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Mapping struggles around policy instruments deployed in environmental conflicts

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PhD Dissertation

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Antonio Bontempi

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Departament de Geografìa
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Supervisors

Dr. Roser Maneja Zaragoza
Dr. Daniela Del Bene
Dr. Arnim Scheidel

Tutor

Dr. Carme Miralles i Guasch

UAB
Universitat Autònoma de Barcelona

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Per chi viene,
per chi se ne va.
Per Gonzalo,
in memoria di papà

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Abstract

To address global unsustainability, state and market actors deploy numerous policy instruments ostensibly designed to balance economic, social, and environmental goals. Given the political nature of sustainability issues, understanding how these instruments distribute powers in environmental conflicts is critical. Such conflicts are increasingly recognized as pivotal in transformations toward more just and sustainable futures, making it essential to support those mobilizing against environmental degradation and social injustices caused by unsustainable resource exploitation. This PhD dissertation investigates how three prominent sustainability policy instruments influence the pursuit of environmental justice: corporate sustainability reporting mechanisms, environmental laws and land use plans, and protected areas. First, I take the case of corporate sustainability disclosures of an Italian one-century-old multinational construction company, WeBuild, as part of their Corporate Social Responsibility policy implementation approach. Through a *counter-reporting* methodology, I contrast the mismatch between the company's reports with testimonies of environmental injustices around 38 controversial dams in which they were involved globally. Second, I take the case of environmental laws and land use plans regulating the deployment of nine controversial renewable energy parks in the Mexican State of Yucatan. Drawing from fieldwork, interviews, and existing literature, I explore how legal frameworks and mechanisms shape the disputes between environmental authorities, development industries, and environmental defenders. Third, I carry out a global analysis of environmental justice outcomes of protected areas being deployed as a prominent conservation policy instrument. By overlapping data from the Global Atlas of Environmental Justice and the World Database of Protected Areas, I build a sample of 474 environmental conflicts located in protected areas and look at the role played by protected areas in the conflict dynamics. Overall, the findings reveal a problematic tension between the stated environmental protection goals of these instruments and their susceptibility to co-optation by economic interests. While local communities and environmental defenders sometimes leverage regulatory tools as part of their resistance strategies, evidence shows that these same instruments are often used by governmental and corporate actors to legitimize controversial projects, frequently leading to severe environmental injustices. I argue for nuanced, context-specific understandings of sustainability policy instruments that account for the diverse forms of power they embed.

Keywords: Policy Instruments - Extractivism - Environmental justice - Environmental Conflict - Environmental Defenders - Corporate Social Responsibility - Environmental Law - Protected Areas

Resum

Per a abordar les problemàtiques d'insostenibilitat a nivell global, actors estatals i corporatius despleguen nombrosos instruments de política pública, suposadament dissenyats per a equilibrar objectius econòmics, socials i ambientals. Donat el caràcter polític de les qüestions relacionades amb la sostenibilitat, és rellevant comprendre com aquests instruments distribueixen poders en context de conflictes ambientals. Aquests conflictes són cada vegada més reconeguts com a fonamentals en les transformacions cap a futurs més justos i sostenibles, fent que sigui essencial donar suport a aquells que es mobilitzen contra la degradació ambiental i les injustícies socials causades per formes d'explotació de recursos insostenibles. Aquesta tesi doctoral investiga com tres instruments destacats de política de sostenibilitat influeixen en la construcció de la justícia ambiental: els mecanismes de sostenibilitat corporativa, les lleis ambientals, i les àrees protegides. En primer lloc, s'han considerat els informes de sostenibilitat corporativa de l'empresa multinacional italiana de construcció, WeBuild, pel seu enfocament d'implementació de polítiques de Responsabilitat Social Corporativa. A través d'una metodologia de *contra-informe*, es contraresta la discrepància entre els informes de sostenibilitat de l'empresa amb testimonis d'injustícies ambientals a l'entorn de 38 preses controvertides. En segon lloc, s'han analitzat les lleis ambientals i els instruments de política d'ús del sòl que regulen el desplegament crític de nous parcs d'energies renovables a l'estat de Yucatán (Mèxic). A partir del treball de camp, entrevistes i literatura existent, la tesi explora com els marcs legals i els mecanismes de regulació d'us del sol donen forma a les disputes entre autoritats ambientals, indústries de desenvolupament i moviments de defensa ambientals. En tercer lloc, realitzo una anàlisi global de les implicacions en termes de justícia ambiental del desplegament d'àrees protegides, com a destacat instrument de política de conservació. En superposar dades de l'Atles Global de Justícia Ambiental i la Base de dades Mundial d'Àrees Protegides, s'ha obtingut una mostra de 474 conflictes ambientals situats en àrees protegides i s'examina el paper exercit per les àrees protegides en la dinàmica del conflicte. El conjunt dels resultats d'investigació revela una tensió problemàtica entre els objectius de protecció ambiental d'aquests instruments i la seva susceptibilitat a la cooptació per interessos econòmics. Si bé les comunitats locals i els defensors ambientals a vegades utilizen les eines reguladores com a part de les seves estratègies de resistència, l'evidència mostra que aquests mateixos instruments són sovint utilitzats per actors governamentals i corporatius per a legitimar projectes controvertits, sovint portant a greus injustícies ambientals. Advoco per enteniments dels instruments de política de sostenibilitat que siguin matisats, focalitzats en les peculiaritats del context i que considerin les diverses maneres de poder que incorporen els instruments.

Paraules clau: Instruments de polítiques - Extractivisme - Justícia ambiental - Conflicte ambiental - Defensa ambiental - Responsabilitat social corporativa - Dret ambiental - Àrees protegides

Resumen

Para abordar las problemáticas de insostenibilidad a nivel global, actores estatales y corporativos despliegan numerosos instrumentos de política pública, supuestamente diseñados para equilibrar objetivos económicos, sociales y ambientales. Dado el carácter político de las cuestiones relacionadas con la sostenibilidad, es relevante comprender cómo estos instrumentos distribuyen poderes en contexto de conflictos ambientales. Estos conflictos son cada vez más reconocidos como fundamentales en las transformaciones hacia futuros más justos y sostenibles, por lo que resulta esencial apoyar a quienes se movilizan contra la degradación ambiental y las injusticias sociales causadas por formas insostenibles de explotación de los recursos. Esta tesis doctoral investiga cómo tres destacados instrumentos de política de sostenibilidad influyen en la construcción de justicia ambiental: los mecanismos de responsabilidad social corporativa, las leyes ambientales, y las áreas protegidas. En primer lugar, tomo el caso de los informes de sostenibilidad de WeBuild, una empresa de construcción multinacional italiana con un siglo de antigüedad, como parte de su enfoque de implementación de políticas de Responsabilidad Social Corporativa. A través de una metodología de *contra-informe*, contrasto la discrepancia entre los informes de sostenibilidad de la empresa con testimonios de injusticias ambientales en torno a 38 represas controvertidas en las que estuvieron involucrados a nivel global. En segundo lugar, tomo el caso de las leyes ambientales y los planes de uso del suelo que regulan el despliegue de nueve controvertidos parques de energía renovable en el Estado mexicano de Yucatán. A partir de trabajo de campo, entrevistas y literatura existente, exploro cómo los marcos y mecanismos legales dan forma a las disputas entre autoridades ambientales, industrias de desarrollo y defensores ambientales. En tercer lugar, realizo un análisis global de las implicaciones en términos de justicia ambiental del despliegue de áreas protegidas, en cuanto destacado instrumento de política de conservación. Al superponer datos del Atlas Global de Justicia Ambiental y la Base de Datos Mundial de Áreas Protegidas, construyo una muestra de 474 conflictos ambientales ubicados en áreas protegidas y examino el papel que juegan las áreas protegidas en la dinámica del conflicto. El conjunto de los hallazgos revela una tensión problemática entre los objetivos de protección ambiental de estos instrumentos y su susceptibilidad a la cooptación por intereses económicos. Si bien las comunidades locales y

los defensores ambientales a veces aprovechan las herramientas regulatorias como parte de sus estrategias de resistencia, la evidencia muestra que estos mismos instrumentos son frecuentemente utilizados por actores gubernamentales y corporativos para legitimar proyectos controvertidos, lo que a menudo conduce a graves injusticias ambientales. Abogo por entendimientos de los instrumentos de política de sostenibilidad que sean matizados, focalizados en las peculiaridades del contexto y que consideren las diversas formas de poder que incorporan los instrumentos.

Palabras clave: Instrumentos de políticas - Extractivismo - Justicia ambiental - Conflicto ambiental - Defensa ambiental - Responsabilidad social corporativa - Derecho ambiental - Áreas protegidas

Contents

1 Introduction

> "I have not been able to find a single source that is against sustainability. Greenpeace is in favour, George Bush Jr. and Sr. are, the World Bank and its chairman (a prime warmonger in Iraq) are, the pope is, my son Arno is, the rubber tappers in the Brazilian Amazon are, Bill Gates is, the labour unions are. All are presumably concerned about the long-term socio-environmental survival of (parts of) humanity; most just keep on doing business as usual"
>
> (Swyngedouw, 2010 :190)

This provocative quote by Erik Swyngedouw points at the ambiguity of *sustainability* as a hegemonic concept. In his piece, the author suggests we have been recently living in a "post-political condition", one where meaningful contestation over sustainability is minimized and elite technocrats are in charge to manage socio-environmental challenges. Other political ecologists and critical geographers share such an understanding, reminding us that sustainability issues have an intrinsically political nature and transformations towards more sustainable ways of living necessarily requires embracing some degree of social conflict (Escobar, 2008; Harvey, 1997; Martinez-Alier, 2003; Scheidel et al., 2018; Temper et al., 2018).

The present PhD dissertation explores the tensions that unfold when apolitical versus political framings of sustainability collide. Particularly, I look at instances of conflicts between two distinct sets of actors and their agendas. On one side are 'elite technocrats' - including government authorities and corporate actors - who promote controversial 'development' projects with serious impacts on local ecologies. These actors deploy policy instruments that frame sustainability as a technical, depoliticized issue. On the other side are environmental defenders[1], environmental justice movements, grassroots collectives, local and Indigenous communities, and activists, among others, who mobilize to protect the territories affected by such projects. My research investigates how these policy instruments shape, constrain, support or provoke struggles for environmental justice, and in doing so, influence broader trajectories of global sustainability. This Chapter introduces and situates the key concepts, theoretical approaches, and problems that underpin and motivate my inquiry.

[1] I rely on Scheidel et al.'s (2020, p. 1) definition of environmental defenders as "[…] *individuals and collectives who protect the environment and protest unjust and unsustainable resource uses because of social and environmental reasons*".

1.1 A problem of sustainability

We are living in times of intertwined social and ecological crises. The Earth systems' equilibria are headed towards the brink of a collapse, threatening the very existence of life, including that of our own species (Richardson et al., 2023). There is widespread consensus among environmental scientists that human-driven unsustainable energy use, land use, and land-use change are among the major drivers of global warming, unprecedentedly high biodiversity loss rates and the alteration of biogeochemical flows, among other worrying phenomena (ibid., Brondizio et al., 2019; Calvin et al., 2023).

The idea that human activity has become a major threat to the biosphere is not new. One of the sources first claiming this was the *Brundtland's Report* (WCED, 1987), a document that also contributed to building and spreading the related concepts of *sustainability* and *sustainable development*. The notion of sustainability entered political debates at various levels, aiming to shape human development so that "it meets the needs of the present without compromising the ability of future generations to meet their own" (ibid.). As a result, sustainable development progressively permeated the discourses of influential political, economic and scientific organizations, including the United Nations, the World Bank, governments, big NGOs and academia; as well as becoming part of the discourses of actors within civil society. The concept of sustainable development translates into a wide range of interpretations and applications across the development apparatus. Among these, a common goal is to promote an economy that does not harm the biosphere, working instead towards eradicating poverty and social injustices in all their expressions (UN, 2025).

However, fresh evidence suggests that the sustainable development project has failed to achieve some of its crucial social and environmental targets (Biermann et al., 2022; UN-IGS, 2023). In the last decades environmental degradation has increased in many dimensions (Richardson et al., 2023); moreover, a large share of the world's population has been living in extreme poverty (Hickel et al., 2024), and the inequality of global wealth distribution is tremendously evident (Hasell et al., 2023), while many cases of environmental injustices and conflicts have been documented (Del Bene and Ávila, 2023).

Several scholars have argued that these shortcomings are strictly related to the problematic nature of the economy that is running under the sustainable development rhetoric: an industrial, growth-oriented, capitalist, neoliberal economy. The fact that economic and industrial growth are taken as core goals within sustainable development policies inevitably contradicts and hinders any environmental protection goals (Hickel, 2019). Allowing private

capitals to accumulate economic wealth without limits in a free global market has been argued to be unsustainable (Hickel et al., 2021; Kallis, 2011). The very origins of the development project have also been questioned. Thirty-two years have passed since Sachs (1992) edited the *Development Dictionary*, a book that is fundamental to the critical scholarship that problematizes the idea of development. Among its contributors, Arturo Escobar (1995) described development as a discourse that serves the interests of Western capitalist elites. According to his theory, the ideas that 'the poor' should be developed and the 'Third World' should be industrialized enabled the economies of the Global North to continue exploiting colonies that progressively gained independence after World War II. Such a theory is still relevant, given the empirical evidence of asymmetric net flows of biophysical resources from poorer to richer countries (Dorninger et al., 2021; Hickel et al., 2022).

