritise military expansion; on the other, it undermines accountability mechanisms and weakens human rights standards.

To address these challenges, companies like Lockheed Martin must begin by acknowledging the human rights implications of their products. This requires a transparent assessment of their products’ end uses, followed by proactive measures to address abuses — including providing access to remediation processes in collaboration with relevant stakeholders and implementing stronger incentives for human rights compliance in client contracts.

Congress also has a critical role in enhancing oversight of arms sales. Through its authority, Congress can flag human rights concerns to the State Department, block sales via resolutions of disapproval, and impose barriers to bypassing standard approval procedures. Alongside the State Department, Congress can enforce stricter conditions on the specifics of arms sales, increase funding for end-use monitoring programmes, and hold these sales to the same human rights standards as other forms of security

assistance — including restricting or halting aid to countries that commit human rights violations.¹⁶

Finally, lobbying practices substantially influence US arms sales policies. The “revolving door” phenomenon — where officials move from roles in the Pentagon to management positions in defence firms — consistently blurs the lines between public and private sector influence in the arms industry (Investor Advocates for Social Justice, 2021). This close relationship raises serious concerns about private interests driving policy decisions, particularly those involving arms sales with human rights implications. Tighter federal regulations on lobbying practices are essential to prevent defence companies from undermining human rights standards through political influence.

6.8 Case Study Conclusion

Although the UN Guiding Principles on Business and Human Rights (UNGPR) provide clear guidelines for companies to respect human rights, the defence industry consistently falls short of meeting these standards. Both state and corporate actors in this sector bear responsibility for ensuring human rights compliance and conducting proper corporate due diligence — including not only enforcing existing regulations but also addressing the consequences of sustained arms transfers to regimes involved in human rights abuses, particularly in conflict zones.

In the absence of public oversight, effective monitoring mechanisms, and strict regulation to curb political influence over the defence industry, the current situation foresees a concerning future — not only for the protection of civilians in conflict-affected areas but also for the broader principles that underpin democratic regimes. Concepts such as equality, checks and balances, and respect for human rights quickly lose their meaning in a context where corporate interests heavily shape state policy, despite ongoing public outcry and calls for reform from civil society.

The failure of both governments and international bodies to address the defence industry’s role in conflicts — such as the documented genocide against Palestinians in Gaza, where “*Israeli executive and military leadership and Israeli soldiers have intentionally distorted jus in bello principles,*

¹⁶ The limits of congressional oversight in this domain are not hypothetical. In July 2019, the Senate and House of Representatives passed resolutions prohibiting the transfer of certain defence articles and munitions to Saudi Arabia and the UAE; President Trump vetoed all three bills (S.J.Res. 36, 37, and 38) on 24 July 2019, and the Senate failed to override the vetoes on 29 July 2019 — a documented case of executive authority superseding congressional human rights oversight in arms transfer decisions. See: <https://sgp.fas.org/crs/weapons/RL31675.pdf>

subverting their protective functions, in an attempt to legitimize genocidal violence against the Palestinian people” (Albanese, 2025, p. 1) — sets a dangerous precedent globally and progressively undermines existing human rights frameworks, rendering them increasingly ineffective. For a more recent European example, see the dossier “Made in Italy, delivered to Israel: Italian military and energy transfers fueling genocide” on the role of the Italian weapons and extractivist industries in fuelling the genocide in Gaza and Israel’s settler-colonial enterprise more broadly (People’s Embargo for Palestine et al., 2026).

7. *Occupied Sun: The Case of Solar Panels in the West Bank*¹⁷

7.1 *The Israeli Green Energy Policy*

Israel has positioned itself as a leader in renewable energy, particularly through its investment in solar power. The Israeli government’s goal to generate 30% of its energy from renewable sources by 2030 has garnered international attention. However, this green narrative masks a more complex and troubling reality: the expansion of Israel’s solar energy infrastructure in the occupied West Bank is closely tied to its settlement project and to the consequent denial of Palestinians’ right to self-determination, including sovereignty over their natural resources.

Israel has long recognised the West Bank’s potential for solar energy production whilst systematically preventing Palestinians from benefiting from it. Despite this, Palestinians in Area C of the West Bank are denied the opportunity to benefit from solar energy development, even as Israel reaps financial rewards from projects on the same land. In 2016, the Israeli Electricity Authority (IEA) reported that nearly NIS 1.6 billion in electricity revenue was generated from solar projects in both Israel and the Occupied Palestinian Territories (OPT). These developments are supported by investors and businesses who are thereby complicit in Israel’s illegal activities, yet solar energy production continues to grow in these areas.

¹⁷ Section 7 of this chapter — *Occupied Sun: The Case of Solar Panels in the West Bank* — is written by Lamia Yasin, doctoral researcher in the PhD Programme in Human Rights, Society, and Multi-level Governance at the University of Padova. The Author gratefully acknowledges her contribution in documenting this case study. The analytical framing, integration with Sections 1–6 in this chapter, and editorial adaptation are the responsibility of the Author.

The Israel Electric Corporation (IEC) functions as the sole buyer of all electricity generated through renewable means. To incentivise solar energy production, the company purchases solar-based electricity at four times the price of regular electricity. This financial structure benefits Israeli settlers in the West Bank, as surplus electricity from residential solar systems is sold back to the IEC, generating profit for the owners. However, this incentive is not extended to Palestinians, who are not granted construction permits, further widening the economic disparity.

Over the last two decades, Israel has taken steps to encourage commercial renewable energy facilities. The Ministry of Energy and Infrastructure's 2023–2024 budget – amounting to NIS 1.38 billion (approximately EUR 336.12 million) – includes provisions for renewable energy development and storage facilities. The promotion of renewable energy is considered a national priority, as highlighted by Decision No. 465 in 2020, which sets the target of producing 30% of the nation's electricity from renewable sources by 2030. In June 2023, the National Planning and Building Council approved the allocation of an additional 40,000 dunams of land for solar energy production, adding to the 20,000 dunam quota set in 2020.

Israel's renewable energy sector has seen substantial growth, with an average annual increase in capacity of 37% between 2018 and 2022. By 2020, renewable energy accounted for 5.7% of the country's total energy production, and the IEA projects that by 2030, this capacity will reach 16 gigawatts, covering 30% of Israel's electricity needs. Between 2016 and 2020, the Ministry of Energy allocated NIS 39 million (EUR 9.52 million) – 19% of its total budget – to support research and development in renewable energy. In March 2020, the Ministry introduced a plan to accelerate investment in energy infrastructure, offering state-guaranteed loans totalling NIS 500 million (EUR 122 million) to encourage the private sector to invest an additional NIS 5.3 billion (EUR 1.29 billion) in renewable energy.

Environmental injustice in the Palestinian territories must be examined from an interdisciplinary perspective. Whilst Israel cultivates a green image on the global stage – presenting itself as a leader in sustainable technology, afforestation, and arid land management – it simultaneously positions itself as a legitimate steward of Palestinian land. Hughes et al. (2023) demonstrate that this dynamic is not incidental: Israel's green technologies are fundamentally structured by the Zionist project of appropriating Palestinian lands, and the use of environmental infrastructures – in the areas of waste management, renewable energy, and agricultural technologies – functions as a mechanism for land appropriation and dispossession.

Within settler colonial analysis, the authors argue, ‘greenwashing’ as a rhetorical strategy renders individual technologies incommensurable with long-term socio-ecological resilience, regardless of their ecological impact, because they further indigenous dispossession and elimination. Israel’s promotion of sustainability and climate change mitigation is therefore not a parallel track to its settler-colonial project — it is one of its instruments.

As Chapter 9 of this volume documents in the context of land grabbing and indigenous communities, and as Chapter 6 establishes in its analysis of the structural inseparability of environmental destruction and human rights violations, the Palestinian case represents the most extreme documented convergence of these dynamics .

7.2. Israeli Solar Enterprises in the Occupied Palestinian Territories

Israeli solar enterprises have generated profits from projects in the West Bank, particularly in Area C, where they have established solar fields within and around illegal settlements. Notable projects — such as the Netiv Hagdud and Meitarim Solar Fields — have been developed on land confiscated from Palestinian communities, raising serious ethical and legal concerns. Despite operating on occupied territory, the primary beneficiaries of these solar fields are Israeli settlements and households within the Green Line, whilst nearby Palestinian villages suffer from energy insecurity and frequent power shortages (Yeung, 2018).

The Jordan Valley — a region rich in natural resources — has been a longstanding target of Israeli exploitation. Shortly after the 1967 War, Major General Uzi Narkiss issued two military orders: Order 150, regulating “absentee properties” in the Jordan Valley, and Order 151, designating much of the Jordan Valley as a closed military zone. These orders barred Palestinian landowners, even if present, from accessing their lands. These areas remain closed military zones to this day. In the 1980s, Israel transferred parts of this region to the World Zionist Organisation, which leased it to settlers for agricultural and geographic expansion. The Jordan Valley — covering approximately 2,400 square kilometres and accounting for 28.5% of the West Bank — has attracted not only the Israeli agricultural sector but also the renewable energy sector. Although Israeli settlements in the Jordan Valley have a relatively small population, 86% of the area falls under the jurisdiction of their regional councils, with 94% of the region under direct Israeli control (Area C).

As of September 2023, the Israeli Civil Administration has been promoting 22 additional solar power generation plans in Area C, one of which is projected to be larger than all currently existing facilities on both sides of the Green Line. The geographical proximity of the West Bank to Israel's urban centres, particularly Jerusalem, facilitates the transfer of electricity to areas of high demand.

In August 2023, the Megillot Regional Council in the northern Dead Sea completed a solar energy project in the Kalia settlement — part of a council that includes eight illegal settlements. The project, valued at approximately NIS 1.8 million, includes 200 solar panels installed on the roof of a basketball court at a local elementary school, generating 100 KW of electricity for sale to the grid.

As of May 2024, eight Israeli commercial solar fields are operating in the illegally occupied West Bank, all connected to the Israeli electricity grid. These actions not only violate international humanitarian law — Article 49 of the Fourth Geneva Convention and Article 55 of the Hague Regulations — but also reflect Israel's broader strategy of using renewable energy as a tool to solidify control over Palestinian land. The profits generated from these solar fields flow directly into the Israeli economy, reinforcing the settlement enterprise and deepening the occupation. Meanwhile, Palestinians in the West Bank, particularly in Area C, face systematic legal and bureaucratic barriers to developing their own renewable energy projects, exacerbating economic inequalities.

In May 2015, during a statement for the Global Initiative on Sustainable Energy for All, Israel's ambassador to the UN described Israel as “a hub for renewable energy research and development”. Whilst green energy is internationally recognised as a viable alternative to fossil fuels, in the West Bank, solar power has become another means of segregation, dispossession, and colonisation. The ambassador's claim that “the same sun shines equally on all of us” falsely suggests that Palestinians and Israelis have equal access to solar energy. In reality, the Palestinian electricity sector is a captive market, hindered by debts allegedly owed by the Palestinian Authority to the IEC and numerous other restrictions.

7.2.1 Greenwashing the Green Energy

Greenwashing plays a central role in Israeli policy in the occupied territory. It is a rhetorical device used by the Israeli state and corporate actors to highlight progressive innovations in climate change mitigation, sustainability, and green agriculture whilst diverting attention from human rights abuses. As defined by Who Profits, greenwashing is “a form of

deception employed by an entity or organisation when it deceptively uses green PR or marketing to promote its policies and products as environmentally friendly and ethically benevolent” (Who Profits, 2017, p. 10). By focusing on its environmental governance, Israel obscures the territorial and colonial implications of its actions, using greenwashing to maintain and expand its occupation of Palestinian land (*see Chapter 4 of this volume on greenwashing as a structural corporate mechanism, and Chapter 9 on greenwashing in the context of land grabbing* [Ed.]).

The construction of solar farms on occupied Palestinian land is framed as a green initiative aimed at sustainability. Yet these projects involve the appropriation of Palestinian land and the exclusion of local communities from both the benefits and the decision-making processes associated with renewable energy development. The installation of large-scale solar facilities in illegal settlements under the guise of environmental responsibility is a documented case of greenwashing (Miralles, Diaz & Daza, 2023; Hughes et al., 2023): the image of sustainability is leveraged to justify and perpetuate harmful practices. Hughes et al. (2023) demonstrate that this pattern extends across the full range of Israeli environmental technologies — from waste management to agritech — and constitutes not a rhetorical aberration but a structural feature of the settler colonial project: regardless of the ecological impact of individual technologies, in Israel’s settler colonial context they further indigenous dispossession and are therefore incommensurable with genuine environmental justice.

According to Who Profits, four large solar fields have been built in the West Bank, primarily in the Jordan Valley, occupying 300,000 square metres of Palestinian land. These solar fields are connected to the Israeli Electricity Authority power grid, benefiting illegal settlements and Israeli companies at the expense of Palestinian communities. The Israeli Civil Administration — the civilian arm of the Israeli military responsible for the administration of Area C (International Court of Justice, 2024) — also profits from granting permits for the construction of solar farms.

The first major solar project in the West Bank, Netiv Hagdud, was developed north of Jericho in 2015 with support from the Israeli government. Since its inception, the project has received investments exceeding USD 6 million from the Israeli company Green is Us and the Italian company Enerpoint, through its subsidiary Enerpoint Israel. By 2016, with an Israeli Electricity Authority licence, the Netiv Hagdud solar field covered 50,000

square metres and was equipped with 13,000 solar panels, producing 4 MW of electricity – resulting in profits of NIS 25 million (approximately EUR 5 million).

The Kalia solar field, operational since 2016, generates 10.8 MW of electricity on 13.5 hectares of land in the illegal Kibbutz Kalia settlement in the Jordan Valley. With 104,000 solar panels, the Kalia field provides energy to 5,000 homes. Solar panels for the project were supplied by the US-based First Solar, whilst additional electronic systems and software came from German and Swedish companies.

The Meitarim solar field, located in the illegal industrial settlement of the same name, occupies 98,749 square metres of Palestinian land. It is connected to the Israeli grid and generates 5 MW of electricity, enough to power 2,500 homes. Similarly, the Shadmot Mehola solar field, near the Palestinian towns of Ein El-Beida and Khirbet al-Malih, spans 49,242 square metres and generates 5 MW of electricity annually.

Israel's exploitation of natural resources in the West Bank continues to expand, as exemplified by the Jordan Valley solar project, which aims to establish a solar energy field covering up to 300 hectares and generating 360 MW of electricity. Expected to be connected to Israel's national electricity grid by 2024, this project involves 12 agricultural cooperatives located in illegal settlements.

Numerous Israeli and international companies – such as Energix Renewable Energies Ltd. and the French company Alstom S.A. – have been implicated in providing infrastructure for these illegal settlements, in violation of UN Human Rights Council Resolution 43/71 of 2020.

Whilst Israeli settlements and companies profit from solar farms on occupied land, neighbouring Palestinian communities in Area C face displacement, home demolitions, lack of basic services, and economic strangulation. In addition to restricting Palestinian electricity generation and infrastructure development, Israeli authorities routinely confiscate and destroy solar panels installed by Palestinians, depriving them of the opportunity to utilise their own natural resources for sustainable development.

7.3 Case Study Conclusion

The exploitation of solar energy in the West Bank by Israeli enterprises exemplifies the troubling intersection of illegal occupation, economic exploitation, and greenwashing documented across this volume. Whilst solar energy holds great promise for addressing the region's energy needs,

its implementation within the framework of Israeli settlements distorts its potential benefits. Rather than promoting sustainability and empowering local Palestinian communities, these solar projects entrench Israeli territorial control and exacerbate the inequalities — in land tenure, economic freedom, and access to natural resources — inherent in the occupation.

This process is not limited to energy exploitation: it is part of the broader industrialisation and settlement expansion strategy in the West Bank, which involves systematic house demolitions, forced displacement, and land confiscation. Such actions perpetuate the dispossession of Palestinians and undermine their ability to access and benefit from their own natural resources — a direct violation of the principle of permanent sovereignty over natural resources examined in Section 2.1 of this chapter.

Israel's use of renewable energy to legitimate its presence in the West Bank presents a documented ethical and legal problem. By framing solar projects as environmentally responsible, Israel obscures the deeper issue of occupation and resource appropriation. The international community must critically assess these initiatives, ensuring that the development of renewable energy adheres to both legal and moral obligations, rather than serving as a façade for continued violations of international law.

True sustainability cannot be achieved through the disenfranchisement and exploitation of an occupied population. Only when green energy initiatives prioritise the rights, needs, and sovereignty of all peoples in the region can they contribute to a future that is both just and equitable. Therefore, addressing the ethical dimensions of renewable energy in the West Bank is essential to ensure that these projects foster genuine environmental and socio-economic progress rather than entrenching the injustices of occupation.

To this end, the role played by external actors — states and businesses alike — is decisive. Following the annual UN Human Rights Council resolutions, there is an urgent need for international accountability and the cessation of illegal business exploitation and human rights abuses in the unlawfully occupied Palestinian territories. HRC resolutions emphasise that Israeli settlements and related activities are illegal under international law and are a major obstacle to peace and social development. The Council calls upon states to clearly distinguish between Israel's internationally recognised borders and the territories it has occupied since 1967, urging them to refrain from assisting or legitimising the settlement enterprise, and to take concrete steps to prevent their businesses from contributing to these illegal practices (Fig. 3).