1.2 Development and extractivism

The *modus operandi* of the industrial development apparatus has also proven to be controversial. Typical practices to promote industrial-scale development projects include prioritization of economic profits over socio-environmental sustainability concerns, the externalization of environmental and social costs with uneven distribution of related benefits, non-transparent decision-making processes that marginalize local communities, or systematic disregard for indigenous rights, cultures and traditional land use practices (Martinez-Alier and O'Connor, 1996).

Critical scholars have coined the term *extractivism* to express how industries that are dedicated to natural resource extraction, transport, processing, and waste disposal commonly operate in a violent way at what Moore (2000) first called *commodity frontiers*: i.e. those territories where new resources are progressively enclosed to be later sold on the global market. Extractivism is a mode of economic exploitation characterized by the large-scale appropriation of natural and human resources primarily for export and profit, often resulting in environmental degradation, social inequality, and the perpetuation of colonial or capitalist systems. While the term extractivism points to the material extraction of resources from the ground, in its current understanding it does not refer only to mining activities. Rather, what industries extract is economic value. Thus, the extraction of economic value from a gold mine, an oil well, deforestation, the construction of large-scale renewable energy facilities, or a tourist resort can potentially all be reconducted to extractivism.

During the last two decades *extractivism* has significantly expanded theoretically, empirically and geographically as an "organizing concept" applied to different contexts and sectors

(Chagnon et al., 2022). It is mainly rooted in Latin American debates concerning Indigenous people's resistance against natural resource extraction in the region markets (Acosta, 2013; Gudynas, 2015a, 2013; Svampa, 2012). There is a common understanding of some key elements that characterize the concept across a diverse range of perspectives and applications. Extractivism entails the appropriation of natural or human resources to the benefit of capitalist elites who aspire to the accumulation of economic wealth in their own hands. Such appropriation comes with potentially irreversible damage or depletion of its source, in a relation of non-reciprocity, and relies on power disparities and alienation of subjugated actors (Grosfoguel, 2016; Ye et al., 2020; ibid.). In these terms, extractivism is often understood as a form of colonialism (Acosta, 2013; Ayala Carrillo et al., 2018; Grosfoguel, 2016).

In my research, I do not intend to equate development with extractivism. I acknowledge that there are many examples of well-intentioned practices that are promoted under the development rhetoric, including many solidary social programs. When referring to the industrial development apparatus I am aware that I simplify a complex panorama of actors and activities carried out under a development rhetoric, by just considering those industries behind projects that have serious impacts on the environment and that operate with extractivist modalities

1.3 Environmental justice, conflicts and sustainability

Environmental justice (EJ) scholarship offers a vantage point from which to understand the dynamics of extractivism (Dunlap, 2023). The notion of EJ was initially coined in the 1980s by civil rights movements in the United States denouncing how urban Latino and Black communities were unevenly suffering serious threats from polluting industries and waste disposal facilities located in their neighborhoods (Bullard, 1994; Cole and Foster, 2001). Since then, the term has been adopted in different realms, including academia, within social movements, or in policymaking. In academia, EJ literature focuses on how injustices are perpetuated because of environmental reasons. Schlosberg (2004, 2007) was one of the first scholars who attempted to theoretically define EJ dimensions. He framed EJ as encompassing matters of (i) (unequal) distribution of environmental goods and bads, (ii) (mis) recognition of identities, cultures, ways of life, or worldviews, and (iii) (unfair) procedures in participation and decision-making processes. Other understandings of EJ have since been explored, such as epistemic (Ottinger, 2021; Temper and Del Bene, 2016; Vermeylen, 2019), ontological (Rose, 2014; Tornel, 2023a), intergenerational (Winter, 2020), and restorative (Forsyth et al., 2021) dimensions, or those related to actors' capabilities (Schlosberg and Carruthers, 2010). The EJ framework has been applied to different contexts, such urban justice (Anguelovski, 2013),

energy justice (Jenkins et al., 2016; Tornel, 2023b), or climate justice (Sultana, 2022; Whyte, 2020).

There are also scholars who work towards a *decolonial turn* in EJ scholarship and argue for a need to explore more critical perspectives (Álvarez and Coolsaet, 2020; Rodríguez and Inturias, 2018; Temper, 2019). In recent years, critical, de-/anti-colonial and Indigenous EJ thinkers have argued that most EJ scholarship is problematically rooted in hegemonic, Western notions of *environment* and *justice*, where nature is conceived as a distributable object, and solutions to injustices are too often bound to the realm of the state (Álvarez and Coolsaet, 2020). Inspired by Indigenous people's struggles, proponents of decolonial EJ theories suggest that the historical-geographical legacy of colonialism is (still) a major driver of injustices, especially under the form of a *coloniality* of dominant values and worldviews (Rodríguez and Inturias, 2018). From this standpoint, distributive equity of environmental goods and bads, together with calls for more recognition and participation mechanisms in environmental decision-making are questioned as desirable solutions to address injustices. The main critique is that these proposals risk reinforcing and legitimizing the very roots of injustice (i.e. colonialism, extractivism, capitalism) rather than addressing them. Radically, some decolonial EJ thinkers embrace calls for (i) a disruption of the conceptual human-nature dichotomy that underpins the possibility to objectify the environment; (ii) embracing self-government, self-determination and the idea of a radical redistribution of power; (iii) thinking in epistemic justice and self-affirmation terms; and (iv) the construction of interculturality (Álvarez and Coolsaet, 2020; Barragán Contreras, 2022; Barragán-Contreras, 2023; Rodríguez and Inturias, 2018; Temper, 2019; Tornel, 2023b).

When individuals or groups mobilize because of actual or potential environmental degradation and related perceived social impacts, threats, or injustices, *environmental conflict* unfolds (Del Bene and Ávila, 2023; Martinez-Alier, 2021; Scheidel et al., 2020). The industrial development apparatus is a major driver of environmental injustices and conflict. For instance, as of March 2025, the Global Atlas of Environmental Justice (EJAtlas, www.ejatlas.org; Temper et al., 2015; Figure 1.1) stores information on more than 4'200 cases of environmental conflicts worldwide. In the EJAtlas, cases of environmental degradation are for the most part due to industrial activities that impact a given territory. It mainly documents conflicts related to nuclear energy development, mineral ores and building materials extraction, waste management, energy production, water management, buildings and infrastructure construction, tourism, or industrial and utilities. Conflicts related to conservation initiatives are also present (see e.g. Fanari, 2020). The EJAtlas does not map all past and ongoing environmental conflicts globally, nor is it a statistically, geographically, or historically representative sample. Rather, the

documented cases reflect instances where the knowledge and outreach capacity of the EJAtlas management team was higher. Nevertheless, the database reports a low estimate of the number of conflicts that have unfolded worldwide. Therefore, these figures provide insights into the scale of the problematic nature the development project, and highlight how often state and corporate actors (and, sometimes, criminal organizations) behind such industry behave with an extractivist *modus operandi* (Del Bene et al., 2018; Hanaček et al., 2024, 2022; Martinez-Alier, 2021; Scheidel et al., 2023, 2020a; Temper et al., 2020; Teran-Mantovani, 2018; Tran and Hanaček, 2023).

Figure 1.1 Screenshot from the homepage of the Global Atlas of Environmental Justice website (www.ejatlas.org)

The fact that supporting social struggles against environmental injustices is crucial is a transversal underlying assumption to EJ literature. Scheidel et al. (2018) frame conflicts over environmental issues as “forces for sustainability”. They maintain that the mobilization of individuals and social groups because of unsustainable patterns of natural resource extraction, use, and depletion holds the potential to visualize the roots of the problem and lead to positive transformations of such patterns. They recognize that EJ movements, as political actors, work toward bringing concerns over sustainability to a political level, which is a fundamental step toward the construction of alternatives (Martinez-Alier et al., 2016; Millán, 2013). On a similar line, Temper et al. (2018) and Rodríguez and Inturias (2018) argue that social struggles to resist environmental degradation and injustices contribute to radically tackling the roots of unsustainability in reconfiguring the unfair power relationships behind the domination of one

sector of society over the other. They consider three major dimensions where power relationships unfold and where EJ struggles may have an impact: (i) existing legal, economic, and political structures and frameworks; (ii) the people and networks behind them; or (iii) the discourses, narratives, values, and worldviews that people hold (ibid.). The next Section focuses on the first of these intertwined dimensions, i.e., the institutional dimension. This encompasses the public spaces where policy, legal, and regulatory frameworks and instruments are conceived.

1.4 Sustainability policy instruments and environmental justice

The institutional ground is recognized as a crucial battleground within EJ literature, including in early works (such as Bullard and Johnson's, 2000). Institutions may be defined as established mechanisms of social order that provide formal and informal rules, norms, practices, and related sanctions (Voigt, 2019). Rules, laws, norms, standards, or regulations are institutions, when widespread and widely applied. Scheidel et al.'s (2020) review of the EJAtlas showcases how individuals and collectives who protest unjust and unsustainable environmental degradation pursue their struggles also via institutional mechanisms. Therefore, it is crucial to better understand under which conditions EJ struggles have chances to make progress at an institutional level.

Within social movements literature, the success of movements' struggles is theoretically conceived as *institutionally contingent*, meaning that the outcomes of the struggles are mediated by institutions (Schneiberg and Lonsbury, 2017). Institutions can be framed as a locus of power, or as tools that confer power to certain actors while disempowering others (Bennet et al., 2018; Kalt, 2024; Munir, 2015). Actors who are empowered by existing institutions may employ them to preserve their power or preclude alternatives (Schneiberg and Lounsbury, 2017). Vice-versa, established power relations can be challenged through the mobilization of institutions in social conflicts (ibid.). For environmental movements and activists, pursuing mobilization strategies at the institutional level can represent either a risk or an opportunity (Meyer, 2004; Meyer and Minkoff, 2004). Therefore, in analyzing environmental conflicts, it is important to empirically look at how institutions influence the power relationships between actors at play.

Among a myriad of institutions, I am interested in regulatory frameworks and mechanisms that are in place to address sustainability concerns. A large set of instruments of such kind are in place. Policymakers, at different levels and at different times, have proposed replicable solutions for regulating unsustainable human activity and to reconcile economic, ecological,

and social targets. As a result, the idea of sustainable development has been translated into a myriad of *policy instruments* (PIs) aimed at restricting human intervention on the environment, including the regulation of those industries involved in natural resource extraction, transport, processing, and waste disposal. For instance, as of October 2024, the OECD's Policy Instruments for the Environment Database stores information on approximately 4'100 instruments globally (OECD, 2024). This figure refers to market-based instruments only - which means that including non-market-based ones may increase the figure significantly (see e.g. UNFCCC, 2014). PIs are the tools and techniques that governments use to achieve policy objectives, thus bridging policy design and implementation (Vendung, 1998). They imply the enforcement of state authority or its conscious restriction (Howlett, 1991). When the policy objectives fall within the realm of sustainability, one may find references to environmental PIs (Aidt and Dutta, 2004; Böcher, 2012; Ji et al., 2022; Mickwitz, 2003; Tews et al., 2003), biodiversity PIs (Miteva et al., 2012), PIs for environmental protection (Gunningham and Sinclair, 1999), for environmental regulation (Taylor et al., 2012), for sustainable development (Guerrero et al., 2024; Veisi et al., 2012), or for sustainability (Zabala, 2021), among others. For the sake of practicality, I will refer to *sustainability policy instruments* (SPIs) to consider a broad set of PIs that, one way or another, are designed so to tackle socio-environmental sustainability problems through the regulation of human activity. Environmental taxes, tradable pollution permits, payment for ecosystem services mechanisms, multilateral agreements for climate action, environmental laws and regulations, corporate accountability initiatives and environmental conservation mechanisms are all examples of tools of such kind.

Typifying PIs helps capture their diversity and complexity, enhancing our understanding of their nature. Several PI typifications exist. Among the first characterizations of such kind, Bemelmans-Videc et al.'s (1998) distinction between *sticks*, *carrots*, and *sermons* is popular (see also Pacheco-Vega, 2020). *Sticks* are PIs that imply coercion, *carrots* imply the use of remuneration or deprivation of material resources, and *sermons* imply intellectual and moral appeals. Klemmensen et al. (2007) conceptualize two main kinds of regulations: rules that authorities enforce versus business self-regulation. Similarly, Ji et al. (2022) differentiate between standards established and enforced by governments versus market-based mechanisms, where authorities rely on market forces to meet policy objectives. Huppes and Simonis (2009) provide a more nuanced approach to typify PIs according to how they influence actors' relations. They distinguish between political-administrative instruments (i.e. when a governmental actor exerts authority over another governmental actor), regulatory instruments (i.e. guiding public regulator – private regulatee relations), and social instruments (i.e. when the instrument influences private-private actors' relationships).