Figure 3 – UN Human Rights Council (HRC) resolution on Israeli settlements in OPT and Occupied Syrian Golan (A/HRC/RES/55/32)

11. *Calls upon* all States:

(a) To distinguish, in their relevant dealings, between the territory of the State of Israel and the territories occupied since 1967, and not to provide Israel with any assistance to be used specifically in connection with settlements in these territories, including by taking steps towards ceasing the importation of any products originating in settlements in the Occupied Palestinian Territory, including East Jerusalem, consistent with their obligations under international law;

(b) To implement the Guiding Principles on Business and Human Rights in relation to the Occupied Palestinian Territory, including East Jerusalem, and to take appropriate steps to prevent, investigate, punish and redress human rights abuses by businesses domiciled in their territory and/or under their jurisdiction, including those owned or controlled by them, through effective policies, legislation, regulations and adjudication in order to ensure that those businesses refrain from committing, contributing to, enabling or benefiting from the human rights abuses of Palestinians, in accordance with the expected standard of conduct in the Guiding Principles and relevant international laws and standards, by taking appropriate steps in view of the immitigable nature of the adverse impact of their activities on human rights, including suspension of their operations in the context of the settlements;

(c) To provide guidance to individuals and businesses on the financial, reputational and legal risks, including the possibility of liability for corporate involvement in gross human rights abuses and the abuses of the rights of individuals, of becoming involved in settlement-related activities, including through financial transactions, including foreign direct investments, purchases, the importation of settlement products, procurements, loans, the provision of services and other economic and financial activities in or benefiting Israeli settlements, from within their countries, to prevent those financial transactions, to inform businesses of those risks in the formulation of their national action plans for the implementation of the Guiding Principles on Business and Human Rights, and to ensure that their policies, legislation, regulations and enforcement measures effectively address the heightened risks of operating a business in the Occupied Palestinian Territory, including East Jerusalem;

(d) To increase monitoring of settler violence with a view to promoting accountability, and to take steps towards implementing targeted individual sanctions, including travel bans and asset freezes, against individuals identified as perpetrators of violations of international human rights law or international humanitarian law;

12. *Calls upon* business enterprises to take all measures necessary to comply with their responsibilities under the Guiding Principles on Business and Human Rights and relevant international laws and standards, foremost by terminating their activities in or in relation to the Israeli settlements and the wall in the Occupied Palestinian Territory, including East Jerusalem, to withdraw from settlements in order to cease the unmitigable adverse impact of their activities on human rights, and to cease contributing to the establishment, maintenance, development or consolidation of Israeli settlements or the exploitation of the natural resources of the Occupied Palestinian Territory, including East Jerusalem;

Source: UN Human Rights Council (2024)

Furthermore, businesses are explicitly called upon to terminate operations that sustain Israeli settlements or profit from the exploitation of Palestinian resources. The adherence to the Guiding Principles on Business

and Human Rights, as well as international law, can mitigate the adverse impact on Palestinian human rights. In doing so, the international community and businesses are urged to take definitive action against the perpetuation of an unjust colonial system that undermines the most fundamental rights and livelihoods of the Palestinian people.

8. Concluding Remarks

The chapters of this volume have documented, sector by sector and case by case, the mechanisms through which corporate conduct narrows what the volume's opening framework called the corridor of possibilities — the space within which human communities can exercise meaningful agency over their own lives, resources, and futures. From extractivism and deforestation (Chapters 6 and 7) to supply chain opacity and forced labour (Chapter 5), from land grabbing and the displacement of indigenous communities (Chapter 9) to the surveillance architectures examined in Chapter 11, the volume has traced a consistent structural logic: the privatisation of gain and the socialisation of harm, underwritten by governance gaps that are not accidental but produced.

Chapter 12 has brought that structural logic to its most documented and most extreme contemporary expression. But this concluding section argues something beyond documentation: it argues that the Palestinian case is a *governance laboratory* (see *Glossary, Box 3*) — and that what is being perfected there carries consequences that extend far beyond one people, one territory, and one conflict.

The Prototype

The Israeli settler-colonial enterprise in the occupied Palestinian territory is not an exception to the global system described in the preceding chapters. It is that system operating without the constraints that, elsewhere, civil society, judicial oversight, regulatory frameworks, and democratic accountability still partially impose. It is, as Chapter 11 identified, the Palestine Laboratory in its full meaning: the terrain where not only surveillance technologies and weapons systems, but entire models of resource extraction, population control, legal impunity, and corporate complicity have been developed, tested, and are now available for export.

The *Nakba* (see *Glossary, Box 3*) — the forced displacement of over 700,000 Palestinians beginning in 1948, the systematic erasure of more than

500 villages, the destruction of an entire cultural, agricultural, and ecological civilisation — was not a historical aberration. It was the founding act of a project that has continued, in documented and legally classified form, for over seventy-five years. The destruction of Palestinian olive groves and orchards is not incidental damage: it is the deliberate elimination of a bi-cultural heritage that sustained communities across millennia. The demolition of Palestinian homes, schools, hospitals, and places of worship is not collateral: it is the engineered annihilation of the material conditions of collective identity. The blockade of Gaza's water, electricity, and food is not a security measure: it is, as the ICJ has found, the deliberate creation of conditions of life calculated to destroy a people as a group.

This matters for the rest of the world — and for this volume — because the logic that produced the Nakba and has continuously refined it across seventy-five years is not a logic specific to one place or one conflict. It is the logic of the recursive erosion of accountability: the combination of concentrated capital, military technology, opaque elite power, and the systematic weaponisation of international institutions in favour of the powerful, operated at scale and with impunity. If that combination is allowed to proceed — tested, refined, normalised, and unpunished — it becomes, in the most precise governance sense of the term, a replicable model.

The Architecture of Impunity

What makes the Palestinian case the paradigmatic governance laboratory is not the scale of the violations — history offers equally devastating precedents — but the *architecture of impunity* that sustains them. This architecture has three load-bearing columns.

The first is financial: the international network of corporations, asset managers, sovereign wealth funds, and pension funds documented in this chapter, which channels billions of dollars annually into Israel's economy of occupation and genocide whilst formally maintaining commitments to ESG investing, responsible finance, and human rights due diligence. BlackRock, Vanguard, BNP Paribas, Barclays, the Norwegian Government Pension Fund — these are not fringe actors. They are the institutional backbone of the global financial system, and their investment in Israeli treasury bonds and settlement-linked companies constitutes a choice made with full knowledge of the ICJ proceedings, the ICC arrest warrants, and the UN General Assembly resolutions.

The second column is technological: the Palestine Laboratory's output, now exported globally. The NSO Group's Pegasus spyware, developed and tested on Palestinian activists, sold to governments across Europe, Asia, and the Americas for use against journalists, opposition leaders, and hu-

man rights defenders. The facial recognition systems tested at West Bank checkpoints, now deployed in airports, stadiums, and border crossings worldwide. The AI-assisted targeting tools developed for the IDF, now marketed as battle-proven. Every government that seeks to automate the control of its population has an Israeli start-up to call. The occupation's laboratory function is not metaphorical. It is a documented commercial proposition.

The third column is legal: the architecture of selective multilateralism — over forty US vetoes at the Security Council, the political exclusion of the occupied Palestinian territory from CAHRAs frameworks in key jurisdictions, the systematic omission of Palestinian sovereignty from ESG assessments, and the impunity of corporate executives shielded by the same legal veil of corporate personhood that Chapter 3 of this volume identifies as the structural enabler of business and human rights violations globally. As documented in the bridge section of this chapter, the revocation of UNGA Resolution 3379 in 1991 — conditioned on Israel's participation in the Madrid Peace Conference — illustrates this mechanism at its most explicit: a formal determination of the international community's principal deliberative body, reversed not through new legal argument but through diplomatic leverage and geopolitical conditionality. The perimeter of what international law formally condemns is determined not solely by normative principle but by the distribution of political power among those who negotiate its content.

Together, these three columns constitute a proof of concept for a system of power that operates above democratic accountability, above international law, and above the biophysical limits of the planet. The governance analysis is clear: a system that can deploy military force, financial infrastructure, and surveillance technology simultaneously, with impunity guaranteed by the world's most powerful state, has demonstrated that the existing international order contains no automatic correction mechanism. None will engage without human beings choosing to engage it.

The Nakba as Prodrome

This volume closes with the Palestinian case not because Palestine is the only place where these mechanisms operate, but because it is the place where they have operated longest, most completely, and most documentedly — and because the impunity with which they have operated constitutes the most serious evidence available that the global governance

architecture described across twelve chapters of this volume is insufficient, without human intervention, to prevent their replication.

The Nakba is not history. It is a continuous process — from 1948 to the demolition of a Palestinian home in Area C today, from the ethnic cleansing of 1967 to the siege of Gaza in 2025. And it is a prodrome: in the medical sense of a symptom that precedes and announces a condition that, if untreated, will become systemic. The annihilation of a people, a culture, a history, an identity, a biodiversity — the erasure of the olive groves and the village names and the architectural heritage and the agricultural knowledge accumulated over millennia — is not the collateral damage of a security operation. It is the endpoint toward which the system documented in this volume tends when it is allowed to operate without accountability.

If that endpoint is reached — if the model is normalised, exported, and reproduced — then the question posed by the Doughnut framework acquires a dimension its authors did not anticipate: not only whether humanity can stay within the ecological ceiling and above the social floor, but whether the governance systems capable of navigating that space can survive the systematic dismantlement of the accountability mechanisms on which they depend. The governance laboratory in Palestine is running that experiment in real time. The life expectancy collapse documented by Guillot et al. (2025) — 35 years lost in 12 months, a drop greater than Rwanda in 1994 — is not a statistic. It is the biometric measurement of what happens when the corridor of possibilities is closed by design.

Resistance Is Possible — But Only If Organised

The analytical framework developed across this volume has documented, with accumulating precision, how systems of concentrated power maintain themselves: through the privatisation of information, the silo-isation of accountability, and the systematic prohibition of inconvenient questions. Coffey (2026), in a peer-reviewed analysis published in *Intelligence and National Security*, identifies this as the defining structural vulnerability of authoritarian governance — using as his analytical object *Andor*, a television series set in the Star Wars universe that has attracted documented academic attention for its treatment of imperialism, resistance, and the human cost of organised rebellion (Vera-Phillips, 2025; Chayka, 2025). Coffey's central argument is precise: the Empire fails not because the rebellion is powerful, but because the Empire is constitutively incapable of asking the questions that would save it. Officers who pursue unauthorised lines of inquiry are imprisoned. Analysts who report correct answers rather than

predetermined ones are eliminated. The questions and answers are fixed in advance — and this structural blindness is why the Empire loses.

The parallel with the architecture of impunity documented in this chapter is exact. The ESG frameworks that systematically omit the occupied Palestinian territory from their assessments; the CAHRAs legislation that excludes the OPT from its operative scope; the selective silence documented by De Vogli et al. (2025) in *The Lancet* — in each case, the architecture of impunity is sustained by the prohibition of inconvenient questions. Those who control the language control the reality. This is the mechanism that Orwell (1949) traces to its terminal conclusion in *Nineteen Eighty-Four*: Newspeak eliminates the vocabulary required to formulate dissent, and Winston Smith dies having internalised the language of the system that destroyed him. Andor depicts a different — and more instructive — moment: the process by which that closure is attempted, contested, and not yet completed. The questions have not yet been eliminated. The language of resistance is still available.

Vera-Phillips (2025), writing in the *Journal of Popular Culture*, provides the postcolonial and critical race analysis that grounds this reading academically. Her analysis of the Narkina 5 prison speeches in Andor demonstrates how resistance is built not through heroic individual acts but through the precise identification of shared conditions — transforming, in her formulation, “*individual enslaved workers into compassionate human beings who are willing to work together toward the goal*” (Vera-Phillips, 2025, p. 270) of freedom. The transformation is structural, not emotional: it is the recognition, across isolated individuals who share a condition, that their choices are constitutive of the same outcome. This is the analytical reading that the phrase “*What comes next depends on everyone*” requires: not that change depends on each individual acting alone, but that it depends on individuals recognising, across their different positions in the same system, that their distributed choices form a network.

The human cost of this work is named without romanticisation. Luthen Rael’s monologue — cited in full in Vera-Phillips’s analysis — is the most honest statement of what sustained resistance requires:

“I burn my decency for someone else’s future. I burn my life to make a sunrise that I know I’ll never see.” (Vera-Phillips, 2025, p. 270)

Cassian Andor himself will not see the outcome. He dies before the victory he helped make possible — one node in a distributed network, a foundational catalyst for the Rebel Alliance (Chayka, 2025), whose individual contribution is not sufficient and was never intended to be. What

makes it count is the coordination: the convergence of operatives, analysts, organisers, and ordinary people making small choices with large consequences. Coffey (2026) demonstrates that it is precisely this integrated, all-source, question-driven network — operating across the siloes that the authoritarian system has deliberately erected — that makes the rebellion structurally viable. This is a description of what peer-reviewed academic work, activist research, legal argumentation before international courts, and volumes like this one are doing: producing finished intelligence, in Coffey's formulation, that political decision-makers can no longer dismiss as paranoid fantasy.

Vera-Phillips (2025) closes her analysis by applying this framework directly to the Palestinian case — to South Africa's legal arguments before the ICJ in *South Africa v. Israel*, which she reads as deploying the same strategy as the rebellion speeches: using the language of international law to disrupt the dominant narrative and force the recognition of a reality that the dominant power has systematically sought to render invisible. “*Just as the language of resistance can change the dominant narratives of the Empire in Star Wars, the speeches and messages of counter-movements on Earth can illuminate the reality for marginalized people and help argue for their right to exist outside of colonial relationships*” (Vera-Phillips, 2025, p. 272). This volume is, in the most precise sense of that formulation, an act of that kind.

The historical evidence of this process is being generated in real time. At the University of Padova, CORDA — Coordinamento Ricercatori* Dottorandi* e Assegnisti* — and the *Intifada Studentesca* have demanded the adoption of the PACBI Guidelines and the interruption of institutional collaborations with arms manufacturers and extractive companies complicit in the genocide, grounding their demands in the report *L'Accademia di fronte al genocidio* and an appeal that gathered over 3,000 signatures (CORDA, 2025). De Vogli, Montomoli, Abu-Sittah, and Pappé published in *The Lancet* an open letter that gathered 3,300 signatures within days and prompted three major public health associations representing over 5 million health professionals to issue a joint statement acknowledging the genocide (De Vogli et al., 2025). From the Massachusetts Institute of Technology to the University of Edinburgh, to campuses across Europe and North America, student and academic movements have demonstrated that the institutional entanglement documented in Section 3.3.2 of this chapter is neither inevitable nor irreversible. The BDS movement has produced documented divestment decisions (BDS Italia, 2014). The ICJ has issued its Advisory Opinion. The ICC has issued its arrest warrants.

None of this is sufficient. The conditions for the organised, global, multi-level resistance that is the only historically documented path through which systems of impunity have been dismantled are structurally present — in the legal instruments, in the civil society networks, in the academic accountability movements — but they are not yet politically convergent in the way that would make their deployment decisive. Rael burns his life for a sunrise he will not see. The Palestinian people have been making that choice — and paying that cost — for over seventy-five years. The corridor of possibilities is real. Its traversal is not yet imminent.

But the authoritarian system that maintains the architecture of impunity documented in this chapter is not asking the questions that would save it. Partagaz, in his final moments, is listening to a revolutionary manifesto on political consciousness. The officer sent to arrest him never bothered to read it: “*What possible purpose could that serve?*” (Coffey, 2026, p. 21). This is the structural blindness that no architecture of impunity can ultimately overcome: the system that eliminates inconvenient questions eventually cannot see the answers arriving.

What Comes Next

This volume has tried to ask the inconvenient questions — to document the mechanisms of violation with the precision that accountability requires, and to identify the remedies with the honesty that their limitations deserve. Twelve chapters, eighty-five (85) arguments developed step-by-step, one hundred and seventeen glossary terms, and an analytical arc from the biocapacity of the planet to the negation of an entire people’s corridor of possibilities.

The questions are still available. The language of resistance has not yet been eliminated. The network of people making the same choice at different points in the same system — researchers, students, lawyers, health professionals, investors, citizens — is larger than it was when this volume began.

Armiero’s Wasteocene and Moore’s general law of overpollution — the structural proposition that every frontier of profit breeds a frontier of poison, and that capitalism requires sacrifice zones of populations and ecosystems to facilitate accumulation (Armiero, 2021; Moore, 2025) — find in the Palestinian case their most extreme and most documented contemporary expression. The systematic destruction of Palestinian agricultural land, the

weaponisation of water, the deliberate creation of conditions of life calculated to destroy: these are not the collateral consequences of a security operation. They are, in Moore's formulation, Cheap Toxification operating at genocidal scale — the Wasteocene logic of 'genocide and ecocide to discipline labor and land for capital' (Moore, 2025, p. 9), now operating not on the margins of the capitalist world-system but at its most visible and most contested frontier. That this logic has operated, in Palestine, for over five centuries — from the Ottoman reorganisation of land tenure through the British Mandate through the Nakba to the siege of Gaza — confirms the central argument of both Armiero and Moore: the crisis is not anthropogenic. It is capitalogenic. And it requires not expert management but organised resistance.

This conclusion — Moore's 'Time's up — organize, resist, or get crushed' (Moore, 2025, p. 13) — is not new. It is the conclusion that this volume reaches by a different path: through international human rights law, corporate accountability frameworks, and the documented lives of those who have already paid the cost of inaction with their bodies, their rivers, and their futures. But it is also, this volume argued in its opening pages, the conclusion that two traditions separated by two and a half millennia and very different philosophical vocabularies had already reached. The Sarvasara Upanishad warned that the absence of conscious engagement is not innocence but bondage. Freire argued that to understand how things are is already to be implicated in the question of how they should be, and that to refuse that implication is a choice — a choice in favour of the way things are. Moore, arriving from the web of life and five centuries of capitalist world-ecology, says the same thing in the language of our moment: knowing is not enough. Organise.

The convergence across these traditions is not coincidental. It is evidence that the corridor of possibilities, however narrowed, remains open — and that keeping it open is, as it has always been, everyone's work.

The Palestinian people have been making that choice — and paying that cost — for over seventy-five years. The olive trees that were uprooted are a record of what was destroyed. The ones still standing are a record of what was defended.

Both are evidence that the corridor exists.

The choice of whether to walk it — and in which direction — belongs, still, to everyone.

Box 1 - Guiding Questions

1. What does the report suggest about the enforcement of heightened human rights due diligence flowing from the UNGP?
2. What are the key elements of the economy of occupation? What changes within the economy of genocide?
3. What economic sectors are mainly involved in each of these three stages: displacement, replacement and enabling?
4. What are the potential individual responsibilities deriving from these violations?
5. The genocide in Gaza has been met with selective silence by most academic, medical, and professional associations — a response that contrasts sharply with their vocal solidarity in other conflicts (De Vogli et al., 2025). What does this selective silence reveal about the governance of knowledge production and institutional accountability? And what does the organised resistance of student movements, researchers, and civil society — from CORDA at the University of Padova to campus movements worldwide — suggest about the conditions under which that silence can be broken?

Box 2 - Key facts

- Israel's economy of occupation was always aiming to eliminate Palestinians.
- Israel's settler colonial occupation and now genocide is a case of colonial racial capitalism.
- Transnational corporations, primarily based in global minority countries, are aiding and facilitating Israel's violations of peremptory norms of international law including aggression, apartheid and genocide.
- Any engagement with Palestinians and their land must be anchored to the respect of their right to self-determination, including sovereignty over their natural resources.
- The ICJ Advisory Opinion of July 2024 declared Israel's entire presence in the occupied Palestinian territory — including its military presence, settlements, infrastructure, and resource control — to be unlawful, imposing a *prima facie* obligation on corporate entities to disengage from all associated dealings.
- Lockheed Martin, the world's largest defence contractor, secured approximately 70% of its revenue from US government contracts in 2023, illustrating the structural entanglement between corporate governance and state defence policy that this chapter identifies as a systemic obstacle to human rights accountability.
- Solar energy projects in the West Bank's Area C generate electricity and profits flowing exclusively to Israeli settlements and companies, while Palestinian communities in the same territory are systematically denied construction permits and access to the same resources: a documented case of greenwashing the occupation.
- Life expectancy at birth in Gaza declined by approximately 35 years in 2024 alone — a collapse greater than that recorded during the genocide in Rwanda — while over 1,580 health-care workers have been killed and not a single hospital remains fully functional (De Vogli et al., 2025; Guillot et al., 2025). These are not secondary consequences of conflict. They are the measurable public health outcome of the corporate and governance machinery documented in this chapter.
- The selective silence of most academic, medical, and professional associations on the genocide in Gaza — in contrast to their rapid response to other conflicts — is itself a governance failure: a documented case of institutional complicity through inaction (De Vogli et al., 2025).