Overall, the above-outlined classifications suggest that existing SPIs are predominantly led by governmental and market actors, who are (self-) assigned with authority to govern the tools' design and use. Therefore, it is relevant to look at when state and market actors behind extractivism and conflictive industrial-scale development projects deploy SPIs, for a series of reasons. The study of these instances helps to make visible the fundamental contradiction of attributing the mandate to address global unsustainability to those who largely contribute to the problem in the first place. Ostensibly, SPIs are conceived as technical fixes to sustainability problems, disregarding the political nature of sustainability matters. Tendentially, SPIs are designed and tested against efficiency, effectiveness, economic costs, feasibility, or public acceptance criteria, disregarding EJ or political concerns (Zabala, 2021). Even so, as previously argued, SPIs are all but politically neutral tools. Then, it is crucial for their understanding to study how they distribute powers and resources among interested actors and ultimately (un)make EJ. It is expected that state and market actors will tend to mobilize such instruments in their favor, at the expense of EJ movements, local and Indigenous communities, and environmental defenders. I inquire how SPIs are mobilized, by whom and what are the implications for EJ struggles of the mobilization of SPIs in the context of extractivism.

In Chapter 2, I outline the broader research aim and specific objectives that I am pursuing. Chapter 3 explains the methodological approach I employed, the criteria I used to choose the three case studies, and the data collection and analysis processes, as well as explaining my positionality as an engaged scholar. Chapters 4, 5, and 6 are empirical. I showcase the findings of my research approach. In Chapter 7, I discuss the findings, draw conclusions and suggest avenues for future research.

2 Research questions and objectives

This research aims to unpack the tension between the ostensibly apolitical character of prominent SPIs versus the inherently socially contended nature of sustainability issues. Specifically, I ask: *how does the deployment of SPIs by governmental and market actors shape EJ struggles*?

I address this overarching aim by considering three important SPIs in different contexts where environmental conflicts unfold:

- *Corporate sustainability reporting mechanisms of* WeBuild, *a multinational dam builder* – These represent tools of self-regulation by market actors, where corporations define and disclose their environmental and social impacts (Chapter 4).

- *Environmental laws and land use plans regulating renewable energy development in Yucatan, Mexico* – These exemplify state-driven regulatory frameworks designed to manage land and resource use while mitigating environmental harm (Chapter 5).

- *Protected areas deployment at a global scale* – These serve as hybrid instruments, characterized by heterogeneous governance arrangements, combining conservation policies with development restrictions to regulate land and resource use towards the protection of biodiversity (Chapter 6).

By looking at the deployment of these three different SPIs in different contexts of environmental conflict, I transversally address two specific objectives:

(i) To examine how the instruments are mobilized by the actors involved in the conflicts, and the related EJ implications. *Who gets to mobilize the SPIs? How do SPIs fit into the strategies adopted by actors involved in environmental conflicts? Which EJ dimensions do SPI mobilizations affect?*

(ii) To understand in which terms SPIs (dis)empower those who struggle for EJ. *When are environmental defenders' and movements' struggles hindered because of the SPIs? Under what conditions do SPIs create new avenues for EJ?*

3 Methods

3.1 Research Design

I address the research aim and objectives by studying three SPIs mobilized in the context of environmental conflicts tied to extractivism.

Environmental conflicts constitute the context that provides research data. Particularly, for each SPI, multiple cases of environmental conflicts where the instrument is mobilized as a tool within the dynamics of the conflicts are analyzed, following a comparative political ecology approach. Comparative political ecology approaches are useful for studying patterns and trends of causes and consequences of EJ globally or regionally. Such approaches combine and compare evidence from different cases of environmental conflicts (Martínez-Alier, 2023; see applications in Del Bene et al., 2018; Hanaček et al., 2024, 2022; Scheidel et al., 2023, 2020; Temper et al., 2020; Teran-Mantovani, 2018; Tran and Hanaček, 2023).

Following the principles and values of what has been conceptualized as co-production of knowledge for EJ (Conde and Walter, 2022; Temper and Del Bene, 2016; L. Weber et al., 2024), I rely on the accounts of environmental defenders, individuals and communities impacted by extractivism to depict the chronicle of a given conflict. These accounts come from a diverse set of sources, and are collected through fieldwork and interviews, secondary literature reviews and the EJAtlas (see Section 3.3).

The peculiarities of each type of PI also require specific methodologies that adapt to their characteristics and to the context in which the PI is embedded. These specific methodologies are described in the corresponding Chapters 4, 5 and 6.

3.2 Case selection

I selected three SPIs and application contexts:

(i) The case of corporate sustainability reporting mechanisms as tools for the implementation of the corporate social responsibility policy of the Italian multinational construction company WeBuild, which has been involved in the civil works of more than 300 dams globally in the last century (Chapter 4).

(ii) The case of environmental law and land use plans in the context of large-scale renewable energy development in the Mexican State of Yucatán (Chapter 5).

(iii) The case of protected areas as a major instrument for the implementation of biodiversity conservation policies (Chapter 6).

Three main criteria guided the choice of these SPIs. First, they were chosen as prominent examples of instruments put in place to regulate actors involved in industrial-scale development projects. Accordingly, I chose to focus on instruments whose rationale is widely accepted in sustainable development discourses and whose use is widespread in sustainability policy practice. Such a deliberative choice is functional to a cautious generalization of results. Given the growing use of these instruments, the lessons learned from each case can be useful in contexts other than the ones under scrutiny, while acknowledging potential biases. All the chosen instruments can be considered prominent, in their realms of application. Corporate Social Responsibility (CSR) is a well-known accountability measure to fight private enterprises' misbehavior, whose rationale finds roots in the 1950s (Baars, 2011; Carroll, 1999; Garriga and Melé, 2004; Taneja et al., 2011). According to the Governance & Accountability Institute (2020), 90% of companies listed on the Standard & Poor's 500 Index published sustainability reports in 2019. This figure goes beyond the mere development industry but gives an idea of the magnitude of the current diffusion of CSR as an institution within the private sector. The use of environmental laws and land use plans is widespread as an instrument for the regulation of the development industry, too. The UNEP's (2019) First Global Report on the Environmental Rule of Law outlines a proliferation of international environmental agreements and national environmental laws in the late 20th century. As of 2017, 176 countries have implemented environmental legal frameworks (ibid.). Finally, protected areas (PAs) are a cornerstone instrument for the achievement of global biodiversity conservation targets in the context of unsustainable land uses. Notwithstanding being an *old* institution (Phillips, 2007), the strategic importance of PAs has been recently reiterated in Target 3 of the 2022's Kunming-Montreal Global Biodiversity Framework (CBD, 2022), through which its 196 signatory countries agreed to extend the global PA cover from the actual 16% (UNEP-WCMC and IUCN, 2024) to 30% by 2030.

A second case selection criterion relates to the recognition that state and market actors are those that lead the deployment of SPIs (see Section 1.4). In my selection, I build on Klemmensen et al.'s (2007) typification based on the authority who governs the instrument. Specifically, they differentiate between instruments corresponding to business self-regulation mechanisms versus rules that governmental authorities enforce. CSR mechanisms belong to

the first set. They are voluntary, non-binding initiatives aimed at allowing corporations to self-regulate their behavior through accountability for their social and environmental impacts (Sheehy, 2014). They are assimilable to Bemelmans-Videc et al.'s (1998) conceptualization of sermons, as their use should be triggered by moral appeals. On the contrary, environmental law and land use plans are considered prescriptive sticks that governmental authorities use to regulate the industry. PAs can be framed as something in between. The International Union for the Conservation of Nature distinguishes PAs according to their governance type (Dudley, 2008). They can be managed by only governmental authorities, by private actors, by Indigenous peoples or local communities, or by a joint management board made of different kinds of actors (ibid.). This is why PAs can be defined as an instrument whose governance is hybrid. Table 3.1 frames the terms in which the three analyzed SPI differ, according to the existing typifications presented in Section 1.4.

Typification (see Section 1.4)	**Analyzed policy instrument**		
	Corporate sustainability reporting mechanisms	Environmental law and land use plans	Protected areas
Governance (Klemmensen et al., 2007)	**Business self-regulation**	**Governmental rule**	**Hybrid Governance**
Compliance mechanism (Bemelmans-Videc et al., 1998)	Sermon	Stick	Stick / Carrot
Driving force (Ji et al., 2022)	Market-based	Government-driven	Hybrid
Actors' relations (Huppes and Simonis, 2009)	Social	Regulatory	Hybrid

Table 3.1 Characterization of selected instruments according to existing PI typifications

Lastly, a third sampling approach relates to my familiarity with the cases and related ease in accessing information. In different circumstances, for various reasons, I worked in environments where I could study the three PIs at issue closely. I studied the CSR policy of an Italian corporation operating internationally in the building sector because of my background as an Italian building engineer and since I conducted a business political ecology of the environmental conflicts related to this company for my Master's thesis. I studied environmental laws and land-use plans regulating renewable energy development in Yucatan because, during a research stay at Merida's CINVESTAV Unit, I got in touch with members of the

scholar-activists collective Articulación Yucatán, who were interested in this particular topic. Finally, I chose to study PAs after a professional journey as a project manager with the UNESCO-endorsed International Center for the Mediterranean Biosphere Reserves.

3.3 Data collection and analysis

Environmental conflicts are the study ground from which data is collected. The approach for gathering information from the various cases of environmental conflicts adapts to the peculiarity of the context and the PI under scrutiny. This refers not only to the methodologies employed for data collection but also to the geographical scale of analysis. In this section, I provide some general considerations in relation to these methodologies. For more detailed information on the underlying methodological approaches for each case study, please refer to the dedicated Chapter.

Table 3.2 provides an overview of the methodological approaches and theoretical frameworks employed for each case, while Figure 3.1 maps the geographical location of the environmental conflicts taken into consideration.

Case	Geographical scale	Data collection	Data analysis
Corporate sustainability reporting mechanisms	Global	Secondary literature, EJAtlas, Counter-reporting	Comparative political ecology
Environmental law and land use plans	Regional	Fieldwork, interviews, secondary literature	
Protected areas	Global	EJAtlas, WDPA	

Table 3.2 Overview of the methodological approaches for each case

In the case of WeBuild's CSR mechanisms, I considered all the dams that were built by the company throughout their history. As we are talking about a multinational corporation that has been operating in more than 100 countries on five continents (WeBuild, 2024), the scale of analysis that I employ is global. Adopting a counter-reporting methodology (Gallhofer et al., 2006), I contrasted the sustainability reporting of WeBuild with information on environmental injustices and serious controversies related to 38 conflicting among their projects, retrieved from the review of the EJAtlas and other secondary sources. In the case of Yucatan's environmental laws and land use plans, I focused on the territory where they are applicable,

thus on a regional scale. For this case, I conducted fieldwork, interviews, and a secondary literature review 9 environmental conflicts. Finally, for the case of PAs I considered the global scale, as this is a policy that is promoted globally. Here, I cross-checked data from both the EJAtlas and the World Database of Protected Areas (WDPA; UNEP-WCMC, 2024), and analyzed a set of 474 EJAtlas conflict cases overlapping with PAs.

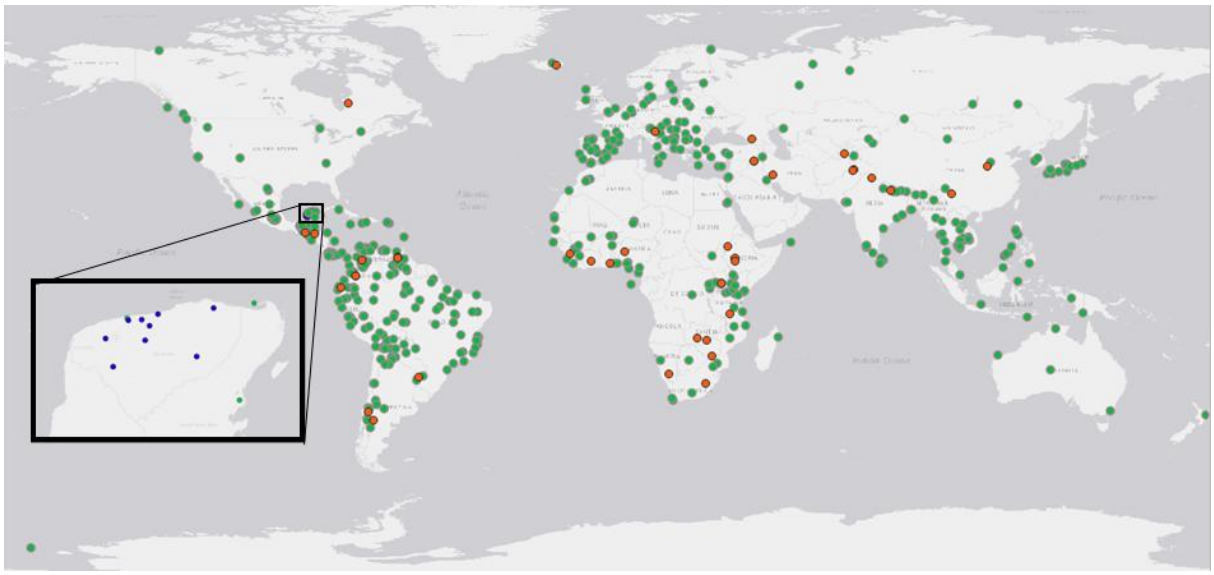

Figure 3.1 Map of the cases of environmental conflicts considered to study PI. Red, blue, and green dots geolocate the environmental conflicts studied for the cases of WeBuild's CSR mechanisms (n=38), Yucatán's environmental laws and land-use plans (n=9), and protected areas (n=474), respectively

3.4 Positionality

My background has significantly shaped my critical understanding of sustainable development and therefore the choice of the research topic. I spent my first six academic years studying Building Engineering at the University of Bergamo. There, I was trained to think of development, economic growth and technological progress in exclusively positive, technical terms. Once I graduated, I spent two years working as a professional in the Italian construction sector. In that free market, I could see some of the social and political drivers shaping the (more than often, unsustainable) development of those territories on which I was invested with the power of intervening as an engineer. However, I could not understand them fully, as I lacked the conceptual tools to make sense of what I was experiencing in the field. Therefore, I applied for an *Erasmus Mundus* scholarship to return to studying, which I had the privilege and honor to receive. I had the opportunity to study political ecology and ecological economics, and to look at the world through the critical lenses of scholars who inquired into matters of EJ and extractivism. Since then, I dedicated my time to better understanding how and why a major part of human activity upon the environment is unsustainable and unjust.

Now, as a scholar investigating EJ issues, I strive for my research to be not only methodologically, but also politically rigorous - in that I am transparent about the values that have led and shaped the research (as described in Borras Jr. and Franco, 2023). I consider the information on environmental conflicts I am drawing from to underpin this manuscript not merely as research data. Oftentimes, it relates to stories of people whose lives have been deeply impacted by extractivism. There are stories of dispossession, loss of livelihoods, loss of health, loss of shelter, starvation, diseases, violence, death, criminalization, and even assassination in the name of *development* or *sustainability* (let alone the related ecocides). My moral values push me to take the side of the vulnerable, and the marginalized, and to mobilize my research against this magnitude of injustices. This work aims to be an academic contribution with a political impact in such direction: in line with an emerging scholarship that is theorized as *militant research* or *scholar-activism* (ibid.; Bashiri, 2023; Russel, 2014). Talking about environmental conflicts works in support of the visibilization of environmental injustices and serious socio-environmental impacts suffered by people struggling on the ground. Studying the role of existing instruments for *sustainable development* works in favor of the struggle against extractivism, as it visibilizes the limits and opportunities of pursuing such a struggle within existing institutional architectures.

4 When the corporation self-regulates: On the role of the sustainability reporting mechanisms of the construction company WeBuild in hydropower conflicts

Disclaimer: An adapted version of this Chapter has been published in the *Journal of Business Ethics* (Bontempi et al., 2023a). The published work resulted from collaboration with other critical scholars, where I led the whole research process (including conceptualization, data collection, curation, analysis, validation, methodological design, visualizations, writing, review, and editing). Although the published article represents our collective work, this Chapter includes my own edits. Therefore, I use first-person singular pronouns (I/me/my) throughout, as this version differs from the one that I discussed with my co-contributors. The full reference and the original Abstract of the paper reads as follows.

Bontempi, A., Del Bene, D. & Di Felice, L.J (2023a). *Counter-reporting sustainability from the bottom up: the case of the construction company WeBuild and dam-related conflicts.* Journal of Business Ethics 182, 7–32. https://doi.org/10.1007/s10551-021-04946-6

Abstract: Controversies around large-scale development projects offer many cases and insights which may be analyzed through the lenses of corporate social (ir)responsibility (CSIR) and business ethics studies. In this paper, we confront the CSR narratives and strategies of WeBuild (formerly known as Salini Impregilo), an Italian transnational construction company. Starting from the Global Atlas of Environmental Justice (EJAtlas), we collect evidence from NGOs, environmental justice organizations, journalists, scholars, and community leaders on socio-environmental injustices and controversies surrounding 38 large hydropower schemes built by the corporation throughout the last century. As a counter-reporting exercise, we code (un)sustainability discourses from a plurality of sources, looking at their discrepancy under the critical lenses of post-normal science and political ecology, with environmental justice as a normative framework. Our results show how the mismatch of narratives can be interpreted by considering the voluntary, self-reporting, non-binding nature of CSR accounting performed by a corporation wishing to grow in a global competitive market. Contributing to critical perspectives on political CS(I)R, we question the reliability of current CSR mechanisms and instruments, calling for the inclusion of complexity dimensions in and a re-politicization of CS(I)R accounting and ethics. We argue that the fields of post-normal science and political ecology can contribute to these goals.

4.1 Introduction

"Everyone can say foolish things.
You know what? There are five million
people who believe that the Earth is flat.
And they even vote"
– Pietro Salini, CEO of WeBuild[2]

With these words, the CEO of the multinational construction company WeBuild, Pietro Salini, replied to an Italian journalist, addressing concerns raised by civil society organizations over the controversial impacts of the Gibe III hydropower scheme in Ethiopia (EJAtlas, 2023a). According to several scholars, media and environmental justice organizations, the dam has deprived hundreds of thousands of indigenous people living downstream of their livelihoods (Africa Resources Working Group, 2009; Carr, 2017; Franchi and Manes, 2016; Hodbod et al., 2019; Human Rights Watch, 2014a; OECD Watch, 2017; Survival International, 2021; The Oakland Institute, 2019). The Italian corporation, however, states in their 2016 Sustainability Report that "Gibe III has been designed and built with great care in terms of the effects on local communities, in order to mitigate its impacts and enhance its benefits" (Salini Impregilo, 2016, p. 37). Reality and truth are not the same for everyone, as philosopher of science Ravetz argues: "[…] any image of reality, being constructed within a particular system, simultaneously reveals, distorts and conceals" (Ravetz, 2006, p. 280). This is especially relevant in complex situations, when diverging beliefs and values are at play and forged by (strongly unequal) power relations. Under these circumstances, what claims, or grievances count as legitimate? What values reveal, distort, and conceal interests behind a particular system?

Controversies surrounding corporate social responsibility (CSR) disclosures are a case in point. CSR became popular both in the academy and in policymaking in the 1950s as a tool to hold transnational corporations (TNCs) accountable for the ethics of their behavior (Baars, 2011; Carroll, 1999; Garriga and Melé, 2004; Taneja et al., 2011). Recently, engaged scholars have criticized CSR frameworks and indicators both theoretically and empirically for their weakness in including sustainability dimensions[3], or on the grounds that they may be used to hide irresponsible behavior (Cho and Patten, 2013; Kotchen and Moon, 2011; Lewis, 2016; Maher, 2020). The inconsistencies between CSR disclosures and from-the-ground facts or

[2] Turano (2011)

[3] While I acknowledge the three 'classical' dimensions of sustainability, that are most used in business reporting (economic, environmental, social), I also understand them as inter-linkable and overlapping (Lozano and Huisingh, 2011).

partial information about corporate behavior have been referred to as corporate hypocrisy (Antonetti et al., 2020; Delmas and Burbano, 2011). By unveiling corporate hypocrisy, viewed by many as an ethically unacceptable practice, the moral legitimacy behind the *social license to operate* of TNCs - development industry included - can be questioned (Ehrnström-Fuentes, 2016; Ehrnström-Fuentes and Kröger, 2017; Gehman et al., 2017).

Building on this critical view, engaged academics introduced the concept of corporate social irresponsibility (CSIR), arguing that CSR narrowly points to practices, policies, controls, and procedures that are self-reported by corporations themselves (Maher, 2020; Riera and Iborra, 2017). From a political and post-colonial perspective, (Banerjee, 2011, 2010, 2008a, 2008b, 2003) has claimed that the very concept of CSR should be politicized, problematized, and deconstructed for the benefit of communities impacted by TNCs operations (Banerjee, 2008a).

In this Chapter, I address Banerjee's call through a counter-reporting exercise[4], focusing on over six decades of civil works by WeBuild. I contrast the company's CSR disclosures with alternative sources that criticize the projects. In doing so, I highlight high-level controversies tied to 38 large hydropower schemes linked with WeBuild. My point of departure for the comparative analysis is the bulk of data on socio-environmental conflicts related to the Italian corporation retrieved from the EJAtlas (Martinez-Alier, 2021; Temper et al., 2015). This is then further expanded through an exploration of the available sources of global evidence around the 38 contentious cases.

I aim to enrich critical thinking about mechanisms for the self-regulation of corporate powers, by problematizing the debate on CSR mechanisms as prominent SPI, and by proposing counter-reporting as a powerful methodological tool for discussing them. While counter reports are recognized as powerful tools for the politicization of CSR (Gallhofer et al., 2006), they are rarely adopted from academia as they require high labor costs (Macellari et al., 2021), or are relegated to campaigners and activists (Gallhofer et al., 2006). Adopting an activist-scholar spirit, I use my stance to amplify the voices and experiences that are left untold in the standard CSR framing, through the case study of a TNC operating in the global dam building market. Throughout my analysis, I ask: To what degree do CS(I)R reports account for environmental justice dimensions? Can the complexities of such dimensions be included in existing CSR reporting mechanisms?

[4] I acknowledge that the two terms 'accounting' and 'reporting' have been sometimes used interchangeably gallhoferalthough the former is probably more commonly in use in Business Accounting research. However, I choose here to use 'reporting' in order to stress the fact that my practice deals with matters that are by no means commensurable, or countable.

Environmental justice struggles around large hydropower schemes provide many cases and insights to answer the question. Supporters of such projects promise environmental and social benefits. However, evidence shows how the same projects disrupt local environments and displace populations. Despite extensive literature on the subject (Ansar et al., 2014; Bompan et al., 2017; Del Bene et al., 2018; Kirchherr and Charles, 2016; McCully, 2001), a growing number of dams is being planned and constructed as a strategy to cut down carbon emissions (Zarfl et al., 2015). As of 2018, approximately 70% of global renewable electricity supply was provided by hydropower (International Environmental Agency, 2020). The sector has grown rapidly since the mid-2000s, due to the increased energy demand brought by the industrial sector, growth in urban consumption, and new funding and favorable policies for carbon–neutral energy sources (Steller, 2013). Private actors play an increasingly important role in this trend, as public–private partnerships are on the rise and new financing schemes with an important component of private capital are emerging (Braeckman et al., 2020). In this context, it becomes urgent to unpack the CSR discourses of dam building companies and to problematize their premises.

4.2 Background

4.2.1 Political Corporate Social Reponsibility and environmental justice

The politicization of CSR discourses and practices is a growing cue for discussion in business studies (Scherer and Palazzo, 2011). Political CSR has been conceptualized with the aim of shifting from an instrumental view of CSR to a political one that is morally informed and democratically driven (Palazzo and Scherer, 2006; Scherer and Palazzo, 2011, 2007). This perspective enables debates around governance, responsibility, democracy, and the legitimacy of CSR (Scherer and Palazzo, 2011). However, Scherer and Palazzo (2011) recognize the challenge for political CSR scholars in dealing with the complexities behind the post-national and post-modern constellation of actors and the related growing pluralism of values and norms: “the question remains of how the legitimacy of corporate activities can be normatively accessed when no universal criteria of ethical behavior are available” (ibid., p. 906). Existing environmental justice frameworks are very much relevant to this end, as corporate behavior is often a main driver for injustice, which in turn relates to the ethics and (ir)responsibility of the actions of TNCs. However, despite few exceptions (Benton, 2002; Hoffman, 1991; Maher, 2020; Nadeem, 2021; Oyewole, 2001; Ramirez, 2021), environmental justice is still under-used in political CSR analyses. In turn, the politization of CSR accountings is relevant for EJ scholars too. Recently, calls for more intersectional works between business

and EJ have been launched (Martínez-Alier, 2023b; G. Weber et al., 2024). Meanwhile, EJ scholars are showing the potential of EJ analysis of businesses (Llavero-Pasquina et al., 2024; Saes et al., 2021).

If the goal is then to how to confront CSIR, the dilemma can be solved by starting to give more weight to the voices that are left untold in standard CSR framing. Banerjee (2008a), Ehrnström-Fuentes (2016) and Hussain and Moriarty (2018) agree that there is a danger that marginalized or excluded stakeholders (who often coincide with the supposedly beneficiaries of corporate actions) may lack the organizational power needed to make their voices heard. Still, the question of how to involve non-corporate actors in the CSR deliberative process, and of who is included, needs further research (Banerjee et al., 2023; Hussain and Moriarty, 2018). I draw on the concept of counter-reporting to work in this direction. Among a wide range of practices in CSR studies that could be described as "accounting for the other, by the other" (Shearer, 2002; Tregidga, 2017, p. 511), Gallhofer et al. (2006, p. 681) define the concept of counter-accounting as "information and reporting systems employed by groups such as campaigners and activists with a view to promoting their causes or countering or challenging the prevailing official and hegemonic position". Despite the emancipatory potential of these kinds of practices (Gallhofer et al., 2006; Gray et al., 2014), the approach is under-explored in academia, partially because of the high labor costs associated with it (Macellari et al., 2021).

4.2.2 WeBuild and its Business Branch of Dam Construction

WeBuild (webuildgroup.com) is today the major Italian industrial group specialized in construction and civil engineering works. It is the rebrand (from May 2020) of Salini Impregilo following its acquisition of Astaldi, another giant of the construction sector (WeBuild, 2020a). In turn, Salini Impregilo, founded in 2014, is the result of the merge of ten companies (Girola, Lodigiani, Torno, FIAT Impresit, Cogefar, Todini, Impregilo, S.A. Healy, Lane Industries, and Salini Costruttori) over more than one century of history. Table 4.1 resumes the main events that marked the history of the Italian industrial group.