Box 3 - A Working Glossary

Term	Definition
Apartheid wealth tax	A reparative mechanism proposed by UN Special Rapporteur Albanese (2025), modelled on the post-apartheid South African experience, under which corporate entities that have profited from Israel's occupation and apartheid regime would be required to pay reparations to the Palestinian people as a condition of accountability and the dismantlement of the system of exploitation.
Colonial racial capitalism	A mode of domination in which settler-colonial land dispossession, racial segregation, and capital accumulation are structurally interdependent: the displacement of the indigenous population is simultaneously the condition of possibility and the ongoing product of corporate profit (Koshy et al., 2022; Albanese, 2025).
Economy of genocide	The transformation, documented post-October 2023, of the economy of settler-colonial occupation into a system in which the infrastructure of displacement — military technology, surveillance, heavy machinery, energy control — is mobilised for mass killing and the deliberate creation of conditions of life calculated to destroy the Palestinian people as a group (Albanese, 2025).
Economy of occupation	The integrated economic system established by Israel in the occupied Palestinian territories after 1967, characterised by draconian restrictions on Palestinian trade and resource access, exploitation of Palestinian labour and natural resources for the benefit of the Israeli economy, and the institutionalisation of a captive market through the Paris Protocol (Oslo II, 1995). Always eliminatory in its structural logic (Albanese, 2025).
Governance laboratory	The use of a territory and population — under conditions of military control and structural impunity — as a testing ground for surveillance technologies, weapons systems, and population control models, subsequently commercialised globally as battle-proven products (Loewenstein, 2023; Albanese, 2025). In the Palestinian case, the exportable prototype includes not only the technologies but the architecture of impunity itself.
Greenwashing the occupation	The deployment of environmental sustainability narratives and renewable energy projects — specifically solar energy infrastructure in the West Bank's Area C — to legitimise and entrench Israel's territorial control over occupied Palestinian land, whilst systematically excluding Palestinian communities from the benefits and denying their sovereignty over natural resources (Who Profits, 2017, 2024). A documented case of greenwashing (see Chapter 4) applied to the specific context of belligerent occupation.

Joint criminal enterprise (corporate)	The application to the corporate context of the international criminal law doctrine of joint criminal enterprise, under which multiple actors pursuing a common criminal purpose may be held collectively liable for crimes committed in furtherance of that purpose. In the occupied Palestinian territory, the aggregate conduct of corporate entities across the sectors examined constitutes such an enterprise; shared intent is not required — knowledge of and material contribution to the criminal purpose are sufficient (Albanese, 2025).
Nakba	Arabic for “catastrophe”: the ethnic cleansing of over 700,000 Palestinians during the 1947–1949 war, accompanied by the destruction of over 500 villages and the permanent denial of the right of return. Not a concluded historical event but a continuous process — from 1948 to the demolitions in Area C in 2025 — and a prodrome: the symptom that announces, in the absence of accountability, a condition that becomes systemic and replicable.
Selective silence	The differential pattern of institutional response — by academic, professional, and medical associations — to comparable violations of international law and public health standards, determined by the geopolitical identity of the victims. Documented by De Vogli et al. (2025) in <i>The Lancet</i> as selective empathy: a form of institutional complicity through inaction, and a governance failure in the production and validation of knowledge about mass atrocity.

Consolidated Bibliography

This bibliography consolidates all 401 works cited across the twelve chapters of this volume. Entries are listed alphabetically by first author's surname. Where a work is cited in multiple chapters, it appears here once only.

A

- Acosta, A. (2013). Extractivism and neoextractivism: Two sides of the same curse. In M. Lang & D. Mokrani (Eds.), *Beyond development: Alternative visions from Latin America* (pp. 61–86). Transnational Institute
- Africa Resources Working Group. (2008). *Environmental and social impacts of the proposed Gibe III hydroelectric project in southwest Ethiopia*. <https://www.forestpeoples.org/sites/default/files/publication/2010/08/ethiopiahydroelecimpactsmay08eng.pdf>
- African Centre for Media Excellence. (2023, June). *Biometric digital identity programs and independent journalism in Uganda*. ACME. <https://acme-ug.org/wp-content/uploads/Biometric-Digital-Identity-Programs-and-Independent-Journalism-in-Uganda.pdf>
- African Development Bank. (2010). *Problem solving report: Ethiopia – Gibe III hydroelectric project*. Independent Review Mechanism. <https://irm.afdb.org/sites/default/files/project-file/Problem-solving%20Report%20-%20Gibe%20III-1%20Hydroelectric%20Power%20Project.pdf>
- Akkad, D. (2024). US-made fighter jets in Gaza war. <https://www.businessinsider.com/us-fighter-jets-israel-air-war-gaza-2024-1>
- Alatout, S. (2006). Towards a bio-territorial conception of power: Territory, population, and environmental narratives in Palestine and Israel. *Political Geography*, 25(6), 601–621. <https://doi.org/10.1016/j.polgeo.2006.03.008>
- Albanese, F. (2023). *Arbitrary deprivation of liberty in the occupied Palestinian territory: the Palestinian experience behind and beyond bars*. Report of the Special Rapporteur on the situation of human rights in the Palestinian territories occupied since 1967 (A/HRC/53/59). Human Rights Council. <https://docs.un.org/en/A/HRC/53/59>
- Albanese, F. (2024). *Anatomy of a genocide*. Report of the Special Rapporteur on the situation of human rights in the Palestinian territories occupied since 1967 (A/HRC/55/73). Human Rights Council. <https://documents.un.org/doc/undoc/gen/g24/046/11/pdf/g2404611.pdf>

- Albanese, F. (2025). *From economy of occupation to economy of genocide*. Report of the Special Rapporteur on the situation of human rights in the Palestinian territories occupied since 1967 (A/HRC/59/23). Human Rights Council. <https://www.un.org/unispal/document/a-hrc-59-23-from-economy-of-occupation-to-economy-of-genocide-report-special-rapporteur-francesca-albanese-palestine-2025/>
- Albanese, F., & Elia, C. (2023). *J'accuse: Gli attacchi del 7 ottobre, Hamas, il terrorismo, Israele, l'apartheid in Palestina e la guerra*. Fuoriscena.
- Al Jazeera. (2021, May 15). Gaza tower housing Al Jazeera office destroyed by Israeli attack. *Al Jazeera*. <https://www.aljazeera.com/news/2021/5/15/building-housing-al-jazeera-office-in-gaza-hit-by-israeli-strike>
- Al Jazeera. (2023, May 7). The chilling effect of Israel's ongoing surveillance of Palestinians. <https://www.aljazeera.com/news/2023/5/7/chilling-effect-israels-ongoing-surveillance-of-palestinians>
- Al-Haq. (2019, February 13). *The surveillance industry and human rights: Israel's marketing of the occupation of Palestine*. Submission to the UN Special Rapporteur on the Promotion and Protection of the Right to Freedom of Opinion and Expression. https://www.alhaq.org/cached_uploads/download/alhaq_files/images/stories/PDF/Submission_to_the_UN_Special_Rapporteur_on_the_Promotion_and_Protection_of_the_Right_to_Freedom_of_Opinion_and_Expression.pdf
- American Friends Service Committee (AFSC). (2022). *Lockheed Martin Corp. Investigate*. <https://investigate.afsc.org/company/lockheed-martin>
- American Friends Service Committee (AFSC). (2023). *Companies profiting from 2023–2024 attacks on Gaza*. <https://afsc.org/gaza-genocide-companies>
- Amnesty International. (2010). *Uganda: Amnesty International memorandum on the Regulation of Interception of Communications Act, 2010* (AI Index: AFR 59/016/2010). <https://www.amnesty.org/ar/wp-content/uploads/2021/07/afr590162010en.pdf>
- Amnesty International (2017). *Time to Recharge: Corporate Action and Inaction to Tackle Abuses in the Cobalt Supply Chain*. Amnesty International. <https://www.amnesty.org/en/wp-content/uploads/2021/05/AFR6273952017ENGLISH.pdf>
- Amnesty International. (2019). *Outsourcing responsibility: Human rights policies in the defence sector*. <https://www.amnesty.org/en/documents/act30/0893/2019/en/>
- Amnesty International. (2022). *Automated apartheid: How facial recognition*

fragments, segregates, and controls Palestinians in the OPT. Amnesty International.

Amnesty International. (2023, May 2). Israel/OPT: Israeli authorities are using facial recognition technology to entrench apartheid. <https://www.amnesty.org/en/latest/news/2023/05/israel-opt-israeli-authorities-are-using-facial-recognition-technology-to-entrench-apartheid/>

Amnesty International. (2024). *The involvement of business enterprises in the commission of international crimes connected to Israel's unlawful occupation, racial segregation, and apartheid regime in the occupied Palestinian territory.* <https://www.amnesty.org/en/wp-content/uploads/2024/12/IOR4088472024ENGLISH.pdf>

Andrews, D. Q., & Naidenko, O. V. (2020). Population-wide exposure to per- and polyfluoroalkyl substances from drinking water in the United States. *Environmental Science & Technology Letters*, 7(12), 931–936. <https://doi.org/10.1021/acs.estlett.0c00713>

Anhui Huamao Group Co., Ltd. (n.d.). Company profile. http://www.huamao.com.cn/e_company.asp

Armiero, M. (2021). *Wasteocene: Stories from the global dump.* Cambridge University Press.

Aura Blockchain Consortium. (2025). Digital product passport & digital collectibles: Enhancing customer experience and compliance. <https://auraconsortium.com/solutions>

Austin, K. G., Schwantes, A., Gu, Y., & Kasibhatla, P. S. (2019). What causes deforestation in Indonesia? *Environmental Research Letters*, 14(2), Article 024007. <https://doi.org/10.1088/1748-9326/aaf6db>

Australian Strategic Policy Institute. (2020). *Uyghurs for sale.* <https://www.aspi.org.au/report/uyghurs-sale>

Avery, S. (2012). *Lake Turkana and the lower Omo: Hydrological impacts of major dam and irrigation projects.* African Studies Centre, University of Oxford. https://africanstudies.web.ox.ac.uk/sites/default/files/africanstudies/documents/media/executive_summary_introduction.pdf

B

Bacciarelli, A. (2023, September 29). Time to ban facial recognition from public spaces and borders. *Human Rights Watch.* <https://www.hrw.org/news/2023/09/29/time-ban-facial-recognition-public-spaces-and-borders>

- Banerji, S., & Willoughby, R. (2019). *Addressing the human cost of Assam tea: An agenda for change to respect, protect and fulfil human rights on Assam tea plantations*. Oxfam. <http://hdl.handle.net/10546/620876>
- Barona, E., Ramankutty, N., Hyman, G., & Coomes, O. T. (2010). The role of pasture and soybean in deforestation of the Brazilian Amazon. *Environmental Research Letters*, 5(2), Article 024002. <https://doi.org/10.1088/1748-9326/5/2/024002>
- Barua, D. N. (1989). History of tea cultivation. In *Science and practice in tea culture* (p. 509). Tea Research Association.
- Batok, N. (2024, August 15). Technology, power, and surveillance: Impact on identity. *Meer*. <https://www.meer.com/en/81023-technology-power-and-surveillance-impact-on-identity>
- Beckert, S. (2015). *Empire of cotton: A new history of global capitalism*. Penguin Books.
- Behrendt, C., Nguyen, Q. A., & Rami, U. (2019). Social protection systems and the future of work: Ensuring social security for digital platform workers. *International Social Security Review*, 72(3), 17–34. <https://doi.org/10.1111/issr.12212>
- Behalal, Z. (2025, January 31). The war for Congo's wealth: How organised crime fuels the M23 crisis in eastern DRC. *Global Initiative against Transnational Organised Crime*. <https://globalinitiative.net/analysis/m23-organized-crime-rwanda-congo-drc-goma-conflict/>
- Berg, J. (2016). Income security in the on-demand economy: Findings and policy lessons from a survey of crowdworkers. *Comparative Labour and Policy Journal*, 37(3), 543–576. https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@ed_protect/@protrav/@travail/documents/publication/wcms_479693.pdf
- BDS Italia. (2014). *Linee guida PACBI* (revisione luglio 2014). <https://bdsitalia.org/index.php/la-campagna/1506-linee-guida-pacbi-ba-revisione-luglio-2014>
- Bhat, B. A. (2013). Forced labor of children in Uzbekistan's cotton industry. *International Journal on World Peace*, 30(4), 61–85. <http://www.jstor.org/stable/24543696>
- BNP Paribas. (2017, December 12). *United Nations Environment Programme (UN Environment) and BNP Paribas partner to bring private capital to sustainable projects in emerging countries* [Press release]. <https://group.bnpparibas/en/press-release/united-nations-environment-programme-un-environment-bnp-paribas-partnering-bring-private-capital->

sustainable-projects-emerging-countries

- Bolt, J., & Van Zanden, J. L. (2023). Maddison style estimates of the evolution of the world economy: A new 2023 update. *Maddison Project Database, version 2023*. <https://www.rug.nl/ggdc/historicaldevelopment/maddison/>
- Borras, S. M., & Franco, J. C. (2023). *Scholar-activism and land struggles*. Practical Action Publishing. <https://practicalactionpublishing.com/book/2701/scholar-activism-and-land-struggles>
- Boucher, D., Roquemore, S., & Fitzhugh, E. (2013). Brazil's success in reducing deforestation. *Tropical Conservation Science*, 6(3), 426–445. <https://doi.org/10.1177/194008291300600308>
- British Broadcasting Corporation. (2020). China's hidden camps. *BBC News*. https://www.bbc.co.uk/news/resources/idx-sh/China_hidden_camps
- British Broadcasting Corporation. (2023). China's tainted cotton. *BBC News*. <https://www.bbc.co.uk/news/extra/nz0g306v8c/china-tainted-cotton>
- Buonsanti, G., Colombo, C., Woche, J. L., & Piazza, E. (2025). Systemic surveillance in the Occupied Palestinian Territories: A violation of fundamental human rights? The case of Red Wolf. *Working paper*, University of Padova.
- Business and Human Rights Resource Centre. (2021). *Trouble brewing: The need for transparency in tea supply chains*. <https://www.business-humanrights.org/en/from-us/briefings/trouble-brewing-the-need-for-transparency-in-tea-supply-chains/>
- Business and Human Rights Resource Centre. (2023). *H&M: Low wages and purchasing practices*. <https://www.business-humanrights.org/en/blog/hm-praised-by-media-for-committing-to-pay-poverty-wages/>
- Business and Human Rights Resource Centre. (2023). *Boiling point: Strengthening corporate accountability in the tea industry*. <https://www.business-humanrights.org/en/from-us/briefings/boiling-point-strengthening-corporate-accountability-in-the-tea-industry/>
- Business and Human Rights Resource Centre. (2024). *Prada: Supplier lists and accountability*. <https://www.business-humanrights.org/en/companies/prada/>
- Business and Human Rights Resource Centre. (2025). *Defending rights and realising just economies: Human rights defenders and business (2015–2024)*. <https://www.business-humanrights.org/en/from-us/briefings/human-rights-defenders-and-business-10-year-analysis/defending-rights-and-realising-just-economies-human-rights-defenders-and-business-2015-2024/>

Business and Human Rights Resource Centre. (2025). *Global fashion brands' purchasing practices shifting financial pressure of decarbonisation onto suppliers*. <https://www.business-humanrights.org/en/latest-news/global-fashion-brands-purchasing-practices-are-shifting-financial-pressure-of-decarbonisation-onto-suppliers-2/>

Busquet, M., Bosma, N., & Hummels, H. (2021). A multidimensional perspective on child labor in the value chain: The case of the cocoa value chain in West Africa. *World Development*, 146, Article 105601. <https://doi.org/10.1016/j.worlddev.2021.105601>

C

Campagna per la Riforma della Banca Mondiale, & CEE Bankwatch Network. (2008). *The Gilgel Gibe affair: An analysis of the Gilgel Gibe hydroelectric projects in Ethiopia*. https://bankwatch.org/wp-content/uploads/2008/02/gibe_study.pdf

Carbon Majors Database. (2017). *Carbon majors report 2017*. Climate Accountability Institute. <https://climateattribution.org/resources/the-carbon-majors-database-methodology-report-2017>

Carnegie Endowment for International Peace. (2023). *Why does the global spyware industry continue to thrive? Trends, explanations, and responses*. <https://carnegieendowment.org/2023/03/14/why-does-global-spyware-industry-continue-to-thrive-trends-explanations-and-responses-pub-89229>

Carr, C. J. (2017). *River basin development and human rights in Eastern Africa: A policy crossroads*. Springer. <https://doi.org/10.1007/978-3-319-28480-4>

Carter, C., Finley, W., Fry, J., Jackson, D., & Willis, L. (2007). Palm oil markets and future supply. *European Journal of Lipid Science and Technology*, 109(4), 307–314. <https://doi.org/10.1002/ejlt.200600256>

Ceretelli, C. (2026). Decent work in the gig economy: An appraisal of the EU and ILO regulation of digital labour platforms. *European Papers – A Journal on Law and Integration*, 11(1), 113–138. <https://doi.org/10.15166/2499-8249/864>

Chancel, L., Piketty, T., Saez, E., & Zucman, G. (2022). *World Inequality Report 2022*. World Inequality Lab. <https://wir2022.wid.world/>

Chatterton, P., Fuller, D., & Routledge, P. (2010). Chapter 25: Relating action to activism: Theoretical and methodological reflections. In S. Kindon, R. Pain, & M. Kesby (Eds.), *Participatory action research approaches and methods* (pp. 216–222). Routledge. <https://www.taylorfrancis.com/chapters/edit/10.4324/9780203933671-38>

- Chayka, K. (2025, May 21). How Andor injects contemporary politics into Star Wars I.P. *The New Yorker*. <https://www.newyorker.com/culture/infinite-scroll/how-andor-injects-contemporary-politics-into-star-wars-ip>
- Clark, M. A., Williams, D. R., Buchanan, G. M., Ficetola, G. F., Rondinini, C., & Tilman, D. (2020). Proactive conservation to prevent habitat losses to agricultural expansion. *Nature Sustainability*, 3, 1133–1139. <https://doi.org/10.1038/s41893-020-00656-5>
- Clean Clothes Campaign. (2023). *Fast fashion purchasing practices in the EU*. <https://cleanclothes.org/news/2023/fast-fashion-purchasing-practices>
- Climate Rights International. (n.d.). Critical minerals. <https://cri.org/critical-minerals/>
- Coffey, M. S. (2026). The hero of Star Wars' Andor: liberal rebel and authoritarian imperial lessons in navigating the “sarlacci” of all-source intelligence analysis and the intelligence cycle. *Intelligence and National Security*. <https://doi.org/10.1080/02684527.2025.2607373>
- Collaboration on International ICT Policy for East and Southern Africa. (2024, May). *Foreign influence on civic space in Uganda: Implications for digital rights* (Policy brief). https://cipesa.org/wp-content/files/briefs/Foreign_Influence_on_Civic_Space_in_Uganda_-_Implications_for_Digital_Rights.pdf
- Committee of Ministers of the Council of Europe. (2024). *Recommendation CM/Rec(2024)2 of the Committee of Ministers to member States on countering the use of strategic lawsuits against public participation (SLAPPs)*. Council of Europe. https://search.coe.int/cm/Pages/result_details.aspx?ObjectId=0900001680af61df
- Convention on the Elimination of All Forms of Discrimination against Women. (1979). *United Nations Treaty Series*, 1249, 13. https://treaties.un.org/doc/Treaties/1981/09/19810903%2005-18%20AM/Ch_IV_8p.pdf
- Convention on the Rights of the Child. (1989). *United Nations Treaty Series*, 1577, 3. https://treaties.un.org/doc/Treaties/1990/09/19900902%2003-14%20AM/Ch_IV_11p.pdf
- CORDA – Coordinamento Ricercatori* Dottorandi* e Assegnisti* dell'Università di Padova. (2025). *L'Accademia di fronte al genocidio* [Appello pubblico]. Università di Padova. <https://docs.google.com/forms/d/e/1FAIpQLSdn2yeSVFarPQLDCfCtO3DYSTv8tnxwbK38JwYOzuSSCt2yhg/viewform>
- Council of the European Union. (2024, May 24). *Corporate sustainability due diligence: Council gives its final approval* [Press release]. <https://www.>

- consilium.europa.eu/en/press/press-releases/2024/05/24/corporate-sustainability-due-diligence-council-gives-its-final-approval/
- Court of Justice of the European Union. (1994). *Irene Anastasiou v Bundesamt für Ernährung und Forstwirtschaft* (Case C-432/92, ECLI:EU:C:1994:265). <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A61992CJ0432>
- Court of Justice of the European Union. (2019). *Organisation juive européenne and Vignoble Psagot Ltd v Ministre de l'Économie et des Finances* (Case C-363/18, ECLI:EU:C:2019:494). <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:62018CJ0363>
- Cristofolini, C. (2024). Navigating the impact of AI systems in the workplace: Strengths and loopholes of the EU AI Act from a labour perspective. *Italian Labour Law e-Journal*, 17(1), 75–98. <https://doi.org/10.6092/issn.1561-8048/19796>
- Cuervo-Cazurra, A., Dieleman, M., Hirsch, P., Rodrigues, S. B., & Zyglidopoulos, S. (2021). Multinationals' misbehaviour. *Journal of World Business*, 56(5), Article 101244. <https://doi.org/10.1016/j.jwb.2021.101244>
- Curtis, P. G., Slay, C. M., Harris, N. L., Tyukavina, A., & Hansen, M. C. (2018). Classifying drivers of global forest loss. *Science*, 361(6407), 1108–1111. <https://doi.org/10.1126/science.aau3445>

D

- Daly, H. E. (1977). *Steady-state economics: The economics of biophysical and moral growth*. W. H. Freeman.
- Daly, H. E. (1996). *Beyond growth: The economics of sustainable development*. Beacon Press.
- Daly, H. E. (2012). *Ecological economics: Principles and applications* (2nd ed.). Island Press.
- De Freitas, M. V. (2025a, October 3). *Digital sovereignty and data colonialism: Shaping a just digital order for the Global South* (Policy Paper No. 38/25). Policy Center for the New South. <https://www.policycenter.ma/publications/digital-sovereignty-and-data-colonialism-shaping-just-digital-order-global-south>
- De Freitas, M. V. (2025b, November). *The Fourth Industrial Revolution: The haves, the have-nots, and the new frontiers of technological colonialism* (Policy Paper No. 41/25). Policy Center for the New South. https://www.policycenter.ma/sites/default/files/2025-11/PP_41-25_Marcus%20Vinicius%20De%20Freitas.pdf

- Delmas, M. A., & Burbano, V. C. (2011). The drivers of greenwashing. *California Management Review*, 54(1), 64–87. <https://doi.org/10.1525/cmr.2011.54.1.64>
- De Stefano, V. (2016). The rise of the just-in-time workforce: On-demand work, crowdwork and labor protection in the gig economy. *Comparative Labor Law and Policy Journal*, 37(3), 471–504. <https://doi.org/10.2139/ssrn.2682602>
- De Stefano, V. (2017). Lavoro “su piattaforma” e lavoro non-standard in prospettiva internazionale comparata. *Rivista giuridica del lavoro e della previdenza sociale*, 67(2), 241–255. https://www.futura-editrice.it/wp-content/uploads/2018/09/Rgl-2_2017_Dottrina2_ONLINE-1.pdf
- De Stefano, V., & Aloisi, A. (2018). *European legal framework for “digital labour platforms.”* Publications Office of the European Union. <https://doi.org/10.2760/78590>
- De Vogli, R., Montomoli, J., Abu-Sittah, G., & Pappé, I. (2025). Break the selective silence on the genocide in Gaza. *The Lancet*, 406, 688–689. [https://doi.org/10.1016/S0140-6736\(25\)01541-7](https://doi.org/10.1016/S0140-6736(25)01541-7)
- Deva, S., & Bilchitz, D. (Eds.). (2013). *Human rights obligations of business: Beyond the corporate responsibility to respect?* Cambridge University Press.
- Di Nisio, A., Lopez-Espinosa, M. J., & Foresta, C. (2022). Editorial: Emerging chemical risks for human health: Endocrine disruption by per- and poly-fluorinated alkyl substances (PFAS). *Frontiers in Endocrinology*, 12, Article 813785. <https://doi.org/10.3389/fendo.2021.813785>
- Directive (EU) 2024/1760 of the European Parliament and of the Council of 13 June 2024 on corporate sustainability due diligence and amending Directive (EU) 2019/1937 and Regulation (EU) 2023/2859. (2024). *Official Journal of the European Union*, OJ L 2024/1760. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L_202401760
- Duara, M., & Mallick, S. (2019). Women workers and industrial relations in tea estates of Assam. *Indian Journal of Industrial Relations*, 55, 15–26. <http://publishingindia.com/ijir/22/women-workers-and-industrial-relations-in-tea-estates-of-assam/803/5580>
- Dutta, P. (2015). *Locating the historical past of the women tea workers of North Bengal* (Working Paper No. 341). Institute for Social and Economic Change. <https://www.isec.ac.in/wp-content/uploads/2023/07/WP-341-Priyanka-Dutta.pdf>

E

- Edimo, R. M. M., & Rajaoson, J. (Eds.). (2025). *China's Belt and Road Initiative in Africa: Aid policies and economic development*. Palgrave Macmillan. <https://doi.org/10.1007/978-3-031-80400-7>
- Effoduh, J. O. (2025). Digital colonialism and the role of local intermediaries: Examining Big Tech's impact on data sovereignty and human rights in Africa. *Business and Human Rights Journal*, 10(2–3), 301–317. <https://doi.org/10.1017/bhj.2025.10021>
- Egels-Zandén, N., & Lindholm, H. (2015). Do codes of conduct improve worker rights in supply chains? A study of Fair Wear Foundation. *Journal of Cleaner Production*, 107, 31–40. <https://doi.org/10.1016/j.jclepro.2014.08.096>
- Ellis, E. C. (2011). Anthropogenic transformation of the terrestrial biosphere. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 369(1938), 1010–1035. <https://doi.org/10.1098/rsta.2010.0331>
- Energy Institute. (2025). *Statistical review of world energy*. Energy Institute.
- Environmental Justice Foundation. (2007). *The children behind our cotton*. EJF. <https://ejfoundation.org/reports/the-children-behind-our-cotton>
- Ethical Tea Partnership. (2023). *ETP and UNICEF launch third phase of partnership*. <https://etp-global.org/news/press-release/etp-unicef-launch-third-phase-of-partnership/>
- Etifor. (2026). *Omnibus I: What changes for the CSRD and the CSDDD*. <https://www.etifor.com/en/whats-going-on/pacchetto-omnibus-csrd-csddd/>
- European Agency for Safety and Health at Work. (2022). *Digital platform work and occupational safety and health : overview of regulation, policies, practices and research : report, Publications Office of the European Union*. <https://op.europa.eu/en/publication-detail/-/publication/49a265d4-b0a3-11ec-83e1-01aa75ed71a1>
- European Centre for Constitutional and Human Rights. (2020). *Garment supply chains in intensive care? Human rights due diligence in times of (economic) crises*. European Centre for Constitutional and Human Rights. https://www.ecchr.eu/fileadmin/Publikationen/ECCHR_PP_SUPPLYCHAINS_COVID_EN.pdf
- European Centre for Constitutional and Human Rights. (2021a). *China – forced labor and the Uyghur population: Corporate responsibility and legal action*. European Centre for Constitutional and Human Rights. <https://www.ecchr.eu/en/case/china-zwangsarbeit-uighuren/>

- European Centre for Constitutional and Human Rights. (2021b). *Forced labor and corporate responsibility in Xinjiang: Legal analysis and recommendations*. European Centre for Constitutional and Human Rights. https://www.ecchr.eu/fileadmin/user_upload/_ECCHR_PP_XINJIANG_PF.pdf
- European Centre for Constitutional and Human Rights. (2023). *The EU supply chain law: Holding corporations accountable for human rights abuses*. European Centre for Constitutional and Human Rights. <https://www.ecchr.eu/en/case/eu-lieferketten-gesetz/>
- European Commission. (2022, February 23). *Proposal for a directive of the European Parliament and of the Council on corporate sustainability due diligence and amending Directive (EU) 2019/1937 (COM/2022/71 final)*. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52022PC0071>
- European Commission. (2024). *Corporate sustainability due diligence*. https://commission.europa.eu/business-economy-euro/doing-business-eu/corporate-sustainability-due-diligence_en
- European Environmental Bureau. (2026, February 5). *Letter to the Heads of State and Government in view of the Informal EU leaders' Retreat on 12 February – recommendations from environmental citizens organisations*. <https://eeb.org/wp-content/uploads/2026/02/EEBs-Letter-to-EU-leaders-for-Informal-Retreat-12-Feb-2026.pdf>
- European Investment Bank. (2010). *European Investment Bank's clarification of involvement in Gibe III project and commitment to East African energy sector* [Press release]. <https://www.eib.org/en/press/all/2010-126-european-investment-banks-clarification-of-involvement-in-gibe-3-project-and-commitment-to-east-african-energy-sector>
- European Parliament. (2016). *Report on land grabbing and human rights (Resolution 2016/2078(INI))*. https://www.europarl.europa.eu/doceo/document/A-8-2016-0349_EN.html
- European Parliament. (2021, March 10). *Resolution on corporate due diligence and corporate accountability (2020/2129(INL))*. https://www.europarl.europa.eu/doceo/document/TA-9-2021-0073_EN.html
- European Parliament. (2025, February 6). *MEPs want to suspend EU-Rwanda deal on critical raw materials* [Press release]. <https://www.europarl.europa.eu/news/en/press-room/20250206IPR26752/meps-want-to-suspend-eu-rwanda-deal-on-critical-raw-materials>

European Parliament and Council of the European Union. (2024a). *Directive (EU) 2024/1069 of the European Parliament and of the Council of 11 April 2024 on protecting persons who engage in public participation from manifestly unfounded claims or abusive court proceedings ('Strategic lawsuits against public participation')*. Official Journal of the European Union, L series. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32024L1069>

European Parliament and Council of the European Union. (2024b). *Directive (EU) 2024/2831 of the European Parliament and of the Council of 23 October 2024 on improving working conditions in platform work*. Official Journal of the European Union, L series. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32024L2831>

Eurostat. (2023). Glossary: Digital divide. *Eurostat – Statistics Explained*. European Commission. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Digital_divide

F

Fabian, E. (2023, October 11). IDF: Multiple rocket launcher used to target Hamas in Gaza for first time since 2006. *The Times of Israel*. https://www.timesofisrael.com/liveblog_entry/idf-multiple-rocket-launcher-used-to-target-hamas-in-gaza-for-first-time-since-2006/

Food and Agriculture Organization of the United Nations. (2022). *International tea market: Market situation, prospects and emerging issues*. FAO. <https://openknowledge.fao.org/handle/20.500.14283/cc0238en>

Food and Agriculture Organization of the United Nations. (2025). *FAOSTAT: Crops and livestock products* [Dataset]. <https://www.fao.org/faostat/en/#data/QCL>

Forever Pollution Project. (2023). *Journalists tracking PFAS across Europe*. <https://foreverpollution.eu/>

Francis. (2015). *Laudato si': On care for our common home* [Encyclical letter]. Vatican Press.

Frankenthal, I., & Dutta, D. (2021). *Risk factors for gender-based violence: The case of Indian agriculture*. Oxfam Research Backgrounder Series. <https://policy-practice.oxfam.org/resources/risk-factors-for-gender-based-violence-the-case-of-indian-agriculture-621301/>

Fraanje, W., & Garnett, T. (2020). *Soy: Food, feed, and land use change* (Foodsource Building Blocks). Food Climate Research Network, University of Oxford. <https://tabledebates.org/building-blocks/soy-food-feed-and-land-use-change>

- Fredman, S., Du Toit, D., Bertolini, A., Valente, J., & Graham, M. (2025). Fair work for platform workers: Lessons from the EU Directive and beyond. *Industrial Law Journal*, 54(2), 425–467. <https://doi.org/10.1093/indlaw/dwaf018>
- Freeman, B. (2012, July 26). Ex Lockheed lobbyist now in key defence oversight role. *POGO*. <https://www.pogo.org/analysis/ex-lockheed-lobbyist-now-in-key-defence-oversight-role>
- Freire, P. (1970). *Pedagogy of the oppressed*. Herder and Herder.
- Fried, K. (2025, March 3). Remembering river defender Berta Cáceres. *International Rivers*. <https://www.internationalrivers.org/news/remembering-river-defender-berta-caceres/>

G

- Gallagher, J. (2021). *Lockheed Martin human rights assessment*. Investor Advocates for Social Justice.
- Gaveau, D. L. A., Sheil, D., Salim, M. A., Arjasakusuma, S., Ancrenaz, M., Pacheco, P., & Meijaard, E. (2016). Rapid conversions and avoided deforestation: Examining four decades of industrial plantation expansion in Borneo. *Scientific Reports*, 6, Article 32017. <https://doi.org/10.1038/srep32017>
- Geist, H. J., & Lambin, E. F. (2002). Proximate causes and underlying driving forces of tropical deforestation. *BioScience*, 52(2), 143–150. [https://doi.org/10.1641/0006-3568\(2002\)052\[0143:PCAUDF\]2.0.CO;2](https://doi.org/10.1641/0006-3568(2002)052[0143:PCAUDF]2.0.CO;2)
- Gender and Trade Coalition. (n.d.). *Creating a feminist alliance for trade justice*. <https://gendertradecoalition.org/publications/creating-a-feminist-alliance-for-trade-justice/>
- Gibbs, H. K., Rausch, L., Munger, J., Schelly, I., Morton, D. C., Noojipady, P., Rueda, X., Lambin, E. F., Coe, M. T., & Walker, N. F. (2015). Brazil's soy moratorium. *Science*, 347(6220), 377–378. <https://doi.org/10.1126/science.aaa0181>
- Gibbs, H. K., Ruesch, A. S., Achard, F., Clayton, M. K., Holmgren, P., Ramankutty, N., & Foley, J. A. (2010). Tropical forests were the primary sources of new agricultural land in the 1980s and 1990s. *Proceedings of the National Academy of Sciences*, 107(38), 16732–16737. <https://doi.org/10.1073/pnas.0910275107>
- Global Carbon Budget. (2025). *Global carbon budget 2025*. <https://www.globalcarbonproject.org>

- Global Footprint Network. (2024). *Ecological footprint: Data and methodology*. <https://www.footprintnetwork.org>
- Global Forest Watch. (2023). *Global forest loss data* [Dataset]. <https://www.globalforestwatch.org>
- Głowacka, D., Youngs, R., & Pintea, A. (2021). *Digital technologies as a means of repression and social control*. European Parliament. <https://europeecologie.eu/wp-content/uploads/2021/06/Study-EP-digital-technologies-as-a-means-of-repression-and-social-control.pdf>
- Global Network for the Right to Food and Nutrition. (2016). *A life without dignity — the price of your cup of tea: Abuses and violations of human rights in tea plantations in India*. GNRTFN. https://pre2020.iuf.org/w/sites/default/files/FFMFINALReport_160616_web.pdf
- Götzmann, N., Wrzoncki, E., Kristiansson, L., & Heydari, E. (2018). *Women in business and human rights: A mapping of topics for state attention in United Nations Guiding Principles on Business and Human Rights implementation processes*. Danish Institute for Human Rights. <https://www.humanrights.dk/publications/women-business-human-rights>
- Gravett, W. (2020). Digital neo-colonialism: The Chinese model of internet sovereignty in Africa. *African Human Rights Law Journal*, 20(1). https://www.scielo.org/za/scielo.php?pid=S1996-20962020000100006&script=sci_arttext
- Gudynas, E. (2015). *Extractivismos: Ecología, economía y política de un modo de entender el desarrollo y la naturaleza*. CEDIB.
- Guillot, M., Draidi, M., Cetorelli, V., Silva, J. H. C. M., & Lubbad, I. (2025). Life expectancy losses in the Gaza Strip during the period October 2023 to September 2024. *The Lancet*, 405, 478–485. [https://doi.org/10.1016/S0140-6736\(24\)02810-1](https://doi.org/10.1016/S0140-6736(24)02810-1)
- Gupta, J., Rockström, J., Stewart-Koster, B., Rocha, K., Qin, D., Bunn, S. E., & Xiao, C. (2024). A just world on a safe planet: A Lancet Planetary Health–Earth Commission report on Earth-system boundaries, translations, and transformations. *The Lancet Planetary Health*, 8(10), e813–e873. [https://doi.org/10.1016/S2542-5196\(24\)00042-1](https://doi.org/10.1016/S2542-5196(24)00042-1)