As of 2020, the company has been operating in more than 50 countries across the world. With a backlog of about 42 billion euros (WeBuild, 2020b), Salini Impregilo was listed by the American magazine Engineering News-Record as the worldwide unrivaled top international contractor in the water infrastructure sector for five years in a row (Engineering News-Record, 2018). From the 1960s onwards, the group's track record counts with more than 300 dams and hydroelectric plants for a total installed power of 52,900 MW, including projects under construction (WeBuild, 2020c).

Year	Event
1906	Vincenzo Lodigiani and Umberto Girola decided to enter the construction market with their respective companies
1929	The main Italian automotive firm FIAT enters the construction sector, under the name of Impresit
1936	Pietro Salini (grandfather of the current CEO) starts his own construction company
1956	Impresit, Girola and Lodigiani start a joint venture (Impre.Gi.Lo) for the construction of the *Kariba* dam (Zambia-Zimbabwe)
1956	The re-established Salini Costruttori starts the construction of the *Legadadi* dam in Ethiopia
1959	Cogefar Costruzioni Generali is established
1960	Impregilo SpA is created from the merge of Impresit, Girola and Lodigiani
1984	The US company S.A. Healy is bought by the group
1989	Cogefar and Impresit merge into Cogefar-Impresit SpA
1994	Cogefar-Impresit, Girola, Lodigiani and Impresit-Girola-Lodigiani merge and become Impregilo SpA
2009	Salini Costruttori purchases Todini SpA
2014	Salini Impregilo SpA Group is born from the merge between Salini and Impregilo
2016	Salini Impregilo acquire 100% of the US company Lane Industries
2020	The group is renamed as WeBuild after the acquisition of Astaldi SpA

Table 4.1 Main events that marked the history and development of today's WeBuild SpA (Salini Impregilo, 2016a)

4.3 Methodology

This research was triggered by the extraordinary case of the Ethiopian Gibe III dam, which was shortly introduced at the beginning of the article. The extent of the impacts it caused and the magnitude of outrage it generated inspired and pushed me to investigate further. The Italian TNC was chosen then as the object of study after realizing that twenty high-intensity socio-environmental conflicts ascribable to dams that are acknowledged among WeBuild's civil works were already registered in the EJAtlas database at the beginning of this study in 2019, proving the contentious presence of the company in various countries. The EJAtlas represents today the largest global database of socio-environmental conflicts. It was created in 2011 to give more visibility to conflicts, to collect data from the ground up, and to advance political ecology research toward large comparative analyses (Martínez-Alier, 2023a). It has involved hundreds of collaborators, both activists and academics. For further information on the EJAtlas

rationale, see Temper et al. (2015). Most of these cases were already well known both by myself (as contributor of the EJAtlas) and in the international press, such as El Quimbo in Colombia (EJAtlas, 2022a), the Lesotho Highland Water Project in Lesotho (EJAtlas, 2022b), the Grand Renaissance dam in Ethiopia (EJAtlas, 2023b), the Mosul dam in Iraq (EJAtlas, 2022c), or Chixoy in Guatemala (EJAtlas, 2022d). Other cases are less known but just as dramatic, such as Nathpa Jhakri in Northern India (EJAtlas, 2021a) or the Tokwe Mukorsi dam in Zimbabwe (EJAtlas, 2022e). The methodology (schematized in in Figure 4.1) was then conceived to explore the CSR frameworks and sustainability discourses of WeBuild and to build a counter-report based on alternative sources.

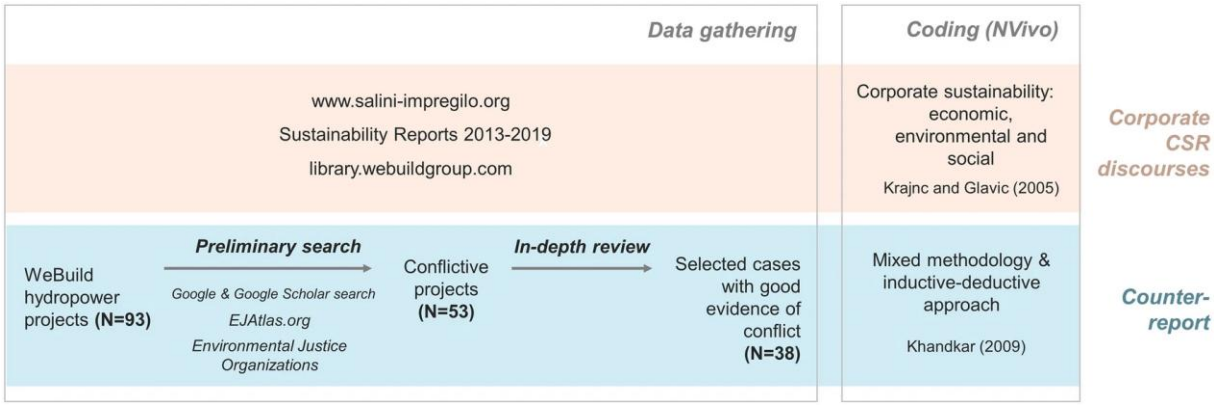

Figure 4.1 Methodological steps

I first reviewed the company's website (www.salini-impregilo.com, available until the rebrand into WeBuild), their sustainability reports published from 2013 to 2019 (for the years 2018 and 2019, these reports were included in the company's consolidated financial statements) and publications (library.webuildgroup.com). The categories for the coding of Salini Impregilo-WeBuild reports were chosen based on the "triple bottom line" concept of sustainability, namely economic, environmental, and social, which is largely deployed in corporate reporting (Krajnc and Glavič, 2005).

To build the counter-reporting exercise, I conducted a review of existing sources of evidence for other potential controversial cases with the aim of broadening the information contained in the EJAtlas and of making the analyzed database as comprehensive as possible. I first identified all the dams featuring a hydropower component built across WeBuild's history, retrieving the list from the company's website and publications. For each of these projects, I conducted online research to characterize the following features: country, start and end date of the civil works, contractor, operating capacity (MW), and evidence (or not) of controversy, dispute, or conflict. I followed the conceptualization of socio-environmental conflicts proposed by Martinez-Alier and O'Connor (1996), who defined them as conflicts over the (unfair)

distribution of environmental benefits and costs. This conceptualization was further developed in the political ecology and environmental justice literature, as those conflicts including mobilizations and protests around the lack of participation and recognition by local communities, and more broadly by environmental justice organizations, to refer to particular economic activities, infrastructure construction or waste disposal/pollution whereby environmental impacts are a key element of their grievances (Schlosberg, 2004). To collect the information about the dams, I associated the name of each dam to a set of keywords, as follows:

> *[Name of the dam] AND (problem OR corruption OR liability OR conflict OR violence OR dispute OR impact OR police OR military OR protest OR strike OR controversy OR eviction OR resistance OR environmentalist OR opposition OR protest OR claim OR contested OR controversy OR resettlement OR victim OR survival OR threat OR demonstration OR affected OR homeless OR disruption OR abuse OR poverty OR development OR livelihood).*

The search was performed between January and February 2020 through the Google and Google Scholar search engines to capture both academic and non-academic types of sources; at first in English, and then repeated in Spanish, French or Italian, depending on the language spoken in the country where the dam was built. The same keywords were associated with the names of the companies that made up WeBuild (see Section 4.2 and Table 4.1). This way, I retrieved cases that were associated with previous names of the company. This provided me with 53 cases that presented pieces of evidence of different forms of contention and conflicts, out of the 92 dams that were initially identified. I then excluded those cases with limited data (e.g., cases characterized by generic statements, statements not related to the specific case, those without proper references, or historic cases for which no online information could be found). Nevertheless, as even current conflicts remain underreported or completely invisible to the mainstream media, it was necessary to expand the information base. For those cases where little online information could be found, therefore, and to the extent of my capacity, I reached out to local organizations and front-line communities and activists to confirm data or provide additional sources. I relied on my own activist networks and on snowball methodology, as well as integrating the database with information from the social media profiles and webpages of environmental organizations, when possible. This process rests on the principles of the co-production of knowledge around socio-environmental conflicts, which is also at the core of the EJAtlas dataset (Temper and Del Bene, 2016). Evidence mainly comes from documentation produced from the ground up, i.e., from members of established organizations or collectives that have large social legitimacy amid environmental controversies. It includes

press notes, declarations and statements released by the same organizations, reports, and other (non-academic) publications. This type of knowledge is often sidelined or dismissed in mainstream media or corporate reporting. When available, I complemented this information with academic and peer-reviewed publications. My scientific methodology and political positionality aim therefore at abiding to both scientific and political rigor (Borras Jr. and Franco, 2023), as well as to the principles of quality in the scientific process suggested by post-normal science scholars.

The final dataset analyzed in this article includes 38 highly controversial dams. The sources of evidence related to these 38 cases were then coded. Codes were created starting from dimensions of environmental justice, such as the unequal distribution of goods and bads (e.g., environmental and socio-economic impacts), participation, and recognition (transparency and repression of dissent). I then complemented this with specific coding related to the construction of hydro-dams. Coding was both inductive and deductive (Khandkar, 2009), as I started from an environmental justice framework to capture claims and grievances but also included categories that strongly emerged from my sources and that did not fall in these categories. Codes were then refined throughout the analysis to best capture issues at stake.

NVivo was used to code both the reports of Salini Impregilo-WeBuild and the diverse sources found in relation to conflicts. The full codebook is annexed in the Appendix

4.4 Findings

4.4.1 The Company's CSR and Sustainability Discourses

The review of the Salini Impregilo-WeBuild website and publications reveals an image of an industrial group that is avant-gardist in its mission of CSR accomplishments. In 2013 Salini Impregilo subscribed to the United Nations (UN) Global Compact initiative and consequently adopted the UN Guiding Principles for Business and Human Rights (Salini Impregilo, 2013, p. 3; United Nations Global Compact, 2021). Moreover, the company has included the UN Sustainable Development Goals within its sustainability policy since 2015 (Salini Impregilo, 2019, 2018, 2017a, 2016a, 2015a). Since 2013, the company has published annual sustainability reports (WeBuild, 2020d), where they self-account for their actions through an audit carried out by an independent third-party. Besides this, Salini Impregilo-WeBuild declares the adoption of an anti-corruption policy, a code of ethics (WeBuild, 2020e, 2020f), and an

integrated management system in compliance with UNI EN ISO[5] 9001 (quality management), UNI EN ISO 14001 (environmental management), UNI EN ISO 45001 (health and safety) international standards, all certified by an independent external body (Salini Impregilo, 2013, p. 12; WeBuild, 2020g). Moreover, WeBuild allegedly also operates in compliance with the OSCE Guidelines for multinational enterprises and with the principles of the ISO 26000 standard on *Social Responsibility* (WeBuild, 2020g). In Table 4.2 I report a selection of CSR guidelines and standards that the company pledges to comply with or follow.

The firm boasts several awards (WeBuild, 2020h). It appears in the Top 11 Open Corporation ranking, a project led by the Italian union Filcams-Cgil and co-financed by the European Commission (Open Corporation, 2021; Salini Impregilo, 2017b). In addition, they rank third in the Social Reporting Transparency Index for companies with the “best sustainability reports” (Salini Impregilo, 2017b), and eighth in the Total Transparency Index (ibid.), with their website winning the NC Digital Awards for “best storytelling” (Salini Impregilo, 2015, p. 13). Salini Impregilo adopted the Global Reporting Initiative guidelines in preparing its reports (Salini Impregilo, 2013, p. 3), and is included in the Carbon Disclosure Project (CDP)’s Climate A List (Salini Impregilo, 2015a, p. 13(WeBuild, 2020h). With regards to Environmental, Social and Governance (ESG) ratings, WeBuild claims to be a “benchmark of excellence” (WeBuild, 2020i), scoring high in various assessments by main rating agencies (EcoVadis, Morgan Stanley Capital International, ISS, VigeoEiris).

In the vision of the industrial group, big infrastructure is a desirable key necessity for the well-being of future generations (Salini Impregilo, 2016a), p. 7). Dams and hydropower plants are framed as tools to reduce carbon emissions and regulate waterflows while simultaneously raising countries' economic potential, especially needed in those 'poor' (Southern) countries that lack large infrastructure development (Salini Impregilo, 2016b p. 158, 2015b). These corporate sustainability discourses have been coded and shown in Table 4.3, and mapped onto three sustainability dimensions: economic, environmental and social.

I found that the reporting is mostly not case-specific, and data (on economic, environmental and social dimensions) are aggregated—that is, numbers that are reported, such as GDP growth or land restoration figures, tend to be macro-scale figures which are difficult to map onto specific projects or processes. In the few cases where the context of a particular project

[5] UNI (Ente Italiano di Normazione), EN (European Committee for Standardization) and ISO (International Organization for Standardization) are respectively Italian, European and International organizations for (voluntary) standardization. They develop and publish Standards.

is mentioned, the reports celebrate the ways in which the company benefits local populations, or the environment.

UN Business & Human Rights Guiding Principles
"The responsibility to respect human rights requires that business enterprises: (a) Avoid causing or contributing to adverse human rights impacts through their own activities, and address such impacts when they occur; (b) Seek to prevent or mitigate adverse human rights impacts that are directly linked to their operations, products or services by their business relationships, even if they have not contributed to those impacts." (UNHROHC, 2011, p 14)
UN Sustainable Development Goals (https://sdgs.un.org/goals)
"End poverty in all of its form everywhere" (#1)
"End hunger, achieve food security and improved nutrition and promote sustainable agriculture" (#2)
"Ensure healthy lives and promote well-being for all" (#3)
"Ensure availability and sustainable management of water and sanitation for all" (#6)
"Ensure access to affordable, reliable, sustainable energy for all" (#7)
"Protect labour rights and promote safe and secure working environments" (#8.8)
"Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss" (#15)
"Promote peaceful and inclusive societies […], provide access to justice for all and build effective, accountable and inclusive institutions at all levels" (#15)
UNI EN ISO 9001 (quality management system standards)
"When planning for the quality management system, the organization shall […] determine the risks and opportunities that need to be addressed to […] prevent, or reduce, undesired effects" (ISO 9001:2015(E), 6.1.1, p. 4)
UNI EN ISO 14001 (environmental management system standards)
"requires an organization to identify the environmental aspects arising from the organization's past, existing or planned activities, products and services, in order to determine the environmental impacts of significance" (ISO 14001:2004(E), A.1, p 10)
ISO 26000 (social responsibility)
[an organization should] "be accountable for its impacts on society, the economy and the environment" (ISO 26000:2010(E), 4.2, p. 10) "[…] be transparent in its decisions and activities that impact on society and the environment (ibid., 4.3, p. 10)" […] respect, consider and respond to the interests of its stakeholders. (ibid., 4.5, p. 12) "[…] respect human rights"
Global reporting initiative standards
"The reporting organization shall report […] a description of its significant economic, environmental and social impacts, and associated challenges and opportunities. This includes the effects on stakeholders and their rights as defined by national laws and relevant internationally-recognized standards" (Disclosure 102–15 of GRI 102, 2016, p. 15)

Table 4.2 References to a selection of CSR guidelines and standards that WeBuild pledges to comply with

Codes	Illustrative quotes
Economic sustainability	
Energy security	“Access to energy represents one of the major pillars for the development of society. Yet the current fossil fuel-based energy system leaves about 1.4 billion people around the world without access to electricity” (Salini Impregilo, 2013, p. 9)
GDP growth (at country and local levels)	“Salini Impregilo aims to develop infrastructure projects that act as catalysts for growth in the countries where we operate(Salini Impregilo, 2013, p. 21) “The Group is committed to expanding opportunities for suppliers of goods and services in every host country by prioritising local sourcing, wherever possible” (Salini Impregilo, 2015a, p. 21)
Green economy	“Under the ‘green economy’ paradigm, economic growth and socio-environmental sustainability are viewed not as incompatible, but as mutually reinforcing” (Salini Impregilo, 2013, p. 9)
Infrastructure need	“Robust infrastructure is the lifeblood of strong economies and societies, playing a major role in industrial, agricultural, rural and urban development” (Salini Impregilo, 2015a, p. 15)
Job creation	“In addition to the direct workforce, the construction industry makes regular use of subcontractors for certain activities, as well as other providers of services (including technicians, consultants, catering staff, etc.), which contribute significantly to the number of jobs created at the local level. In 2014 around 16,700 people were employed by our subcontractors, and another 2900 by related service providers, 74% of whom were hired locally" (Salini Impregilo, 2014, p. 24) “We engaged nearly 15,000 people to participate in the projects at the end of 2015, 97% of whom come from rural communities nearby” (Salini Impregilo, 2015a, p. 32)
Poverty alleviation	“Infrastructures improvement is inextricably linked with poverty alleviation, particularly in low-income countries, where better infrastructure can provide a safety net against natural disasters and economic shocks” (Salini Impregilo, 2013, p. 9)
Revenues creation (for shareholders; from labor income)	“Our shareholders and investors benefited from the growth of our revenue (+ 13.6%) and backlog (+ 9.9% in the construction and plant sector) in terms of return on their investments and share value (+ 108.57%);” (Salini Impregilo, 2013, p. 3) “The Company has operating procedures and practices designed to ensure that its remuneration policies comply with the regulations applicable in all the countries where the Group operates and especially the minimum wage requirements, where these exist” (Salini Impregilo, 2017a, p. 154)
Environmental Sustainability	
Circular economy	“Improving performance throughout the infrastructure’s life cycle” (Salini Impregilo, 2016a, p. 52)
Clean, renewable energy	“Through our projects we play an important role in combatting climate change” (Salini Impregilo, 2013, p 46)
Impact assessment	“All potential environmental impacts deriving from our construction activities are assessed according to a standardised methodology, based on specific criteria (probability of occurrence, consequences for the environment, duration of the event, difficulty of restoration). Following the impact assessment, each project prepares an Environmental Management Plan, which describes the management and monitoring activities (Environmental Control Plans) for all environmental components involved” (Salini Impregilo, 2014, p. 41)
Impact mitigation	“We are committed to reclaiming all areas affected by our plants, facilities, quarries and landfills during or after the completion of a project. The aim is to leave these areas in a condition that facilitates natural re-vegetation, prevents soil erosion, improves slope stability, returning affected areas to their original state” (Salini Impregilo, 2013, p. 50)

Table 4.3 Codification of WeBuild’s sustainability narratives

Social sustainability

Anti-corruption policy	“Salini Impregilo has a zero tolerance policy for all types of corruption and is committed to complying with the anti-corruption laws ruling in all the countries where it operates”. (Salini Impregilo, 2017a, p. 179)
Community support – capacity building for locals	“Local road improvements, electricity supply, sport facilities construction” (Salini Impregilo, 2013, p. 16) “We have realized dozens of projects in recent years, including schools, health centres, public offices, water networks, roads and bridges” (Salini Impregilo, 2013, p. 27) “A total of 207 social programmes were carried out over the period 2012–2014 (48 in 2014)” (Salini Impregilo, 2014, p. 27)
Ethics	“Code of Ethics, which defines for each corporate value the principles that guide our behaviours. These include honesty, fairness, integrity, impartiality, confidentiality, physical integrity protection, respect for human dignity, environmental protection, and the respect of local communities” (Salini Impregilo, 2015a, p. 38)
Human rights (of local populations and workers)	“The Group supports the rights enshrined in the International Bill of Human Rights and the International Labour Organization conventions” (Salini Impregilo, 2016a, p. 78)
Stakeholders' engagement	“For Salini Impregilo, building shared growth also means interacting with and supporting the communities that live near our sites. We have a longstanding commitment to understanding the cultures, needs, and expectations of those communities. For example, we seek to integrate our sites with the surrounding areas by deepening our knowledge of the country and local area, and regularly engaging with communities” (Salini Impregilo, 2015a, p. 22)
Work safety and health; training to employees	“We pay particular attention to the provision of good living conditions for personnel employed in remote areas and challenging socio-environmental contexts” (Salini Impregilo, 2013, p. 38)

Table 4.3 (continues) Codification of WeBuild’s sustainability narratives

For example, in Uganda, when delivering the Bujagali plant, Salini Impregilo partnered with an NGO dealing with oncological treatments (Salini Impregilo, 2013, p. 29); in the frame of the Tocoma dam in Venezuela, a vocational training program was developed to teach sustainable farming to local communities (ibid., p. 29); in Malaysia, the company claims that the local communities impacted by the Ulu Jelai dam would benefit from road improvements, electricity supply and the construction of sports facilities (ibid., p. 16). The story that emerges from a book that celebrates their 110 years of history is one they “are proud to tell” (Salini Impregilo, 2016b, p. 7).

The reports never mention potential or actual negative impacts of the works they have been involved in. Yet, as the results of my research in the next section show, the version portrayed by the corporation substantially differs from alternative sources.

4.4.2 Unsustainability Claims

In this section, I provide an overview of the results from the counter-reporting exercise that I described in the methodology. I start by providing an overview of the types of injustices linked to the 38 selected projects; then, I focus on discussing in more detail select emblematic cases. For this second part, I trace the unsustainability claims tied to the cases with a geographical and chronological approach.

Table 4.4 lists the 38 dams that were included in the analysis. For each dam, where retrievable, I report information on the name, country, year (start and end of civil works), capacity (MW) and references. The codebook that systematizes the information on the various sources is provided in Table 4.5, where for each (sub)code I report references to emblematic quotes and dams (the full source documents are provided in the Appendix). This set of codes does not overlap with the one obtained from the analysis of company's disclosures (Table 4.3): this is because the narratives deployed by claimants and by the corporation are inherently different and sometimes diverging. Evidence of conflicts is retrievable across years, dam features, project phases and geographies. From the oldest to the most recent, the cases were ordered chronologically in Table 4.4 to show how disputes and conflicts are not bound to a particular time, but rather recurring across decades. Controversies do not only emerge in the context of large hydropower development, as the power capacity ranges significantly across cases. The unsustainability claims tied to the dams encompass all stages of the civil works: from the project (technical-economical) design to its long term (environmental, social, economic) consequences, passing by the construction phase. The range of claims associated with multiple stages of each project make it hard to disentangle those specifically associated with civil works from broader claims which cannot be directly traced to WeBuild.

This is particularly true for cases of geopolitical conflicts or allegations of corruption. Rather than excluding those broader and more ambiguous claims, I keep their evidence, as it points to the complex picture of which WeBuild is often a part of, and from which it cannot be divided.

Figure 4.2 shows how different unsustainability claims are tied to the 38 dams. They are grouped under eight categories: design and construction defects; financial unsustainability; geopolitical and interstate conflicts; impacts: environmental disruption; impacts: socio-economic disruption; labor right violations and safety issues; repression of dissent; lack of transparency. Each category is then disaggregated into specific sub-nodes.

Name	Country	Civil works		Company	Capacity (MW)	Main references
		Start	End			
Kariba	Zambia-Zimbabwe	1956	1959	Impregilo	600	(Darbourn, 2015; EJAtlas, 2023c; International Rivers, 2009; Lang et al., 2000; Scudder, 2005)
Dez	Iran	1959	1963	Impregilo	520	(Lang et al., 2000)
Akosombo	Ghana	1961	1965	Impregilo	912	(EJAtlas, 2023d; Hilton, 1966; Lang et al., 2000; Miescher, 2014)
Kainji	Nigeria	1964	1999	Impregilo	760	(EJAtlas, 2022f; Lang et al., 2000)
Tarbela	Pakistan	1968	1974	Impregilo	3'478	(Bennet and McDowell, 2012; EJAtlas, 2022g; Lang et al., 2000)
Kossou	Ivory Coast	1969	1972	Impregilo	174	(Prowizur, 1976; Raphaël et al., 2019)
Chivor	Colombia	1970	1982	***	1'000	(Semana, 2019)
James Bay	Canada	1974	1981	Salini Costruttori	5'616	(Curran, 2012; EJAtlas, 2022h; Wall, 2017)
Itezhi-Tezhi	Zambia	1974	1978	***	120	(Godet and Pfister, 2007; Lang et al., 2000)
Chixoy (Pueblo Viejo)	Guatemala	1976	1983	Cogefar	281	(Colajacomo, 1999; Dearden, 2012; EJAtlas, 2022d; Guatemala Human Rights Commission, 2011; Johnston, 2010; Lang et al., 2000; Manes, 2012)
El Cajón	Honduras	1980	1985	Impregilo	300	(Lang et al., 2000; McCully, 2001)
Betania	Colombia	1981	1988	***	510	(Galindo Vanegas, 2018)
Mosul (Saddam)	Iraq	1981	1985	Impregilo	750	(Al-Ansari et al., 2020; Bender, 2014; Borger, 2016; EJAtlas, 2022c; Filkins, 2016)
Bumbuna	Sierra Leone	1982	2009	Salini	143	(D'Angelo, 2014; EJAtlas, 2022i; Mazzei and Scuppa, 2006)
Daule Peripa	Ecuador	1982	1987	Impregilo	213	(EJAtlas, 2021b; Gerebizza, 2009)
Yacyreta	Argentina - Paraguay	1983	1988	Impregilo	3'100	(EJAtlas, 2022j; Lang et al., 2000)
Piedra del Aguila	Argentina	1985	1993	Impregilo	1'400	(Balazote and Radovich, 2003)
Ertan	China	1987	1998	Impregilo	3'300	(Lang et al., 2000)
Lesotho Highlands Water Project	Lesotho	1989	**	Impregilo	110	(EJAtlas, 2022b; Lang et al., 2000; Lenka Thamae and Pottinger, 2006; Transparency International, 2007)
Nathpa Jhakri	India	1993	2004	Salini Impregilo	1'530	(EJAtlas, 2021a; Himdara, 2015; Lang et al., 2000)
Xiaolangdi	China	1994	2000	Impregilo	1'836	(Lang et al., 2000)
Lower Kihansi	Tanzania	1995	2000	Impregilo	300	(EJAtlas, 2021c; International Rivers, 2001; Lang et al., 2000; Quinn et al., 2005)
Ghazi Barotha	Pakistan	1996	2003	Impregilo	1'450	(International Labour Organization, 2002; Lang et al., 2000)
Gibe I	Ethiopia	1997	2003	Salini Costruttori	184	(Carr, 2017)
Kali Gandaki	Nepal	1997	2002	Impregilo	144	(EJAtlas, 2022k; Khadka, 2003; Thanju, 2008)
Caruachi	Venezuela	1997	1998	Impregilo	2'076	(Lang et al., 2000)
Tokwe Mukorsi	Zimbabwe	1998	2017	Salini Impregilo	12	(EJAtlas, 2022e; Human Rights Watch, 2015)
Tocoma	Venezuela	2002	**	Impregilo	2300	(El Pitazo, 2019; Poliszuk et al., 2018; Transparencia Venezuela, 2018)
Kárahnjúkar	Iceland	2003	2009	Impregilo	690	(EJAtlas, 2022l; Thorarins, 2013; Zhang, 2013)
Gibe III	Ethiopia	2006	2016	Salini Impregilo	1'870	(Africa Resources Working Group, 2009; Carr, 2017; EJAtlas, 2023a; Franchi and Manes, 2016; Hodbod et al., 2019; Human Rights Watch, 2014a; OECD Watch, 2017; Survival International, 2021; The Oakland Institute, 2019)
Bujagali	Uganda	2007	2012	Salini	250	(EJAtlas, 2022m; National Association of Professional Environmentalists Uganda, 2014)
HidroSogamoso	Colombia	2009	2015	Impregilo	820	(EJAtlas, 2022n; Moreno Socha, 2019; Rios Vivos Colombia, 2021; Roa Avendaño and Duarte Abadía, 2012)
El Quimbo	Colombia	2010	2015	Impregilo	400	(Dussán Calderón, 2024; EJAtlas, 2022a; Galindo Vanegas, 2018)
Angostura	Chile	2010	2014	***	316	(Ecosistemas, 2018; EJAtlas, 2022o; ElDesconcierto, 2014; Osses, 2014)
Grand Ethiopian Renaissance	Ethiopia	2011	2020	Salini Impregilo	6'000	(BBC, n.d.; EJAtlas, 2023b; Hussein, 2014; International Rivers, 2017, 2014, 2013; Roussi, 2020; Zane, 2020; Zelalem, 2020)
Neckartal	Namibia	2013	2018	Salini Impregilo	3	(Namibian Sun, 2015; New Era Live, 2014; Tjihenuna, 2014)
Nenskra	Georgia	2015	*,**	Salini Impregilo	280	(BankWatch, 2019; Chipashvili, 2017; Democracy & Freedom Watch, 2020; EJAtlas, 2022p)
Rogun	Tajikistan	2016	**	Salini Impregilo	3'600	(EJAtlas, 2021d; Human Rights Watch, 2014b; Skoba, 2013)