H

- HaMoked. (2026). 9,384 “Security” inmates are held in prisons inside Israel. <https://hamoked.org/prisoners-charts.php>
- Harrison, J. (2013). Establishing a meaningful human rights due diligence process for corporations: learning from experience of human rights impact assessment. *Impact Assessment and Project Appraisal*, 31(2), 107–117. <https://doi.org/10.1080/14615517.2013.774718>

- Heinz, B., & Freeman, B. (2024, May 9). *Subsidizing the military-industrial complex: A review of the Secretary of Defence Executive Fellows (SDEF) Program*. Quincy Institute for Responsible Statecraft. <https://quincyinst.org/research/subsidizing-the-military-industrial-complex-a-review-of-the-secretary-of-defence-executive-fellows-sdef-program/>
- Herbert Smith Freehills. (2024, May 24). *Corporate sustainability due diligence to become mandatory across the EU*. <https://www.herbertsmithfreehills.com/latest-thinking/corporate-sustainability-due-diligence-to-become-mandatory-across-the-eu>
- Hickel, J. (2020). *Less is more: How degrowth will save the world*. Heinemann.
- Hillman, J. E., & McCalpin, M. (2019, November 4). Watching Huawei's safe cities. *Center for Strategic and International Studies (CSIS)*. <https://www.csis.org/analysis/watching-huaweis-safe-cities>
- Hosonuma, N., Herold, M., De Sy, V., De Fries, R. S., Brockhaus, M., Verchot, L., Angelsen, A., & Romijn, E. (2012). An assessment of deforestation and forest degradation drivers in developing countries. *Environmental Research Letters*, 7(4), Article 044009. <https://doi.org/10.1088/1748-9326/7/4/044009>
- Huawei. (2019, August 16). *Huawei issues legal letter to WSJ for false reporting damaging Huawei's reputation*. <https://www.huawei.com/ke/news/ke/2019/huawei-issues-legal-letter-to-wsj>
- Huawei. (2025a). *All intelligence for new Africa: Huawei Africa Night 2025 honours the "African Intelligence Pioneers."* <https://e.huawei.com/ma/news/ma/huawei-africa-night>
- Huawei. (2025b). *Smart city solutions*. Huawei Enterprise. <https://e.huawei.com/en/solutions/services/smart-city>
- Huawei. (n.d.-a). *Huawei statement on responsible mineral supply chain due diligence management*. <https://www.huawei.com/en/declarations/huawei-statement-on-responsible-mineral-supply-chain>
- Huawei. (n.d.-b). *Huawei supplier social responsibility code of conduct*. <https://www.huawei.com/en/sustainability/sustainability-report/huawei-supplier-social-responsibility-code-of-conduct>
- Hughes, S., Velednitsky, S., & Arden Green, A. (2023). Greenwashing in Palestine/Israel: Settler colonialism and environmental injustice in the age of climate catastrophe. *Environment and Planning E: Nature and Space*, 6(1), 495–513. <https://doi.org/10.1177/25148486211069898>
- Human Rights Watch. (2013a, January 25). *Uzbekistan: Forced labor widespread in cotton harvest*. <https://www.hrw.org/news/2013/01/25/uzbekistan-forced-labor-widespread-cotton-harvest>

- Human Rights Watch. (2013b, February 12). *Israel: Gaza airstrikes violated laws of war*. <https://www.hrw.org/news/2013/02/12/israel-gaza-airstrikes-violated-laws-war>
- Human Rights Watch. (2015, June 10). *Precious metal, cheap labour: Child labour and corporate responsibility in Ghana's artisanal gold mining*. <https://www.hrw.org/report/2015/06/10/precious-metal-cheap-labor/child-labor-and-corporate-responsibility-ghanas>
- Human Rights Watch. (2021a). *Mass surveillance fuels oppression of Uyghurs and Palestinians*. <https://www.hrw.org/news/2021/11/24/mass-surveillance-fuels-oppression-uyghurs-and-palestinians>
- Human Rights Watch. (2021b). *Uganda: End enforced disappearances of opponents*. <https://www.hrw.org/news/2021/03/11/uganda-end-enforced-disappearances-opponents>
- Human Rights Watch. (2023a). *Uganda: Rights concerns over license plate tracking*. <https://www.hrw.org/news/2023/11/14/uganda-rights-concerns-over-license-plate-tracking>
- Human Rights Watch. (2023b). *Human rights organizations welcome release of OHCHR's update to UN database of businesses*. <https://www.hrw.org/news/2023/07/05/human-rights-organizations-welcome-release-ohchrs-update-un-database-businesses>

I

- IDH – The Sustainable Trade Initiative. (2024). *Women Safety Accelerator Fund annual report 2023: Creating safe and empowered workspaces for women in the Indian tea sector*. IDH. <https://www.idhsustainabletrade.com/publication/womens-safety-accelerator-fund-annual-report-2023/>
- Industriall. (2024). *On the path for a just transition for textile and garment workers*. <https://news.industriall-europe.eu/Article/1105>
- Inter-American Court of Human Rights. (2021). *Advisory opinion on the right to freedom of association, right to collective bargaining and right to strike, and their relation to other rights, with a gender perspective* (OC-27/21). https://www.corteidh.or.cr/docs/opiniones/seriea_27_ing.pdf
- Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. (2023). *Summary for policymakers of the thematic assessment report on invasive alien species and their control* (H. E. Roy, Y. Pauchard, & A. Stoett, Eds.). IPBES Secretariat. <https://doi.org/10.5281/zenodo.7430692>
- International Commission of Jurists. (2023, May 29). *Submission to the UN Human Rights Committee in view of the Committee's examination of Uganda's second periodic report under Article 40 of the International*

- Covenant on Civil and Political Rights* (138th Session, 26 June–28 July 2023). https://www.icj.org/wp-content/uploads/2023/06/ICJ-Submission-on-Uganda-to-UN-Human-Rights-Committee-INT_CCPR_NGO_UGA_52995_E.pdf
- International Convention on the Elimination of All Forms of Racial Discrimination. (1965). *United Nations Treaty Series*, 660, 195.
- International Court of Justice. (2004). *Legal consequences of the construction of a wall in the occupied Palestinian territory* (Advisory Opinion, ICJ Case No. 131). <https://www.icj-cij.org/case/131>
- International Court of Justice. (2024a). *Application of the Convention on the Prevention and Punishment of the Crime of Genocide in the Gaza Strip (South Africa v. Israel): Order on provisional measures*. ICJ. <https://www.icj-cij.org/case/192>
- International Court of Justice. (2024b). *Legal consequences arising from the policies and practices of Israel in the occupied Palestinian territory, including East Jerusalem* (Advisory Opinion, ICJ Case No. 186). <https://www.icj-cij.org/sites/default/files/case-related/186/186-20240719-adv-01-00-en.pdf>
- International Covenant on Civil and Political Rights. (1966). *United Nations Treaty Series*, 999, 171.
- International Criminal Court. (2024, November 21). *Situation in the State of Palestine: ICC Pre-Trial Chamber I rejects the State of Israel's challenges to jurisdiction and issues warrants of arrest for Benjamin Netanyahu and Yoav Gallant*. ICC. <https://www.icc-cpi.int/news/situation-state-palestine-icc-pre-trial-chamber-i-rejects-state-israels-challenges>
- International Energy Agency. (2021). *The role of critical minerals in clean energy transitions*. IEA. <https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions>
- International Finance Corporation. (2012). *IFC performance standards on environmental and social sustainability: Handbook*. <https://www.ifc.org/en/insights-reports/2012/publications-handbook-pps>
- International Labour Organization. (1930). *Convention No. 29: Forced labour convention*. https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C029
- International Labour Organization. (1998). *ILO Declaration on Fundamental Principles and Rights at Work and its Follow-up: Adopted by the International Labour Conference at its Eighty-sixth Session, Geneva, 18 June 1998*. <https://www.ilo.org/resource/conference-paper/ilo-1998-declaration-fundamental-principles-and-rights-work-and-its-follow>

- International Labour Organization. (1999). *Worst forms of child labour convention, No. 182*. https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C182
- International Labour Organization. (1999). *Decent work: Report of the Director-General*. ILO.
- International Labour Organization. (2006). *Recommendation No. 198 on the Employment Relationship*.
- International Labour Organization. (2008). *ILO Declaration on Social Justice for a Fair Globalization*. ILO.
- International Labour Organization. (2014). *Protocol of 2014 to the Forced Labour Convention, 1930*. https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:P029
- International Labour Organization. (2016). *Child labour in cotton: A briefing. Fundamental Principles and Rights at Work Branch*. <https://www.ilo.org/media/419211/download>
- International Labour Organization. (2020). *Wages and working conditions in the tea sector: The case of India, Indonesia and Viet Nam*. ILO. <https://www.ilo.org/resource/project-document/wages-and-working-conditions-tea-sector-case-india-indonesia-and-viet-nam>
- International Labour Organization. (2021). *World employment and social outlook: The role of digital labour platforms in transforming the world of work*. ILO.
- International Labour Organization. (2022). *Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy (MNE Declaration)*. Geneva: ILO. https://www.ilo.org/empent/Publications/WCMS_101234/lang--en/index.htm
- International Labour Organization. (2025a). *Realizing decent work in the platform economy* (ILC.113/Report V(1)). ILO.
- International Labour Organization. (2025b). *Decent work in the platform economy* (ILC.114/Report V(3)). ILO.
- International Labour Organization, Walk Free, & International Organization for Migration. (2022). *Global estimates of modern slavery: Forced labour and forced marriage*. ILO. <https://publications.iom.int/system/files/pdf/ILO-GEMS-2022.pdf>
- International Renewable Energy Agency. (2021). *Renewable energy and jobs: Annual review 2021*. <https://www.irena.org/publications/2021/Aug/Renewable-Energy-and-Jobs-Annual-Review-2021>

- International Resource Panel. (2019). *Global resources outlook 2019: Natural resources for the future we want*. United Nations Environment Programme.
- International Rivers. (2011). *Gibe III dam factsheet*. <https://www.internationalrivers.org/wp-content/uploads/sites/86/2020/05/Gibe3factsheet2011.pdf>
- International Rivers. (2013). *Gibe III dam: Impacts on the Omo River and Lake Turkana*. <https://riverresourcehub.org/resources/gibe-iii-s-impacts-on-lake-turkana-7773/>
- International Union for Conservation of Nature. (2025). *The IUCN Red List of Threatened Species* (Version 2025-2). <https://www.iucnredlist.org>
- Investor Advocates for Social Justice. (2021, March 26). *Notice of exempt solicitation (Form PX14A6G) for Lockheed Martin Corporation*. US Securities and Exchange Commission. <https://www.sec.gov/Archives/edgar/data/1636143/000121465921003503/j326212px14a6g.htm>

J

- Jackson, T. (2017). *Prosperity without growth: Foundations for the economy of tomorrow* (2nd ed.). Routledge.
- Jain, Y. (2025). Human rights in the 21st century. *Journal of Legal Research and Polity*. <https://doi.org/10.64322/JLRP.2025.2213>
- Jensen, S., Mazhitova, Z., & Zetterström, R. (1997). Environmental pollution and child health in the Aral Sea region in Kazakhstan. *Science of the Total Environment*, 206(2), 187–193. [https://doi.org/10.1016/S0048-9697\(97\)80009-5](https://doi.org/10.1016/S0048-9697(97)80009-5)
- Jia, G., Shevliakova, E., Artaxo, P., Nobre, C. A., & Houghton, R. A. (2020). Land–climate interactions. In *Climate change and land: An IPCC special report*. IPCC.
- Jieutsa, L., Gbaguidi, I., Nadifi, W., & Koseki, S. (2024). Deployment of digital technologies in African cities: Emerging issues and policy recommendations for local governments. *Data & Policy*, 6, e21. <https://doi.org/10.1017/dap.2024.7>

K

- Kafeero, S. (2022, July 21). Uganda uses China's Huawei facial recognition to snare protesters. *Quartz Africa*. <https://qz.com/africa/1938976/uganda-uses-chinas-huawei-facial-recognition-to-snare-protesters>
- Kallis, G., Paulson, S., D'Alisa, G., & Demaria, F. (2018). *The case for degrowth*. Polity Press.

- Kamalov, A. (2021). Uyghur historiography. *Oxford Research Encyclopedia of Asian History*. <https://doi.org/10.1093/acrefore/9780190277727.013.637>
- Kassoti, E. (2017). *The legality under international law of the EU's trade agreements covering occupied territories: A comparative study of Palestine and Western Sahara* (CLEER Paper Series 2017/3). T.M.C. Asser Institute for International & European Law. <https://ssrn.com/abstract=3118941>
- Kaya, Y., & Yokobori, K. (1997). *Environment, energy, and economy: Strategies for sustainability*. United Nations University Press.
- Khanna, M. (Ed.). (2011). *Thirty minor Upanisads* (K. N. Aiyar, Trans.). Tantra Foundation. (Original work published 1914 by Annie Besant at the Vasanta Press, Madras). <https://archive.org/details/thirtyminorupani00xxxxuoft>
- Kirabo, J. (2019, August 15). WSJ reports Huawei helped the Ugandan government to hack Bobi Wine's WhatsApp, Skype conversations. *Nile Post*. <https://nilepost.co.ug/news/52067/wsj-reports-huawei-helped-the-ugandan-government-to-hack-bobi-wines-whatsapp-skype-conversations>
- Kitzmann, N. H., Caesar, L., Sakschewski, B., & Rockström, J. (Eds.). (2025). *Planetary health check 2025*. Potsdam Institute for Climate Impact Research. <https://doi.org/10.48485/pik.2025.017>
- Klein, N. (2014). *This changes everything: Capitalism vs. the climate*. Penguin Group.
- KnowTheChain. (2016). *KnowTheChain 2016 benchmark report: Forced labor and transparency in global supply chains*. https://knowthechain.org/benchmark/?ranking_year=2016
- KnowTheChain. (2021). *KnowTheChain 2021 benchmark report: Forced labor and transparency in global supply chains*. <https://knowthechain.org/wp-content/uploads/2021-KTC-AF-Benchmark-Report.pdf>
- Kocher, E. (2022). *Digital work platforms at the interface of labour law: Regulating market organisers*. Hart. <https://lcn.loc.gov/2021053498>
- Koshy, S., Cacho, L. M., Byrd, J. A., & Jefferson, B. J. (2022). *Colonial racial capitalism*. Duke University Press.
- Kponyo, J. J., Fosu, D. M., Owusu, F. E. B., Ali, M. I., & Ahiamadzor, M. M. (2024). Techno-neocolonialism: An emerging risk in the artificial intelligence revolution. *Trayectorias Humanas Trascontinentales*, (18). <https://doi.org/10.25965/trahs.6382>
- Kubendran, C. (2020). Gender discrimination in tea plantation in Munnar, Kerala. *International Journal of Management*, 11(11), 4383–4393. <https://ssrn.com/abstract=4420567>

Kuschnig, N., Crespo Cuaresma, J., & Krisztin, T. (2019). *Unveiling drivers of deforestation: Evidence from the Brazilian Amazon* (Ecological Economic Papers No. 32). WU Vienna University of Economics and Business. <https://epub.wu.ac.at/7335/>

L

Land, M. K., & Aronson, J. D. (2020). Human rights and technology. *Annual Review of Law and Social Science*, 16, 369–388. <https://doi.org/10.1146/annurev-lawsocsci-060220-081955>

Lane, L. (2023). Artificial intelligence and human rights. *Nordic Journal of Human Rights*, 40(3), 419–438. <https://doi.org/10.1080/18918131.2022.2137288>

Langer, A. (1992, October). L'intuizione dell'austerità. *Senza Confini*. https://www.alexanderlanger.org/fondazione/agenda/rubriche/schreibend-gelebt-sono-vissuto-scrivendo/7_lintuizione-dellausterita

Lawlor, M. (2024, September 16). *Attacks against human rights defenders and obliteration of civic space in Gaza unacceptable, says UN expert* [Press release]. Office of the United Nations High Commissioner for Human Rights (OHCHR). <https://www.ohchr.org/en/press-releases/2024/09/attacks-against-human-rights-defenders-and-obliteration-civic-space-gaza>

LeBaron, G. (2021). The role of supply chains in the global business of forced labour. *Journal of Supply Chain Management*, 57, 29–42. <https://doi.org/10.1111/jscm.12258>

LeBaron, G., & Lister, J. (2022). The hidden costs of global supply chain solutions. *Review of International Political Economy*, 29(3), 669–695. <https://doi.org/10.1080/09692290.2021.1956993>

Lehr, A. K. (2020, July). *Addressing forced labor in the Xinjiang Uyghur Autonomous Region: Toward a shared agenda*. Center for Strategic and International Studies. https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/200730_Lehr_XinjiangUyghurForcedLabor_brief_FINAL_v2.pdf

Lehr, A. K., & Bechrakis, E. M. (2019, October). *Connecting the dots in Xinjiang: Forced labor, forced assimilation, and Western supply chains*. Center for Strategic and International Studies. https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/Lehr_ConnectingDotsXinjiang_interior_v3_FULL_WEB.pdf

Leslie, D., Burr, C., Aitken, M., Cows, J., & Katell, M. (2021). Artificial intelligence, human rights, democracy, and the rule of law. <https://doi.org/10.48550/arXiv.2104.04147>

- Lockheed Martin. (2022a). *2022 human rights report*. https://www.lockheedmartin.com/content/dam/lockheed-martin/eo/documents/sustainability/Lockheed_Martin_Human_Rights_Report_2022.pdf
- Lockheed Martin. (2022b). *Political disclosures*. <https://www.lockheedmartin.com/en-us/who-we-are/leadership-governance/board-of-directors/political-disclosures.html>
- Lockheed Martin. (2023). *Corporate governance guidelines*. <https://www.lockheedmartin.com/content/dam/lockheed-martin/eo/documents/leadership/corporate-governance-guidelines.pdf>
- Lockheed Martin. (2024). *Executive leadership team: James D. Taiclet*. <https://www.lockheedmartin.com/en-us/who-we-are/leadership-governance/james-taiclet.html>
- Loewenstein, A. (2023). *The Palestine laboratory: How Israel exports the technology of occupation around the world*. Verso Books.
- Loodin, N. (2020). Aral Sea: An environmental disaster in twentieth century in Central Asia. *Modeling Earth Systems and Environment*, 6, 2495–2503. <https://doi.org/10.1007/s40808-020-00837-3>

M

- Macchi, C. (2022). A glass half full: Critical assessment of EU Regulation 2017/821 on conflict minerals. *Journal of Human Rights Practice*, 13(2), 270–290. <https://doi.org/10.1093/jhuman/huab027>
- Marksteiner, A., Béraud-Sudreau, L., Tian, N., Lopes da Silva, D., & Kuimova, A. (2021). *The SIPRI Top 100 arms-producing and military services companies, 2020*. Stockholm International Peace Research Institute. https://www.sipri.org/sites/default/files/2021-12/fs_2112_top_100_2020.pdf
- Marx, A., Otteburn, K., Lica, D., Van Calster, G., & Wouters, J. (2022). Introduction to Research Handbook on Global Governance, Business and Human Rights. In A. Marx et al. (Eds.), *Research Handbook on Global Governance, Business and Human Rights* (pp. 1–22). Edward Elgar.
- Masters, J., & Merrow, W. (2024, May 31). US aid to Israel in four charts. *Council on Foreign Relations*. <https://www.cfr.org/article/us-aid-israel-four-charts>
- Matamis, J. (2024, February 1). Turning a second blind eye. *Stimson Center*. <https://www.stimson.org/2024/turning-a-second-blind-eye/>
- Meijaard, E., Garcia-Ulloa, J., Sheil, D., Wich, S. A., Carlson, K. M., Juffe-Bignoli, D., & Brooks, T. M. (Eds.). (2018). *Oil palm and biodiversity: A*

- situation analysis by the IUCN Oil Palm Task Force*. IUCN. <https://doi.org/10.2305/IUCN.CH.2018.16.en>
- Michelin. (2022). *Royal Lestari Utama, Indonesia*. Natural Rubber by Michelin. <https://natural-rubber.michelin.com/natural-rubber-by-michelin/history/royal-lestari-utama>
- Michelin. (n.d.). *Our purpose and our values*. <https://www.michelin.com/en/group/purpose-values>
- Mighty Earth. (2020, October 8). *Complicit: An investigation into deforestation at Michelin's Royal Lestari Utama project in Sumatra, Indonesia*. https://www.mightyearth.org/wp-content/uploads/Mighty_Earth_MichelinReport8Oct2020FINAL.pdf
- Miralles, N., Diaz, C., & Daza, F. (2023). *The complicity of the Spanish financial sector in the occupation of Palestine: The case of solar energy and greenwashing*. Observatory of Human Rights and Business (ODHE).
- Moore, J. W. (2016). *The rise of cheap nature*. In J. W. Moore (Ed.), *Anthropocene or Capitalocene? Nature, history, and the crisis of capitalism* (pp. 78–115). PM Press.
- Moore, J. W. (2027). Wasting the world: Class, capital & cheap toxification in the capitalist world-ecology. In M. Armiero, F. Gabbriellini, C. M. Lanzidei, & F. Vettori (Eds.), *Resisting the Wasteocene: Fighting the global dump*. Bloomsbury Academic. (Advance version retrieved from ResearchGate, August 2025). https://www.researchgate.net/publication/394425386_Wasting_the_World_Class_Capital_Cheap_Toxification_in_the_Capitalist_World-Ecology.
- Morser, A., & Michuki, G. (2010). *A bitter cup: The exploitation of tea workers in India and Kenya supplying British supermarkets*. War on Want / International Union of Food Workers. <https://waronwant.org/resources/bitter-cup>
- Muldoon, J., & Wu, B. A. (2023). Artificial intelligence in the colonial matrix of power. *Philosophy & Technology*, 36(4), 1–24. <https://doi.org/10.1007/s13347-023-00687-8>
- Murphy, L. (2023). *Forced labor in the Uyghur region: The evidence*. Sheffield Hallam University, Helena Kennedy Centre for International Justice. <https://shura.shu.ac.uk/35123/>
- Murphy, L., & Elimä, N. (2021). *In broad daylight: Uyghur forced labour and global solar supply chains*. Sheffield Hallam University, Helena Kennedy Centre for International Justice. <https://shura.shu.ac.uk/29640/>
- Murray, D., Fussey, P., Hove, K., Wakabi, W., Kimumwe, P., Saki, O., & Stevens,

A. (2024). The chilling effects of surveillance and human rights: Insights from qualitative research in Uganda and Zimbabwe. *Journal of Human Rights Practice*, 16, 397–412. <https://doi.org/10.1093/jhuman/huad020>

N

NASA Earth Observatory. (2003). *Aral Sea*. <https://science.nasa.gov/earth/earth-observatory/aral-sea-3730>

NASA Earth Observatory. (2008). *World of change: Shrinking Aral Sea*. <https://science.nasa.gov/earth/earth-observatory/world-of-change/aral-sea>

National Geographic Society. (2024). *Case study: Friends of Lake Turkana work to preserve the lake's ecology by halting construction of an upstream dam*. <https://education.nationalgeographic.org/resource/case-study-friends-lake-turkana>

Niculescu, B. (2002). *Manifesto of transdisciplinarity*. State University of New York Press.

Nkwanyana, K. (2021, May 5). China's AI deployment in Africa poses risks to security and sovereignty. *The Strategist*. <https://www.aspistrategist.org.au/chinas-ai-deployment-in-africa-poses-risks-to-security-and-sovereignty/>

Noleppa, S., & Carlsburg, M. (2016). *Palm oil: Searching for alternatives*. WWF Deutschland. <https://web.archive.org/web/20230510164548/https://www.wwf.de/fileadmin/fm-wwf/Publikationen-PDF/Landwirtschaft/WWF-Report-Palm-Oil-Searching-for-Alternatives.pdf>

O

OECD. (2011). *OECD guidelines for multinational enterprises, 2011 Edition*. OECD Publishing. <https://doi.org/10.1787/9789264115415-en>

OECD. (2016a). *Economic and social benefits of Internet openness* (OECD Digital Economy Papers No. 257). OECD Publishing. <https://doi.org/10.1787/5jlwqf2r97g5-en>

OECD. (2016b). *OECD due diligence guidance for responsible supply chains of minerals from conflict-affected and high-risk areas*. OECD Publishing. https://www.oecd.org/en/publications/oecd-due-diligence-guidance-for-responsible-supply-chains-of-minerals-from-conflict-affected-and-high-risk-areas_9789264252479-en.html

OECD Watch. (2016). *ECDHR et al. vs. Boeing & Lockheed Martin: Lockheed Martin's products in Yemen* (US NCP). <https://www.oecdwatch.org/complaint/ecdhr-et-al-vs-boeing-lockheed-martin/>

Oh, C. H., Shin, J., & Ho, S. S. H. (2023). Conflicts between mining companies

- and communities: Institutional environments and conflict resolution approaches. *Business Ethics, the Environment & Responsibility*, 32, 638–656. <https://doi.org/10.1111/beer.12522>
- Organisation for Economic Co-operation and Development. (2018). *OECD due diligence guidance for responsible business conduct*. <https://mneguidelines.oecd.org/OECD-Due-Diligence-Guidance-for-Responsible-Business-Conduct.pdf>
- Organisation for Economic Co-operation and Development. (2023). *OECD guidelines for multinational enterprises on responsible business conduct*. OECD Publishing. <https://doi.org/10.1787/81f92357-en>
- OpenSecrets.(2024a). *Client profile:LockheedMartin*.<https://www.opensecrets.org/federal-lobbying/clients/summary?cycle=2022&id=D000000104>
- Open Secrets. (2024b). *Lockheed Martin PAC contributions to federal candidates*. <https://www.opensecrets.org/political-action-committees-pacs/lockheed-martin/C00303024/candidate-recipients/2024>
- Orellana, M. A. (2022). *End-of-visit statement by the United Nations Special Rapporteur on toxics and human rights*. Office of the High Commissioner for Human Rights. <https://www.ohchr.org/en/statements/2022/01/end-visit-statement-united-nations-special-rapporteur-toxics-and-human-rights>
- Orwell, G. (1949). *Nineteen eighty-four*. Secker & Warburg.
- Our World in Data. (2021). *Global food explorer: Cotton production by country (2021)*. <https://ourworldindata.org/explorers/global-food?time=2021&country=USA~DEU~FRA~GBR~BRA~ZAF~CHN&Food=Cotton&Metric=Production&Per+Capita=false>
- Owens, N. (2023, December 11). Even with moderate budget growth, Lockheed is a well-positioned defence contractor. *Morningstar*. <https://www.morningstar.com/company-reports/1198472-even-with-moderate-budget-growth-lockheed-is-a-well-positioned-defence-contractor>
- Oxfam Ireland. (2025). *Trading with illegal settlements: How foreign states and corporations enable Israel's illegal settlement enterprise*. <https://oi-files-d8-prod.s3.eu-west-2.amazonaws.com/s3fs-public/2025-09/Trading%20with%20Illegal%20Settlements.%20September%202025.pdf>

P

- Palestine Youth Movement. (2025, January). *Cargo complicity: Maersk's role in facilitating exports from illegal Israeli settlements to the US*. <https://www.maskoffmaersk.com/s/PYM-Maersk-SettlementExports-Report-01222025.pdf>
- Pamuk, H., & Stone, M. (2024). Exclusive: US has sent Israel thousands

- of 2,000-pound bombs since Oct. 7. *Reuters*. <https://www.reuters.com/world/us-has-sent-israel-thousands-2000-pound-bombs-since-oct-7-2024-06-28/>
- Parkinson, J., Bariyo, N., & Chin, J. (2019, August 15). Huawei technicians helped African governments spy on political opponents. *The Wall Street Journal*. <https://www.wsj.com/articles/huawei-technicians-helped-african-governments-spy-on-political-opponents-11565793017>
- Parrique, T., Barth, J., Briens, F., Kerschner, C., Kraus-Polk, A., Kuokkanen, A., & Spangenberg, J. H. (2019). *Decoupling debunked: Evidence and arguments against green growth as a sole strategy for sustainability*. European Environmental Bureau.
- PeaceNow. (2026). *Settlements watch data* [as of 28 May 2026]. <https://peacenow.org.il/en/settlements-watch/settlements-data/population>
- Pearce, F. (2015, August 17). Global extinction rates: Why do estimates vary so wildly? *Yale Environment* 360. https://e360.yale.edu/features/global_extinction_rates_why_do_estimates_vary_so_wildly
- Pendrill, F., Persson, U. M., Godar, J., & Kastner, T. (2019a). Deforestation displaced: Trade in forest-risk commodities and the prospects for a global forest transition. *Environmental Research Letters*, 14(5), Article 055003. <https://doi.org/10.1088/1748-9326/ab0d41>
- Pendrill, F., Persson, U. M., Godar, J., Kastner, T., Moran, D., Schmidt, S., & Wood, R. (2019b). Agricultural and forestry trade drives large share of tropical deforestation emissions. *Global Environmental Change*, 56, 1–10. <https://doi.org/10.1016/j.gloenvcha.2019.03.002>
- People's Embargo for Palestine, Palestinian Youth Movement, Giovani Palestinesi d'Italia, & War on Want. (2026). *Made in Italy, delivered to Israel: Italian military and energy transfers fueling genocide*. <https://static1.squarespace.com/static/68f39f06eb2e2f1e3c961bee/t/69fd81a5bfa8d255e8b22f1/1778221477491/Made+in+Italy%2C+Delivered+to+Israel.pdf>
- Persson, L., Carney Almroth, B. M., Collins, C. D., Cornell, S. E., de Wit, C. A., Diamond, M. L., Fantke, P., Hassellöv, M., MacLeod, M., Ryberg, M. W., Jørgensen, P. S., Villarrubia-Gómez, P., Wang, Z., & Hauschild, M. Z. (2022). Outside the safe operating space of the planetary boundary for novel entities. *Environmental Science & Technology*, 56(3), 1510–1521. <https://doi.org/10.1021/acs.est.1c04158>
- Peterson Foundation. (2024). *Budget basics: National defence*. <https://www.pgpf.org/budget-basics/budget-explainer-national-defence>

- Planet Tracker. (2022). *Lifting the rug: Prada's blockchain initiative, transparency and sustainability in luxury goods*. <https://planet-tracker.org/wp-content/uploads/2022/06/Lifting-the-Rug.pdf>
- Politakis, G. (2023). The recognition of occupational safety and health as a fundamental principle and right at work. *International and Comparative Law Quarterly*, 72(1), 213–238. doi:10.1017/S0020589322000446
- Potapov, P., Hansen, M. C., Laestadius, L., Turubanova, S., Yaroshenko, A., Thies, C., Smith, W., Zhuravleva, I., Komarova, A., Minnemeyer, S., & Esipova, E. (2017). The last frontiers of wilderness: Tracking loss of intact forest landscapes from 2000 to 2013. *Science Advances*, 3(1), Article e1600821. <https://doi.org/10.1126/sciadv.1600821>
- Prada Group. (2023a). *Human rights policy*. <https://www.pradagroup.com/en/sustainability/human-rights.html>
- Prada Group. (2023b). *Statement on modern slavery 2023*. https://www.pradagroup.com/content/dam/pradagroup/documents/Responsabilita_sociale/2023/Modern-Slavery/e-Prada_Group_Modern_Slavery_Statement_2023.pdf
- Prada Group. (2023c). *Sustainability report 2023*. https://www.pradagroup.com/content/dam/pradagroup/documents/Responsabilita_sociale/2024/Report-CSR-2023/e-Prada_Group_2023_Sustainability_Report.pdf
- Privacy International. (2020, June 25). *Huawei infiltration in Uganda*. <https://privacyinternational.org/case-study/3969/huawei-infiltration-uganda>
- Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. Simon & Schuster.

R

- Racalbuto, A. I. (2024). *Social and environmental impacts of the global cotton industry: An analysis of organic and Fairtrade standards* [Unpublished master's thesis]. University of Padova. <https://hdl.handle.net/20.500.12608/65924>
- Rajbangshi, P., & Nambiar, D. (2020). "Who will stand up for us?" The social determinants of health of women tea plantation workers in India. *International Journal for Equity in Health*, 19, Article 29. <https://doi.org/10.1186/s12939-020-1144-5>
- Randers, J. (2012). *2052: A global forecast for the next forty years*. Chelsea Green Publishing.
- Rani, U., & Furrer, M. (2021). Digital labour platforms and new forms of

- flexible work in developing countries: Algorithmic management of work and workers. *Competition and Change*, 25(2), 212–236. <https://doi.org/10.1177/1024529420905187>
- Rao, M., & Bernaz, N. (2020). Corporate responsibility for human rights in Assam tea plantations: A business and human rights approach. *Sustainability*, 12(18), Article 7409. <https://doi.org/10.3390/su12187409>
- Raworth, K. (2017). *Doughnut economics: Seven ways to think like a 21st-century economist*. Chelsea Green Publishing.
- Regilme, S. S. F. (2024). Artificial intelligence colonialism. *SAIS Review of International Affairs*, 44(2), 75-92. <https://dx.doi.org/10.1353/sais.2024.a950958>
- Regulation (EU) 2017/821 of the European Parliament and of the Council of 17 May 2017 laying down supply chain due diligence obligations for Union importers of tin, tantalum and tungsten, their ores, and gold originating from conflict-affected and high-risk areas. (2017). *Official Journal of the European Union*, OJ L 130/1. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32017R0821>
- Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence (Artificial Intelligence Act). (2024). *Official Journal of the European Union*. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32024R1689>
- Richardson, K., Steffen, W., Lucht, W., Bendtsen, J., Cornell, S. E., Donges, J. F., Drüke, M., Fetzer, I., Galaasen, P. M., Gerten, D., Hoff, H., Huiskamp, V. N., Ituarte-Lima, C., Rockström, J., Sørensen, L. L., Virkki, V., Wang-Erlandsson, L., & Zimmer, C. (2023). Earth beyond six of nine planetary boundaries. *Science Advances*, 9(37), eadh2458. <https://doi.org/10.1126/sciadv.adh2458>
- Ritchie, H. (2021a). Drivers of deforestation. *Our World in Data*. <https://ourworldindata.org/drivers-of-deforestation>
- Ritchie, H. (2021b). Palm oil. *Our World in Data*. <https://ourworldindata.org/palm-oil>
- Roblin, S. (2021, May 26). Israel's bombardment of Gaza: Methods, weapons and impact. *Forbes*. <https://www.forbes.com/sites/sebastienroblin/2021/05/26/israels-bombardment-of-gaza-methods-weapons-and-impact/>
- Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin, F. S., Lambin, E. F., Lenton, T. M., Scheffer, M., Folke, C., Schellnhuber, H. J., Nykvist, B., de

- Wit, C. A., Hughes, T., van der Leeuw, S., Rodhe, H., Sörlin, S., Snyder, P. K., Costanza, R., Svedin, U., ... Foley, J. A. (2009). A safe operating space for humanity. *Nature*, 461, 472–475. <https://doi.org/10.1038/461472a>
- Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin, F. S., III, Lambin, E., & Foley, J. (2009). Planetary boundaries: Exploring the safe operating space for humanity. *Ecology and Society*, 14(2), Article 32.
- Roggensack, M., Kripke, G., Borum, M., & Ivanhoe, H. (2024). *Rights and responsibilities in the tech industry*. Oxfam International. <https://oi-files-d8-prod.s3.eu-west-2.amazonaws.com/s3fs-public/2025-11/dp-rights-and-responsibilities-091024-en.pdf>
- Roundtable on Sustainable Palm Oil. (2023). *Our impact: Certification figures*. <https://rspo.org/our-impact/#certification-figures>
- Royal Academy of Engineering. (2017). *Sustainability of liquid biofuels*. <https://raeng.org.uk/media/pk1k5mie/raeng-biofuels-report-1-1.pdf>
- Ruggie, J. (2008). *Protect, Respect and Remedy: A Framework for Business and Human Rights — Report of the Special Representative of the Secretary-General on the Issue of Human Rights and Transnational Corporations and Other Business Enterprises* (Report A/HRC/8/5). United Nations Human Rights Council. <https://digitallibrary.un.org/record/627465>
- Ruggie, J. (2011). *Guiding Principles on Business and Human Rights: Implementing the United Nations “Protect, Respect and Remedy” Framework*. United Nations. https://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf
- Ruggie, J. (2017). The social construction of the UN Guiding Principles on Business and Human Rights (Corporate Responsibility Initiative Working Paper No. 67). Harvard Kennedy School. https://www.hks.harvard.edu/sites/default/files/centers/mrcbg/programs/cri/files/workingpaper_67_gn.pdf
- Ruggie, J. G. (2013). *Just business: Multinational corporations and human rights*. W. W. Norton & Company.
- Ruggie, J., Rees, C., & Davis, R. (2015). *Regulating multinational corporations: The role of the OECD National Contact Points* (Harvard Kennedy School Working Paper No. 66). Harvard Kennedy School. <https://www.hks.harvard.edu/sites/default/files/centers/mrcbg/programs/cri/files/workingpaper.66.oecd.pdf>
- Rutledge, B. (2023, July 25). Why the revised ‘OECD Guidelines on

Responsible Business Conduct' matter. *Ethical Trading Initiative*. <https://www.ethicaltrade.org/resources/blog/why-revised-oecd-guidelines-responsible-business-conduct-matter>