*In 2019, Salini Impregilo withdraws; **the facility is still under completion; *** missing data

Table 4.4 List of hydropower schemes included in the analysis

Code	Emblematic cases	Illustrative quote
Design-construction defects		
Geological vulnerability of the site	Mosul, Daule Peripa, Nenskra	"Mosul dam engineers warn it could fail at any time, killing 1m people" (Borger, 2016)
High costs of maintenance	Mosul, Chixoy, Tarbela	"Constant grouting is necessary to keep the structure from collapsing in upon itself" (Bender, 2014)
Over/under-sizing	GERD, Ertan, El Cajón, Natpha Jhakri	"The dam is 300% over-sized. More than half of the turbines will be rarely used" (International Rivers, 2013)
Poor or none feasibility and alternatives' study	Bujagali, LHWP, Gibe III, El Quimbo	"Options like solar, wind, biomass and geothermal have not been adequately studied to provide evidence that Bujagali dam project is the least-cost option" (National Association of Professional Environmentalists Uganda, 2014, p.19)
Structural and components' defects	Akosombo, Kariba, Chixoy	"Three turbines had to be taken out of service in 1998 at a cost of $5 million in lost production when cracks appeared" (Lang et al., 2000, on *Yacyreta*)
Financial un-sustainability		"The dam has turned out to be a financial disaster" (Colajacomo, 1999, p.14)
Electricity overproduction	Ertan, Yacyreta	"the general manager of Ertan Hydropower Development Corporation, has become increasingly anxious because he could sell only 60% of the dam's output" (Lang et al., 2000, on *Ertan*)
Increase of energy tariffs and public debt	Yacyreta, Bujagali, Daule Peripa	"ANDE wants to increase electricity tariffs by 30% to overcome its critical financial state" (Lang et al., 2000, on *Yacyreta*)
Project Cost overrun	Yacyreta, Tarbela, Bujagali, Chixoy	"The dam's costs soared from an original estimate of $2.7 billion to $11.5 billion" (Lang et al., 2000, on *Yacyreta*)
Time overrun	Bumbuna, Tocoma, Yacyreta	"'When Bumbuna is completed' became a popular phrase, which indicated, 'never'" (Mazzei and Scuppa, 2006, p. 15)
Geopolitical and interstate conflicts	GERD, Mosul, LHWP, Bumbuna	"Ethiopia has started filling the GERD, as Egypt still calls it an 'existential threat'" (Roussi, 2020)
Impacts - environmental disruption		
Emission of greenhouse gases	Hidrosogamoso, GERD	" flooding 168,000 hectares will result in decomposition of vegetation, leading to emissions of carbon dioxide and methane gases" (Luna, 2020)
Biodiversity loss	Kihansi, LHWP, HidroSogamoso	"The loss of the spray from the waterfall […] has sent the critically endangered Kihansi Spray Toad and at least two endangered plant species to the brink of extinction" (International Rivers, 2001)
Deforestation	GERD, El Quimbo, Kali Gandaki	"The dam will flood 1,680 square kilometers of forest" (International Rivers, 2014)
Disruption of river ecology and water contamination	Gibe III, Karahnjukar, Kariba	"The reduction in river flow will cause the level of Lake Turkana to fall by about two thirds." (Survival International, 2021)
Erosion and sedimentation	Akosombo, Chivor, Karahnjukar	"The trapping of silt behind the dam has also led to severe coastal erosion downstream, with beaches and sections of the highway along the West African coast being washed away" (Lang et al., 2000, on *Akosombo*)
Loss of protected, sacred or archaeological sites	Xiaolangdi, Gibe III, El Quimbo	"The reservoir will also flood 100 archaeological sites where 10,000 year-old relics, and objects from the Song Dynasty (900-1279 AD), have been found" (Lang et al., 2000, on *Xiaolangdi*)

Table 4.5 Codebook for unsustainability claims associated with the analyzed hydropower schemes

Impacts - socio-economic disruption		
Accidents	Kainji, Kariba	"at least 39 people were killed […] after floodgates were opened to release rising floodwaters at the Kainji dam" (Lang et al., 2000, on *Kainji*)
Displacement & Resettlement		
Forced or violent displacement	Chixoy, Gibe III, Akosombo, Towke Mukorsi	"a massacre took place in Guatemala that left 400 people dead. Countless more were displaced, tortured, raped or left starving. And all to make way for a hydroelectric dam" (Dearden, 2012)
Inadequate or no compensation measures	Tarbela, Bujagali, Chixoy, Towke Mukorsi, Gibe III	"Some 96,000 people were displaced by the project and are still fighting in the courts for compensation" (Lang et al., 2000, on *Tarbela*)
Inadequate resettlement	Kariba, Bujagali, LHWP, Rogun	"flooding was said to have affected 635,000 people, 180,000 of whom were living in emergency shelters" (Scudder, 2005, p. 26)
Health related issues	Akosombo, Chivor, Daule Peripa, Lower Kihansi, Kpong	"Water-borne diseases such as schistosomiasis, ochocerciasis and malaria have increased dramatically since the filling of the reservoir" (Lang et al., 2000, on *Akosombo*)
Increase in violence and crime	El Quimbo, Gibe III, LHWP	"now that the lake has reduced, the other tribes have moved closer and raids have intensified along with killings on both sides." (Allibhai, 2015, p. 15)
Local poverty creation		
Damage or loss of properties and households	Bujagali, LHWP, Hidrosogamoso, Kariba, Rogun, Towke Mukorsi	"households from both sides of the river banks […] raised concerns about damages to their houses due to blasting of rocks at the dam site." (National Association of Professional Environmentalists Uganda, 2014, p.15)
Energy Poverty	Yacyreta, Bujagali, Rogun	"the government provides electricity to resettled communities for only a few hours per day." (Human Rights Watch, 2014b, p.32)
Loss of basic facilities and services	Katse, Chivor, Kossou	"Getting sick is practically forbidden in that sector during the summer. Without river transportation, transporting a patient to the municipality's health centre becomes a difficult and very expensive odyssey." (Semana, 2019)
Loss of livelihoods and employment	Gibe III, Towke Mukorsi, Kariba	"the dam is set to destroy the livelihoods of hundreds of thousands of tribal people" (OECD Watch, 2017)
Malnutrition and lack of safe water	Bujagali, Daule Peripa, Towke Mukorsi, Kariba	"Between 70 and 90% of inhabitants do not have access to drinkable water" (Gerebizza, 2009, p. 13)
Monetary poverty	Rogun, Towke Mukorsi, Chixoy, Hidrosogamoso	"People who had previously relied on their lands to provide food reported that, after resettlement, they had to purchase most or all of their food at markets, leaving less money for other household needs." (Human Rights Watch, 2014b, p.3)
Loss or threat to cultural identity	Bujagali, Angostura, Tarbela, Gibe III	"We had our own culture and customs. We had a set way of life. All that has been disturbed" (Bennet and McDowell, 2012, p. 41)
Migration	Hidrosogamoso, Kossou	"As their fields produce too little, the young people are forced to look for jobs abroad" (Prowizur, 1976, p. 244)

Table 4.5 (continues) Codebook for unsustainability claims associated with the analyzed hydropower schemes

Labour rights violation and safety issues		
Accidents & deaths at construction site	Mosul, Kariba, Bujagali, Neckartal	"The Iraqi-American hydrological engineer, told me that, in Iraq, when labourers fell into wet cement during large infrastructure projects, it was common for the work to carry on." (Filkins, 2016)
Low or inadequate wages	Ghazi Barotha, Bujagali, GERD, Rogun, Neckartal	"Impregilo is accused by local and international trade unions of not respecting a joint agreement on wage" (Lang et al., 2000, on *Ghazi Barotha*)
Poor or unsafe working conditions	Neckartal, Ghazi Barotha, Mosul	"they work on empty stomachs with no safe drinking water at the construction site despite the long extended working hours" (Tjihenuna, 2014)
Threats and Violation of constitutional workers' rights	Neckartal, Natpha Jhakri, Hidrosogamoso	"workers expressed grievances over allegations of discrimination, human rights violations, victimisation, racism, and unfair dismissal, among a host of other things." (Tjihenuna, 2014)
Repression of dissent		
Assassinations of environment defenders	Hidrosogamoso, Chixoy	"assassination of six members of the Social Movement in defence of Sogamoso river" (censat.org)
Criminalization of dissent	El Quimbo, Chixoy, Ghazi Barotha	"union leaders' relatives were detained and some even tortured." (Lang et al., 2000, on *Ghazi Barotha*)
Violent repressive measures and militarization	Chixoy, Bumbuna, Gibe III, Kariba, Towke Mukorsi, Hidrosogamoso	"The construction company's directors therefore decided to hire mercenary troops to protect their staff and prevent further theft and destruction of equipment and machinery" (D'Angelo, 2014, p. 39)
Lack of transparency		
Lack or poor information or involvement of local communities in the decision-making	Bumbuna, Tarbela, Gibe III, Chixoy, Daule Peripa, El Quimbo, GERD	"consultations took place only in 1976, after the dam construction had started." (Colajacomo, 1999, p. 2)
Alleged corruption and pending cases	Yacyreta, Bumbuna, Nenskra, Tocoma, James Bay, El Quimbo	"The Yacyreta dam was famously described by Argentinian president Carlos Menem as a 'monument to corruption'" (Lang et al., 2000, on *Yacyreta*)
Proven corruption	LHWP	"Impregilo […] pleaded guilty to 'attempting to defeat the course of justice'(Transparency International, 2007, p. 89)
Contract- and bidding related issues	Gibe I and III, El Quimbo, GERD, Mosul	"EEPCO repeated its turnkey contracting— disregard for bidding process and project oversight—in successive Gibe dam contracts with Salini." (Carr, 2017, p.32)
Poor or no E(S)IA	Gibe I and III, Chixoy, El Quimbo, LHWP, Bujagali	"the Ethiopian EPA did not produce an environmental or socioeconomic impact report (EIA) prior to the development" (Carr, 2017, p.33)

Table 4.5 (continues) Codebook for unsustainability claims associated with the analyzed hydropower schemes