S

7amleh – The Arab Center for the Advancement of Social Media. (2023). *Israel's surveillance industry and human rights: Impact on Palestinians and worldwide*. 7amleh. <https://7amleh.org/storage/Israel's%20Surveillance%20Industry%20english4.pdf>

Sa'di, A. (2016). *Thorough surveillance: The genesis of Israeli policies of population management, surveillance and political control towards the Palestinian minority*. Manchester University Press. <https://manchesteruniversitypress.co.uk/9780719090585>

Saha, D. (2019). *Decent work for tea plantation workers in Assam: Constraints, challenges and prospects*. Tata Institute of Social Sciences, Guwahati Campus. https://tiss.ac.in/uploads/files/TISS_Study_2019_Decent_Work_for_Tea_Plantation_Workers_in_Assam_Web.pdf

Saikia, J. P. (2017). *Stories behind a hot cup of Assam tea: Listening to the voices of women labourers in the tea gardens*. Centre for Women's Studies, Dibrugarh University. https://humantraffickingsearch.org/wp-content/uploads/2022/12/stories-behind-a-hot-cup-of-Assam-Tea1_n.pdf

Sakschewski, B., Caesar, L., Andersen, L., Bechthold, M., Bergfeld, L., Beusen, A., Billing, M., Bodirsky, B. L., Botsyun, S., Dennis, D., Donges, J. F., Dou, X., Eriksson, A., Fetzer, I., Gerten, D., Häyhä, T., Hebden, S., Heckmann, T., Heilemann, A., Huiskamp, W. N., Jahnke, A., Kaiser, J., Kitzmann, N., Krönke, J., Kühnel, D., Laureanti, N. C., Li, C., Liu, Z., Loriani, S., Ludescher, J., Mathesius, S., Norström, A., Otto, F., Paolucci, A., Pokhotelov, D., Rafiezadeh Shahi, K., Raju, E., Rostami, M., Schaphoff, S., Schmidt, C., Steinert, N. J., Stenzel, F., Virkki, V., Wendt-Potthoff, K., Wunderling, N., & Rockström, J. (2025). *Planetary Health Check 2025: A scientific assessment of the state of the planet*. Potsdam Institute for Climate Impact Research. <https://doi.org/10.48485/pik.2025.017>

Salini. (2012, May). *Gibe III hydroelectric project: Corporate social responsibility*. <https://media.business-humanrights.org/media/documents/files/media/documents/gibe-iii-response-business-rights.pdf>

Saussay, A., & Zugravu-Soilita, N. (2023). International production chains and the pollution offshoring hypothesis: An empirical investigation. *Resource and Energy Economics*, 73. <https://doi.org/10.1016/j.reseneeco.2023.101357>

Segantin, S. (2026). Dalle miniere di coltan del Congo ai palazzi del potere

- europeo: intervista a Francois Kamate. *Il Bo Live, University of Padova*.
<https://ilbolive.unipd.it/it/news/societa/dalle-miniere-coltan-congo-palazzi-potere-europeo>
- Seymour, F., & Harris, N. L. (2019). Reducing tropical deforestation. *Science*, 365(6455), 756–757. <https://doi.org/10.1126/science.aax8546>
- Shapira, R., & Zingales, L. (2017). *Is pollution value-maximizing? The DuPont case* (NBER Working Paper No. 23866). National Bureau of Economic Research. <http://www.nber.org/papers/w23866>
- Sharman, T. (2018). *The estate they're in: How the tea industry traps women in poverty in Assam*. Traidcraft Exchange. <https://traidcraftservices.in/wp-content/uploads/2020/09/TheEstateTheyreIn.pdf>
- Sheffield Hallam University, Helena Kennedy Centre for International Justice. (2021). *Laundering cotton*. <https://shura.shu.ac.uk/29641/>
- Siegmann, K. A. (2023). Harvesting consent: South Asian tea plantation workers' experience of Fairtrade certification. *The Journal of Peasant Studies*, 50(5), 2050–2074. <https://doi.org/10.1080/03066150.2022.2060080>
- Silberman, S., Irani, L., & Ross, J. (2010). Ethics and tactics of professional crowdwork. *XRDS: Crossroads*, 10(4), 39–43. <https://doi.org/10.1145/1869086.1869100>
- Soliman, A., & Baldo, S. (2025, March 14). Gold and the war in Sudan: How regional solutions can support an end to conflict. *Chatham House*. <https://www.chathamhouse.org/2025/03/gold-and-war-sudan>
- Soterroni, A. C., Ramos, F. M., Mosnier, A., Fargione, J., Andrade, P. R., Baumgarten, L., Pirker, J., Obersteiner, M., Kraxner, F., Câmara, G., Havlik, P., & Carvalho, A. X. (2019). Expanding the soy moratorium to Brazil's Cerrado. *Science Advances*, 5(7), Article eaav7336. <https://doi.org/10.1126/sciadv.aav7336>
- Source Intelligence. (2024, January 23). EU Conflict Minerals Regulation vs. US Dodd-Frank Act Section 1502. <https://blog.sourceintelligence.com/blog/eu-conflict-minerals-vs-us-dodd-frank-act-section-1502>
- Special Rapporteur on Environmental Defenders under the Aarhus Convention [Forst, M.]. (2025a). *Report on complaints received and activities undertaken by the Special Rapporteur on environmental defenders* (ECE/MP.PP/2025/18). United Nations Economic Commission for Europe. https://unece.org/sites/default/files/2025-11/ECE.MP_PP_2025.18.E.pdf
- Special Rapporteur on Environmental Defenders under the Aarhus Convention [Forst, M.]. (2025b). *Report on key trends and threats regarding environmental defenders identified by the Special Rapporteur on*

- environmental defenders* (ECE/MP.PP/2025/20). United Nations Economic Commission for Europe. https://unece.org/sites/default/files/2025-11/ECE.MP_PP_2025.20.E.pdf
- Special Rapporteur on Environmental Defenders under the Aarhus Convention [Forst, M.]. (2025c). *Report on regional consultations with environmental defenders by the Special Rapporteur on environmental defenders* (ECE/MP.PP/2025/19). United Nations Economic Commission for Europe. https://unece.org/sites/default/files/2025-11/ECE.MP_PP_2025.19.E.pdf
- Sreemala, S. (2025, May 28). Reading technocolonialism: The infrastructures of caring from a distance. *Bot Populi*. <https://botpopuli.net/reading-technocolonialism-infrastructures-of-caring-from-a-distance/>
- Statista. (2022). *Value of the global tea market from 2018 to 2028*. <https://www.statista.com/statistics/326384/global-tea-beverage-market-size/>
- Steffen, W., Richardson, K., Rockström, J., Cornell, S. E., Fetzer, I., Bennett, E. M., Biggs, R., Carpenter, S. R., de Vries, W., de Wit, C. A., Folke, C., Gerten, D., Heinke, J., Mace, G. M., Persson, L. M., Ramanathan, V., Reyers, B., & Sörlin, S. (2015). Planetary boundaries: Guiding human development on a changing planet. *Science*, 347(6223), 1259855. <https://doi.org/10.1126/science.1259855>
- Stockholm International Peace Research Institute. (n.d.). List records on aircraft transfers from the United States to Israel for 2004–2023 [SIPRI arms transfers database]. <https://armstransfers.sipri.org/ArmsTransfer/TransferData/transferResults>
- Stockholm International Peace Research Institute. (2024). *SIPRI yearbook 2024*. Oxford University Press. <https://www.sipri.org/yearbook/2024/05>
- Stone, M. (2020, January 24). Former top US general Dunford joining Lockheed Martin's board. *Reuters*. <https://www.reuters.com/article/business/former-top-us-general-dunford-joining-lockheed-martins-board-idUSKBN1ZN2L7/>
- Stop Ecocide Foundation. (2021). *Legal definition of ecocide drafted by independent expert panel*. <https://www.stopecocide.earth/legal-definition>
- ## T
- Tapiola, K. (2018). *The teeth of the ILO: The impact of the 1998 ILO Declaration on Fundamental Principles and Rights at Work*. International Labour Office.
- Tea Board India. (2023). *69th annual report for the year 2022–23*. Tea Board India. <https://www.teaboard.gov.in/TEABOARDPAGE/ODA=>

- The Advocates for Human Rights, Foundation for Human Rights Initiative, & World Coalition Against the Death Penalty. (2023, May 29). *Uganda's compliance with the International Covenant on Civil and Political Rights: Suggested list of issues relating to the death penalty* (Submission to the UN Human Rights Committee, 138th Session, 26 June–28 July 2023). <https://www.theadvocatesforhumanrights.org/Res/AHR%20WCADP%20FHRI%20Uganda%20CCPR%20Final.pdf>
- The East African. (2022, December 3). Across East Africa, Big Brother is watching your every move. *Daily Monitor*. <https://www.monitor.co.ug/uganda/news/national/across-east-africa-big-brother-is-watching-your-every-move-4041896>
- The Guardian. (2020, July 23). 'Virtually entire' fashion industry complicit in Uighur forced labour, say rights groups. <https://www.theguardian.com/global-development/2020/jul/23/virtually-entire-fashion-industry-complicit-in-uighur-forced-labour-say-rights-groups-china>
- The International Roundtable for Sustainable Tea. (2022). *Human rights in the tea sector — the big picture, Part 1: Literature review*. THIRST. https://media.business-humanrights.org/media/documents/THIRST_HRIA_Lit_Review_Final.pdf
- The International Roundtable for Sustainable Tea. (2023). *Human rights in the tea sector — Part 2: Analysis of root causes*. THIRST. <https://thirst-tea.org/our-work/human-rights-in-tea/human-rights-research-findings/>
- The International Roundtable for Sustainable Tea. (2024). *Human rights in the tea sector — Part 3: Alternative approaches*. THIRST. <https://thirst-tea.org/our-work/human-rights-in-tea/phase-3-action/>
- Tian, N., Lopes da Silva, D., Liang, X., Scarazzato, L., Guedes Gonçalves Costa, L. M., Heinemann, N., & Béraud-Sudreau, L. (2024). Military expenditure and developments in arms production. In *SIPRI yearbook 2024: Armaments, disarmament and international security* (Chapter 5). Oxford University Press. <https://www.sipri.org/yearbook/2024/05>
- Toracca, E. (2024). *Harvesting inequality: Women's rights violations in the Indian tea industry* [Unpublished master's thesis]. University of Padova. <https://hdl.handle.net/20.500.12608/75041>
- Toxtli, C., Suri, S., & Savage, S. (2021). Quantifying the invisible labor in crowd work. *CSCW2 Proceedings ACM on Human-Computer Interactions*, 5, Article 319, 1–24. <https://doi.org/10.1145/3476060>
- Transport & Environment. (2019). *Almost two-thirds of palm oil consumed in the EU burned as energy: New data*. <https://www.transportenvironment>

org/discover/almost-two-thirds-palm-oil-consumed-eu-burned-energy-new-data/

Transparency International. (2005). *Global corruption report 2005*. Cambridge University Press. <https://www.transparency.org/en/publications/global-corruption-report-2005>

Tropical Landscape Finance Facility. (n.d.). *TLFF official website*. <https://www.tlffindonesia.org/>

Tyukavina, A., Hansen, M. C., Potapov, P. V., Stehman, S. V., Smith-Rodriguez, K., Okpa, C., & Aguilar, R. (2017). Types and rates of forest disturbance in Brazilian Legal Amazon, 2000–2013. *Science Advances*, 3(4), Article e1601047. <https://doi.org/10.1126/sciadv.1601047>

U

Uluyol, Y., Çelik, B., Kaya, A., & Öztürk, M. (2024). *Tailoring responsibility: Tracing apparel supply chains from the Uyghur region to Europe* (updated ed.). Sheffield Hallam University, Helena Kennedy Centre for International Justice & Uyghur Rights Monitor. <https://enduyghurforcedlabour.org/wp-content/uploads/sites/44/EU-Tailoring-Responsibility-February-24.pdf>

UNESCO World Heritage Centre. (2018, June 28). *Lake Turkana endangered by Gibe III dam* [Press release]. <https://whc.unesco.org/en/news/1842>

United Nations. (1989). *Convention on the rights of the child*. <https://www.ohchr.org/en/instruments-mechanisms/instruments/convention-rights-child>

United Nations. (1998). *Declaration on the right and responsibility of individuals, groups and organs of society to promote and protect universally recognised human rights and fundamental freedoms* (A/RES/53/144). United Nations General Assembly. <https://www.ohchr.org/en/instruments-mechanisms/instruments/declaration-right-and-responsibility-individuals-groups-and>

United Nations. (2011). *Guiding Principles on Business and Human Rights: Implementing the United Nations “Protect, Respect and Remedy” Framework*. Office of the United Nations High Commissioner for Human Rights. https://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf

United Nations. (2023). *Arbitrary deprivation of liberty in the occupied Palestinian territory: the Palestinian experience behind and beyond bars* (A/HRC/53/59). <https://docs.un.org/en/A/HRC/53/59>

- United Nations. (2024). *Resolution ES-10/24 adopted by the General Assembly on 18 September 2024*. <https://docs.un.org/en/A/RES/ES-10/24>
- United Nations. (2025a). *US sanctions on Special Rapporteur Francesca Albanese threaten human rights system: UN experts*. <https://www.un.org/unispal/document/un-experts-statement-08aug25/>
- United Nations. (2025b). “More than a human can bear”: Israel’s systematic use of sexual, reproductive and other forms of gender-based violence since 7 October 2023. Independent International Commission of Inquiry on the Occupied Palestinian Territory, including East Jerusalem, and Israel. <https://www.ohchr.org/sites/default/files/documents/hrbodies/hrcouncil/sessions-regular/session58/a-hrc-58-crp-6.pdf>
- United Nations Committee on the Elimination of Discrimination against Women. (2004). *General Recommendation No. 25: Article 4(1): Temporary special measures* (HRI/GEN/1/Rev.7 at 282). United Nations. <https://digitallibrary.un.org/record/508973>
- United Nations Committee on the Elimination of Discrimination against Women. (2010). *General Recommendation No. 28: Core obligations of State parties under Article 2* (CEDAW/C/2010/47/GC.2). United Nations. <https://digitallibrary.un.org/record/711350>
- United Nations Committee on the Rights of the Child. (2013). *General Comment No. 16 on state obligations regarding the impact of the business sector on children’s rights* (CRC/C/GC/16). United Nations. <https://digitallibrary.un.org/record/778525>
- United Nations Conference on Trade and Development. (2024, July). *Developments in the economy of the occupied Palestinian territory*. https://unctad.org/system/files/official-document/gdsapp2026d1_en.pdf
- United Nations Conference on Trade and Development. (2026). *The cumulative economic cost of occupation for the Palestinian people (2000–2024) and the long road to recovery*. <https://unctad.org/publication/cumulative-economic-cost-occupation-palestinian-people-2000-2024-and-long-road-recovery>
- United Nations Economic Commission for Europe. (1998). *Convention on access to information, public participation in decision-making and access to justice in environmental matters (Aarhus Convention)*. UNECE. <https://unece.org/environment-policy/public-participation/aarhus-convention/text>
- United Nations Economic and Social Council. (1972). *Resolution 1721 (LIII)*. <https://digitallibrary.un.org/record/214903>
- United Nations Educational, Scientific and Cultural Organization. (1945).

- Constitution of the United Nations Educational, Scientific and Cultural Organization*. <https://www.unesco.org/en/legal-affairs/constitution>
- United Nations General Assembly. (1948). *Universal Declaration of Human Rights* (UDHR). United Nations.
- United Nations General Assembly. (1975). *Resolution 3379 (XXX): Elimination of all forms of racial discrimination* (A/RES/3379). [https://undocs.org/A/RES/3379\(XXX\)](https://undocs.org/A/RES/3379(XXX))
- United Nations General Assembly. (1991). *Resolution 46/86: Elimination of all forms of racial discrimination* (A/RES/46/86). <https://undocs.org/A/RES/46/86>
- United Nations High Commissioner for Human Rights. (2011). Statement to the Employer's Group at the International Labour Conference. OHCHR. https://www.ohchr.org/sites/default/files/Documents/Issues/Business/ILC_STATEMENT_7June2011.pdf
- United Nations High Commissioner for Human Rights. (2012). *The corporate responsibility to respect human rights: An interpretive guide*. OHCHR. https://www.ohchr.org/sites/default/files/Documents/Publications/HR.PUB.12.2_En.pdf
- United Nations High Commissioner for Human Rights. (2018). *Improving accountability and access to remedy for victims of business-related human rights abuse: Companion note I to the accountability and remedy report*. OHCHR. <https://www.ohchr.org/sites/default/files/Documents/Issues/Business/Session18/CompanionNote2DiligenceReport.pdf>
- United Nations High Commissioner for Human Rights. (2021). *Rights-respecting investment in technology companies: A B-Tech investor briefing*. <https://www.ohchr.org/sites/default/files/Documents/Issues/Business/B-Tech/B-Tech-Briefing-Investment.pdf>
- United Nations Office of the High Commissioner for Human Rights. (2011). *Guiding principles on business and human rights: Implementing the United Nations "Protect, Respect and Remedy" framework* (HR/PUB/11/4). United Nations. https://www.ohchr.org/sites/default/files/documents/publications/guidingprinciplesbusinessshr_en.pdf
- United Nations Human Rights Committee. (2004). *General comment No. 31 (80): The nature of the general legal obligations imposed on States Parties to the Covenant* (CCPR/C/21/Rev.1/Add.13). <https://undocs.org/CCPR/C/21/REV.1/Add.13>
- United Nations Human Rights Committee. (2023, January 31). *Replies of Uganda to the list of issues in relation to its second periodic report* (138th

- Session, 26 June–28 July 2023). United Nations. https://digitallibrary.un.org/record/4006066/files/CCPR_C_UGA_RQ_2-EN.pdf
- United Nations Human Rights Council. (2024). *Resolution on Israeli settlements in OPT and Occupied Syrian Golan* (A/HRC/RES/55/32). <https://www.ohchr.org/en/hr-bodies/hrc/regular-sessions/session55/res-dec-stat>
- United Nations Office of the High Commissioner for Human Rights. (2009). *Human rights in Palestine and other occupied Arab territories: Report of the United Nations Fact-Finding Mission on the Gaza Conflict*. <https://www2.ohchr.org/english/bodies/hrcouncil/docs/12session/A-HRC-12-48.pdf>
- United Nations Office of the High Commissioner for Human Rights. (2020). *Database of business enterprises pursuant to Human Rights Council Resolutions 31/36 and 53/25*. <https://www.ohchr.org/en/business/bhr-database>
- United Nations Office of the High Commissioner for Human Rights. (2024, June). *States and companies must end arms transfers to Israel immediately or risk responsibility for human rights violations* [Press release]. <https://www.ohchr.org/en/press-releases/2024/06/states-and-companies-must-end-arms-transfers-israel-immediately-or-risk>
- United Nations Office of the High Commissioner for Human Rights. (2025). *Communication to Italy* (AL ITA 9/2025). <https://spcommreports.ohchr.org/TMResultsBase/DownloadPublicCommunicationFile?gId=30590>
- United Nations Security Council. (2016, December 23). *Resolution 2334* (S/RES/2334). <https://digitallibrary.un.org/record/853446?v=pdf>
- U.S. Congress. (2021). *Uyghur Forced Labor Prevention Act*, Pub. L. No. 117-78. <https://www.cbp.gov/trade/forced-labor/UFLPA>
- U.S. Department of Defense. (2022, September 6). Contracts for September 6, 2022. <https://www.defence.gov/News/Contracts/Contract/Article/3150041/>
- U.S. Department of Defense. (2023, December 28). Contracts for December 28, 2023. <https://www.defence.gov/News/Contracts/Contract/Article/3627836/>
- U.S. Department of Homeland Security. (n.d.). *UFLPA entity list*. <https://www.dhs.gov/uflpa-entity-list>
- U.S. Energy Information Administration. (2025). *International energy statistics*. <https://www.eia.gov/international/data/world>
- U.S. Securities and Exchange Commission. (2012). *Conflict minerals: Final rule*

(Release No. 34-67716). <https://www.sec.gov/rules/final/2012/34-67716.pdf>

USAFacts. (2024, April 11). How much does the US spend on the military? <https://usafacts.org/articles/how-much-does-the-us-spend-on-the-military/>

USAspending.gov. (2024). *Lockheed Martin recipient profile*. <https://www.usaspending.gov/recipient/b97d19b0-833c-8d8f-3a2c-157d04ea55ef-P/latest>

V

Valentino, S., Barbiroglio, E., & Accardo, G. P. (2022). Greenwashing made in Europe by Michelin and BNP Paribas in Indonesia. *Voxeurop*. <https://voxeurop.eu/en/greenwashing-made-europe-michelin-bnp-paribas-indonesie/>

van Doorn, N. (2017). Platform labor: On the gendered and racialized exploitation of low-income service work in the “on-demand” economy. *Information, Communication & Society*, 20(6), 898–914. <https://doi.org/10.1080/1369118X.2017.1294194>

Vera-Phillips, K. (2025). I would rather die: postcolonial analysis of rebellion speeches in Star Wars: Andor. *Journal of Popular Culture*. <https://doi.org/10.1111/jpcu.70003>

Vijay, V., Pimm, S. L., Jenkins, C. N., & Smith, S. J. (2016). The impacts of oil palm on recent deforestation and biodiversity loss. *PLOS ONE*, 11(7), Article e0159668. <https://doi.org/10.1371/journal.pone.0159668>

Vijayabaskar, M., & Viswanathan, P. K. (2019). *Emerging vulnerabilities in India's tea plantation economy: A critical engagement with policy response* (MIDS Working Paper No. 233). Madras Institute of Development Studies. https://www.mids.ac.in/assets/doc/WP_233.pdf

W

Wang, F., Zhou, W., & Zhang, Z. (2026). Greenwashing as a corporate strategy: A bibliometric analysis of risks, governance, and heterogeneity. *International Journal of Financial Studies*, 14(5), 121. <https://doi.org/10.3390/ijfs14050121>

Wang, Y. (2022). Analysis of Huawei Corporation's ethics and corporate social responsibility. *Modern Economics & Management Forum*, 3(1), 43–47. <https://doi.org/10.32629/memf.v3i1.663>

Warner, J., & Ajibade, T. (2024, November 18). China's smart cities in Africa: Should the United States be concerned? *Center for Strategic and*

- International Studies (CSIS)*. <https://www.csis.org/analysis/chinas-smart-cities-africa-should-united-states-be-concerned>
- Webster, K. (2017). *The circular economy: A wealth of flows* (2nd ed.). Ellen MacArthur Foundation Publishing.
- Western Sahara Resource Watch. (2025). *Certified occupation: How certification schemes embellish Morocco's controversial trade in occupied Western Sahara*. https://vest-sahara.s3.amazonaws.com/wsrw/feature-images/File/2823/694ce93e79e88_CertifiedOccupation2025.pdf
- Whish-Wilson, P. (2002). The Aral Sea environmental health crisis. *Journal of Rural and Remote Environmental Health*, 1(2), 29–34. <https://jrtph.jcu.edu.au/vol/v01whish.pdf>
- White, K. D. (2013). Nature–society linkages in the Aral Sea region. *Journal of Eurasian Studies*, 4(1), 18–33. <https://doi.org/10.1016/j.euras.2012.10.003>
- Who Profits. (2017, January). *Greenwashing the occupation: The solar energy industry and the Israeli occupation*. https://www.whoprofits.org/writable/uploads/publications/1668629471_b4d818057ec69d5ed2ca.pdf
- Who Profits. (2018, May). *Plundering the sun: The Israeli solar energy industry and Palestinian forced displacement*. Flash Report. https://www.whoprofits.org/writable/uploads/old/uploads/2018/06/old/solar_flash_report.pdf
- Who Profits. (2024, August). *Update — greenwashing dispossession: The Israeli renewable energy industry and the exploitation of occupied natural resources*. https://www.whoprofits.org/writable/uploads/publications/1729673061_82bf7135996905861314.pdf
- Who Profits. (n.d.). *The Israeli occupation industry — economic exploitation*. <https://www.whoprofits.org/involvement/view/8?economic-exploitation>
- Williams, A., & Mancini, F. (2015). *Measuring sustainability in cotton farming systems: Towards a guidance framework*. FAO. <https://openknowledge.fao.org/handle/20.500.14283/i4170e>
- Wilson, E. O. (2016). *Half-earth: Our planet's fight for life*. Liveright Publishing Corporation.
- World Bank. (2009). *Monthly operational summary of Bank and IDA proposed projects as of October 15, 2009*. <https://documents1.worldbank.org/curated/en/989011468155710532/pdf/Monthly-operational-summary-of-Bank-and-IDA-proposed-projects-as-of-October-15-2009.pdf>
- World Bank. (2010). *Monthly operational summary, November 2010*. <http://documents.worldbank.org/curated/en/809841468326994869>

- World Bank. (2012). *Ethiopia-Kenya electricity highway project*. <https://projects.worldbank.org/en/projects-operations/project-detail/P126579>
- World Bank. (2020). *World development report 2020: Trading for development in the age of global value chains*. World Bank. <https://www.worldbank.org/en/publication/wdr2020>
- World Bank, & United Nations Department of Economic and Social Affairs. (2017). *The potential of the Blue Economy: Increasing long-term benefits of the sustainable use of marine resources for Small Island Developing States and Coastal Least Developed Countries*. World Bank.
- World Commission on Dams. (2000). *Dams and development: A new framework for decision-making*. Earthscan.
- World Resources Institute. (2017). *Making women's voices count in community decision-making on land investments*. WRI. <https://www.wri.org/research/making-womens-voices-count-community-decision-making-land-investments>
- World Vision Australia. (2012). *Forced and child labour in the cotton industry*. <https://www.worldvision.com.au/docs/default-source/buy-ethical-fact-sheets/forced-and-child-labour-in-the-cotton-industry-fact-sheet.pdf>
- Worldometers. (2024). *World population clock*. <https://www.worldometers.info/world-population/>
- Wright, C., & Rwabizambuga, A. (2006). Institutional pressures, corporate reputation, and voluntary codes of conduct: An examination of the Equator Principles. *Business and Society Review*, 111(1), 89–117. <https://doi.org/10.1111/j.1467-8594.2006.00263.x>
- Wright, A. (2016). Lockheed's top government affairs official not registered as lobbyist. *Politico*. <https://www.politico.com/story/2016/07/lockheed-lobbyist-no-registered-225044>
- WWF. (2024). *Living Planet Report 2024: A system in peril*. WWF.
- Y**
- Yeung, C. (2018). *The sun belongs to everyone*. Al-Haq. <https://www.alhaq.org/publications/8054.html>
- Z**
- Zagelmeyer, S., Bianchi, L., & Shemberg, A. (2018). *Non-state based non-judicial grievance mechanisms (NSBGM) — An exploratory analysis: A report prepared for the Office of the UN High Commissioner for Human Rights*. <https://doi.org/10.13140/RG.2.2.32172.51843>

- Zagrebel'sky, G. (2014). *Fondata sulla cultura: Arte, scienza e Costituzione*. Einaudi.
- Zah, R., Böni, H., Gauch, M., Hischier, R., Lehmann, M., & Wäger, P. (2007). *Ökobilanz von Energieprodukten: Ökologische Bewertung von Biotreibstoffen* [Ecoprofile of energy products: Ecological evaluation of biofuels]. EMPA, Abteilung Technologie und Gesellschaft. https://www.bafu.admin.ch/dam/de/sd-web/skltBdq4GZ5C/oekobilanz_von_energieproduktenoekologischebewertungvonbiotreibs.pdf
- Zenz, A. (2019). "Wash brains, cleanse hearts": Evidence from Chinese government documents about the nature and extent of Xinjiang's extrajudicial internment campaign. *Journal of Political Risk*, 7(11). <https://www.jpolorisk.com/wash-brains-cleanse-hearts>
- Zheng, C. (n.d.). Digital colonialism: How tech powers are rewriting Africa's sovereignty. *The Sunday Diplomat*. <https://thesundaydiplomat.com/digital-colonialism-how-tech-powers-are-rewriting-africas-sovereignty/>
- Zuboff, S. (2019). *The age of surveillance capitalism*. PublicAffairs/Hachette Books.

List of Abbreviations

This list includes all abbreviations and acronyms used in the volume, ordered alphabetically. Each entry indicates the chapter in which the abbreviation is first introduced and defined. In subsequent chapters, abbreviations are used without redefinition; readers unfamiliar with a term are directed to the chapter indicated.

Abbreviations that are standard in their respective fields — such as UN system symbols, ISO currency codes, and internationally recognised institutional names — are used without chapter attribution where their meaning is universally established.

One abbreviation requires specific notice: **IEA** appears in Chapter 12 exclusively as *Israeli Electricity Authority*, a chapter-specific usage. The standard international abbreviation IEA (*International Energy Agency*) is used in its conventional sense wherever it appears elsewhere in the volume, and the two usages should not be conflated.

Abbreviations marked with † correspond to terms for which a full analytical definition is provided in the Working Glossary (Box 3) of the chapter indicated, and in the volume’s cumulative glossary accessible via QR.

Abbreviation	Full Form	First introduced
3TG	Tin, Tungsten, Tantalum, and Gold	Ch. 4
AECA	Arms Export Control Act	Ch. 12
AFDB	African Development Bank	Ch. 9
AI	Artificial Intelligence	Ch. 11
ARWG	Africa Resources Working Group	Ch. 9
ATT	Arms Trade Treaty	Ch. 12
BDS	Boycott, Divestment, Sanctions	Ch. 12
BHRRC	Business and Human Rights Resource Centre	Ch. 10
CABEI	Central American Bank for Economic Integration	Ch. 10
CAGR	Compound Annual Growth Rate	Ch. 7
CAHRAs †	Conflict-Affected and High-Risk Areas	Ch. 4
CEDAW †	Convention on the Elimination of All Forms of Discrimination against Women	Ch. 8
CERD	International Convention on the Elimination of All Forms of Racial Discrimination	Ch. 12

Abbreviation	Full Form	First introduced
CIPESA	Collaboration on International ICT Policy for East and Southern Africa	Ch. 11
CMR	Conflict Minerals Report	Ch. 4
COPINH	Civic Council of Popular and Indigenous Organizations of Honduras	Ch. 10
CORDA	Coordinamento Ricercator* Dottorand* e Assegnist*	Ch. 12
CRC	Convention on the Rights of the Child	Ch. 8
CS3D †	Corporate Sustainability Due Diligence Directive	Ch. 4
CSRD †	Corporate Sustainability Reporting Directive	Ch. 4
DESA	Desarrollos Energéticos SA	Ch. 10
DFI †	Development Finance Institution	Ch. 10
DLP †	Digital Labour Platform	Ch. 11
DoD	Department of Defense (United States)	Ch. 12
EAPP	East Africa Power Pool	Ch. 9
ECCHR	European Centre for Constitutional and Human Rights	Ch. 5
EEB	European Environmental Bureau	Ch. 4
EEHP	Ethiopia–Kenya Eastern Electricity Highway Project	Ch. 9
EEPCo	Ethiopian Electric Power Corporation	Ch. 9
EIB	European Investment Bank	Ch. 9
EPA	Environmental Protection Agency (United States)	Ch. 6
EP4 †	Equator Principles (fourth edition)	Ch. 9
EPC †	Engineering Procurement Construction (contract)	Ch. 9
EPZ †	Export Processing Zone	Ch. 8
ESG	Environmental, Social and Governance	Ch. 4
ESIA †	Environmental and Social Impact Assessment	Ch. 9
EUDR †	EU Regulation on Deforestation-Free Products	Ch. 4
FAA	Foreign Assistance Act	Ch. 12
FLEGT	Forest Law Enforcement, Governance and Trade	Ch. 4
FPIC †	Free, Prior and Informed Consent	Ch. 3
FPRW	Fundamental Principles and Rights at Work	Ch. 3
GBV †	Gender-Based Violence	Ch. 8
GDP	Gross Domestic Product	Ch. 2
GERD	Grand Ethiopian Renaissance Dam	Ch. 9

Abbreviation	Full Form	First introduced
GoE	Government of Ethiopia	Ch. 9
GVC †	Global Value Chain	Ch. 3
HRD †	Human Rights Defender	Ch. 10
HRIA †	Human Rights Impact Assessment	Ch. 3
HRDD †	Human Rights Due Diligence	Ch. 3
ICCPR	International Covenant on Civil and Political Rights	Ch. 11
ICBC	Industrial and Commercial Bank of China	Ch. 9
ICERD	International Convention on the Elimination of All Forms of Racial Discrimination	Ch. 11
ICESCR	International Covenant on Economic, Social and Cultural Rights	Ch. 12
ICMA	International Capital Market Association	Ch. 7
IDF	Israel Defense Forces	Ch. 11
IEC	Israel Electric Corporation	Ch. 12
IEA*	Israeli Electricity Authority (<i>Ch. 12 only</i>)	Ch. 12
IFC †	International Finance Corporation	Ch. 3
IHL	International Humanitarian Law	Ch. 12
IHRL	International Human Rights Law	Ch. 12
ILO	International Labour Organization	Ch. 3
ILUC †	Indirect Land-Use Change	Ch. 7
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services	Ch. 2
IPCC	Intergovernmental Panel on Climate Change	Ch. 2
IRENA	International Renewable Energy Agency	Ch. 9
IRP	International Resource Panel	Ch. 2
ISDS †	Investor-State Dispute Settlement	Ch. 8
ITAR	International Traffic in Arms Regulations	Ch. 12
IUCN	International Union for Conservation of Nature	Ch. 7
LMEPAC	Lockheed Martin Employees' Political Action Committee	Ch. 12
MOP	Meeting of the Parties (Aarhus Convention)	Ch. 10
MOSOP	Movement for the Survival of the Ogoni People	Ch. 10
NCP †	National Contact Point	Ch. 3
NFC †	Near Field Communication	Ch. 5

Abbreviation	Full Form	First introduced
NFRD	Non-Financial Reporting Directive	Ch. 4
NGA	National Governors Association	Ch. 12
NIRA	National Identification and Registration Authority (Uganda)	Ch. 11
NITA-U	National Information Technology Authority (Uganda)	Ch. 11
NYSE	New York Stock Exchange	Ch. 12
OECD	Organisation for Economic Co-operation and Development	Ch. 3
OPT	Occupied Palestinian Territory	Ch. 11
PACBI	Palestinian Campaign for the Academic and Cultural Boycott of Israel	Ch. 12
PFAS †	Per- and Polyfluoroalkyl Substances	Ch. 6
PLA †	Plantation Labour Act (India, 1951)	Ch. 8
PRC	People's Republic of China	Ch. 5
RCOI	Reasonable Country of Origin Inquiry	Ch. 4
RLU †	Royal Lestari Utama	Ch. 7
RSF	Rapid Support Forces (Sudan)	Ch. 4
RSPO †	Roundtable on Sustainable Palm Oil	Ch. 7
SAF	Sudanese Armed Forces	Ch. 4
SD	Specialised Disclosure	Ch. 4
SDGs	Sustainable Development Goals	Ch. 5
SDEF	Secretary of Defense Executive Fellows	Ch. 12
SFDR	Sustainable Finance Disclosure Regulation	Ch. 4
SIPRI	Stockholm International Peace Research Institute	Ch. 12
SLAPP †	Strategic Lawsuit Against Public Participation	Ch. 10
SPO †	Second Party Opinion	Ch. 7
THIRST	The International Roundtable for Sustainable Tea	Ch. 8
TLFF	Tropical Landscape Finance Facility	Ch. 7
TNC †	Transnational Corporation	Ch. 3
UFLPA †	Uyghur Forced Labor Prevention Act	Ch. 5
UNGA	United Nations General Assembly	Ch. 12
UNGC	United Nations Global Compact	Ch. 3
UNGPs †	United Nations Guiding Principles on Business and Human Rights	Ch. 3

Abbreviation	Full Form	First introduced
UNCTAD	United Nations Conference on Trade and Development	Ch. 12
UPF	Uganda Police Force	Ch. 11
URA	Uganda Revenue Authority	Ch. 11
USAID	United States Agency for International Development	Ch. 7
WB	World Bank	Ch. 9
WCD †	World Commission on Dams	Ch. 9
WSAF †	Women's Safety Accelerator Fund	Ch. 8
WWF	World Wildlife Fund	Ch. 2
XPCC †	Xinjiang Production and Construction Corps	Ch. 5
XUAR †	Xinjiang Uyghur Autonomous Region	Ch. 5

This is not a book about sustainable business. Moving far beyond greenwashing, *Business and Human Rights: From Knowledge to Responsibility* applies a pioneering transdisciplinary lens (integrating international law, environmental science, and Doughnut Economics) to expose the structural cost externalisation of global capitalism.

Part I establishes the normative framework toward binding corporate accountability. Part II details global violations across five continents, exposing forced labour, toxic concealment, and land grabbing. The volume culminates in a searing critique of the modern *governance laboratory*, dissecting how corporate capital and military technology converge to profit from systemised occupation and institutional impunity.

Rejecting passive neutrality, this textbook serves as both a rigorous analytical tool and an ethical catalyst. It maps a resilient web of scholar-activists and social movements, charting a concrete path for organised resistance against systems of oppression and exploitation.

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