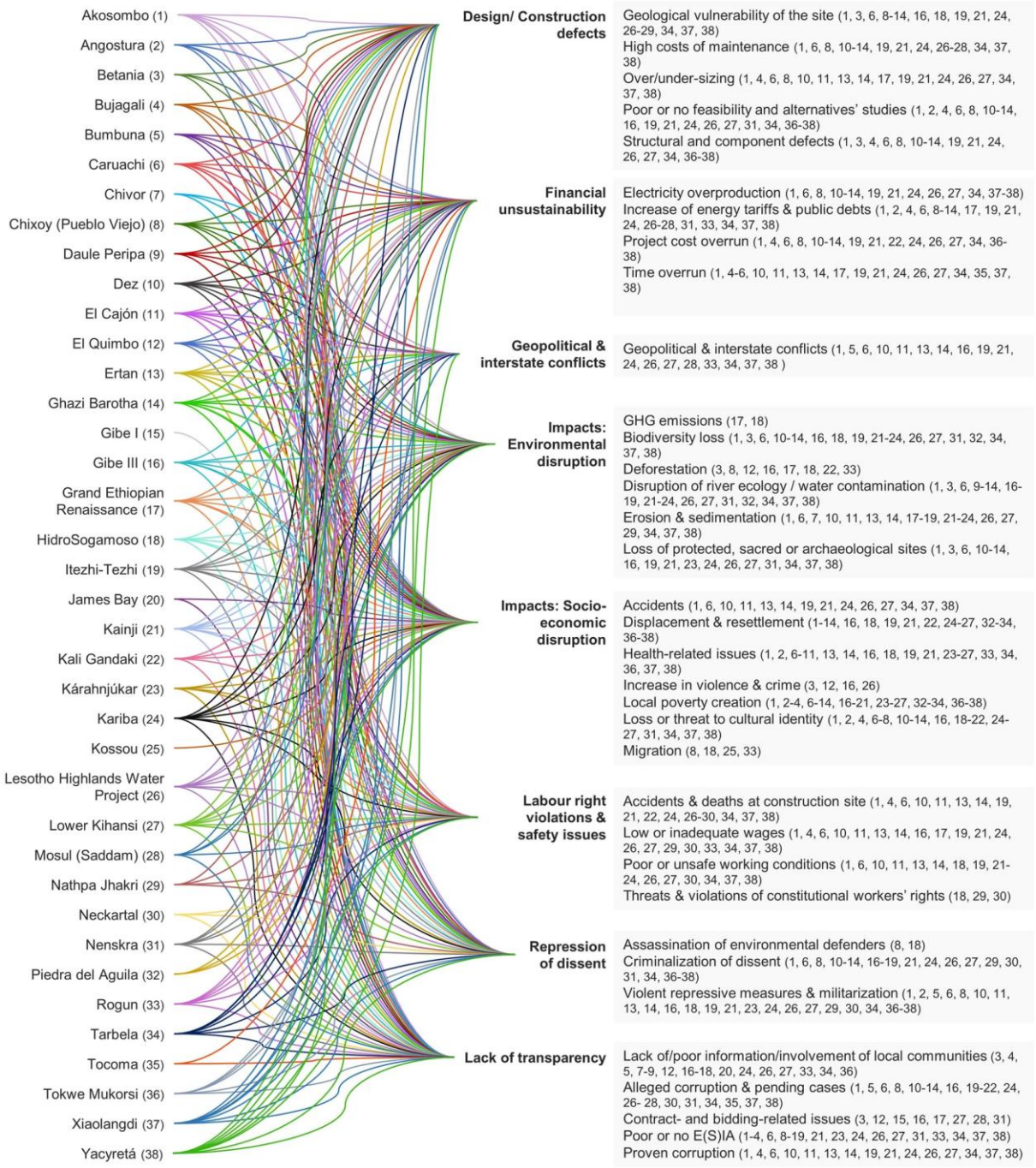

Figure 4.2 Matching cases with categories of unsustainability claims

As Figure 4.2 shows, most dams map onto most broad categories: injustices are multi-faceted, so that one instance rarely occurs within an isolated category. On the right side of the figure, specific dams (identified by a number) are tied to unsustainability claims.

Figure 4.3, on the other hand, shows the geographical distribution of the 38 dams. The figure shows a clear trend: except for Iceland's Kárahnjúkar dam and Canada's James Bay project, all the dams are in the Global South.

Figure 4.3 Geographical distribution of the analyzed cases. Each dot represents a hydropower scheme; the bigger the dot, the higher its generating capacity

While the general overview of Figure 4.2 provides a snapshot of the type of unsustainability claims tied to each dam, and Figure 4.3 shows geographic trends, it is necessary to move to a case-by-case discussion to fully grasp the magnitude of the controversies as stake. Below, I touch upon some of the most emblematic cases from the database, moving through chronological and geographical order.

The Kariba dam on the border between Zambia and Zimbabwe, the oldest project in my database (with construction starting in 1956), is a historical example of forced displacement and of how dams can impoverish communities for decades. The descendants of the 57,000 Tonga people who were forcibly resettled for the construction of the dam still struggle today with hunger, alcoholism, prostitution and smuggling, among other problems (EJAtlas, 2023c; Scudder, 2005). A few years later in Ghana, the Akosombo dam (1961–1965) became notorious not only for its size (being one of the biggest reservoirs in the world), but also for systematic technical failures (e.g., several problems at the turbines), under-performance (e.g., 20 h per week blackouts during the 1994 drought) and downstream erosion (the coasts of neighboring Togo and Benin being lost at the rate of 10 m a year) (Lang et al., 2000). The dam, built to provide electricity to aluminum smelters and thus to boost the country's industrialization,

displaced 80,000 farmers and caused the spread of diseases such as malaria and river blindness (Onchocerciasis; ibid.; EJAtlas, 2023d).

In the 1980s, the company built some of the most controversial dams in the world, such as Chixoy (Guatemala), Mosul (Iraq), and Yacyretá (Argentina-Paraguay). In Guatemala, community members from Rio Negro opposed relocation and sought better compensation for the construction of the Chixoy dam, promoted by the Inter-American Development Bank, the World Bank and assigned to the then named Cogefar-Impresit company. Dam authorities, the army and the paramilitary labeled local Mayan indigenous communities as guerrilleros and perpetrated multiple massacres to curb the alleged anti-state threat. Estimates count about 400 people murdered, and many more tortured and violated, the majority being women and children (facts later known as the Rio Negro massacres; Colajacomo, 1999; EJAtlas, 2022d; Guatemala Human Rights Commission, 2011; Lang et al., 2000). The few survivors had to escape to the hills and live for several years hiding in the woods. This way, the area was evacuated, and the building work could carry on. In 1999, the Comisión para el Esclarecimiento Histórico of Guatemala (promoted by the UN) acknowledged that genocide was perpetrated in Rio Negro. In 2005, the infamous case was brought to the Inter-American Commission of Human Rights. The same decade, the Mosul dam was built in Iraq under the rule of Saddam Hussein. The regime allegedly sought the multipurpose facility for downstream irrigation, flood control, and hydropower. However, in a country at war, the dam was mainly meant for the generation of electricity for war and to prevent the flooding of troops. Since its inception, the dam wall has been at risk of failure for a severe foundation defect, as it stands on a karstification-prone terrain. The dam has required constant maintenance to avoid a collapse that would affect more than six million people downstream (Al-Ansari et al., 2020; EJAtlas, 2022c; Filkins, 2016). The US Corps of Engineers called the Mosul dam “the most dangerous dam in the world” (Filkins, 2016). The transboundary Yacyretá dam between Argentina and Paraguay was called by Argentina's former president Carlos Menem “a monument to corruption” (EJAtlas, 2022j; Lang et al., 2000). Originally budgeted at $2.5 billion, the project's total cost has exceeded $15 billion, while it has operated at a maximum of 60% of capacity (ibid.). Its construction began in 1979, but the floodgates were closed, and the dam was filled for the first time only in 1994, before a detailed environmental and social mitigation plan was in place (ibid.). Meanwhile, thousands of the 50,000 people who were forced to move received no compensation (ibid.).

Researchers also raised concerns around projects built in the ‘90s, a decade where big dam projects started to be heavily criticized by the public opinion. Those years in Asia, the company was contracted for the construction of the Nathpa Jhakri dam in India, Xiaolangdi in China, and

Ghazi Barotha in Pakistan. In the Indian Himalayas, the Nathpa Jhakri dam is located in a flood prone zone. In August 2000, flash floods led to an extensive loss of time and money. To ensure continued support by the World Bank, employees worked round the clock to complete all restoration works to the pre-flood level. In 1999 workers at the plant denounced low wages and unfair working conditions. The mobilization received attention at the national level, also due to the repression measures taken by the police (EJAtlas, 2021a). The Xiaolangdi dam in China led to the eviction of 180,000 people and further impacts on at least 300,000. The reservoir also flooded 100 archeological sites with 10,000 years-old relics (Lang et al., 2000). In the case of the Ghazi Barotha dam in Pakistan, in the late '90 s, the Italian contractor was accused of not respecting an agreement on wage and working conditions with management and security forces physically abusing the workers, and arbitrary detentions of union leaders' relatives. Trade unions denounced the suspension of their rights by the Government of Pakistan under the pressure of the project's contractors (International Labour Organization, 2002). In the case of the Lesotho Highland Water Project and the related construction of the Katse and Mohale dams (1991–1997), the company was directly involved in a corruption case. According to the organization Transparency International, "Impregilo had restructured itself, arguably, in an attempt to avoid prosecution during an investigation. The company sought unsuccessfully to avoid trial by a number of artful arguments about the serving of the summons, the personal liability of employees for actions taken during the course of their employment and the jurisdiction of the court" (Transparency International, 2007): p. 89). Eventually, in 2008, the Lesotho High Court fined Impregilo US$ 2.04 million after it pleaded guilty.

Cases of highly intense socio-environmental conflicts are also reported at the dawn of the XXI century, despite the lull of the sector after the publication of the World Commission of Dams report. In Zimbabwe, fifty years after its first proposal, the Tokwe Mukorsi dam was completed in 2017 (EJAtlas, 2022e). According to Human Rights Watch, construction happened under a veil of corruption, stepping on the human rights of about 20,000 people whose home, land and livelihoods were taken. The Zimbabwe Government used the inexistence of compensatory mechanisms, inadequate food, shelter, sanitation, right to choose residence, misuse of humanitarian aid, coercion, force, harassment, and arrests to manage the development scheme behind the largest dam in the country (Human Rights Watch, 2015). In Ethiopia, besides the Gibe III project, it is worth mentioning the 300% over-sized Grand Ethiopian Renaissance dam, which echoes in the media as it is at the center of a heated dispute with downstream Sudan and Egypt for the control of the flooding of the Nile River (BBC, 2020; EJAtlas, 2023b; Hussein, 2014; International Rivers, 2017, 2014, 2013; Zane, 2020; Zelalem, 2020). In Namibia, workers at the Neckartal dam construction site denounced extremely poor working conditions, abuse and victimization by their Italian supervisors (Namibian Sun, 2015;

New Era Live, 2014; Tjihenuna, 2014). In Colombia, the Hidrosogamoso dam fueled organized protests by local communities. These protests have been systematically and violently repressed by military forces, with communities facing forced displacement, a grab of their sources of livelihood, militarization of the area and misrecognition of the status of affected people (EJAtlas, 2022n; Moreno Socha, 2019; Rios Vivos Colombia, 2021). The El Quimbo project is another highly controversial case in the country, where opponents have faced criminalization. One of the social leaders of the association Asoquimbo has been involved in five lawsuits (in all of which he was found innocent) for his activism against the project. He also denounced Impregilo for illegal practices in the extraction of construction materials (Dussán Calderón, 2024; EJAtlas, 2022a).

4.5 Discussion

In this Chapter, I showed evidence of unsustainability of the dams tied to the Italian construction company WeBuild, generating a counter-reporting exercise grounded in the voices of those who struggle against or denounce the controversies of their projects.

The findings point to a mismatch of narratives. On one side, there is a corporation that has been internationally involved in the construction of large dams in the Global South for decades. The company claims it fully complies with international CSR standards, bringing prosperity to people and environments. On the other side, a radically different picture emerges when inspecting each case through multiple sources. Findings show how some of the major dams tied to Salini Impregilo-WeBuild raise important environmental justice concerns, as they cause socio-ecological conflicts and produce negative social-economic-environmental impacts. The CSR guidelines and standards shown in Table 4.2 appear to be problematic when inspected through the lenses of third sources.

In this context, I question the reliability of existing CSR mechanisms and instruments as a main or only measure of a firm's sustainable behavior. For example, WeBuild's presence on the UN Global Compact website is at odds with reports on violation of human rights and of unjust resettlement which appear throughout the company's works (see Figure 4.2). Similarly, the registrar and classification society DNV GL has accredited Salini Impregilo-WeBuild as complying with ISO 14001 standards (related to minimized environmental impacts). It is unclear whether the DNV GL is simply unaware of the multiple cases of environmental degradation caused by the corporation (as shown, again, in Figure 4.2), or whether the lack of a standardized process to include these kinds of sources allows international societies to look away from such cases. As another example, the company Reconta Ernst & Young SpA, when

auditing Salini Impregilo's 2015a, 2015b sustainability report, concluded that the corporation was in compliance with Global Reporting Initiative standards. However, my results show how the under-reporting of all negative socio-environmental impacts of the corporation's actions is severe, to say the least.

The stark differences between my counter-reporting excercise and apparent compliance with international standards show how if the discussion on sustainability averts considering those voices that are critical of a given development project, sustainability accounting becomes a mere legitimization of business as usual. As such, it becomes an instrument of power through which the company tries to avoid conflict and convince its investors about the good of their actions. In sustainability reports there is no space for acknowledging and responding to critical reporting, and the distinctive character of corporate publications is generally one of reduction of complexity (as in Boiral, 2016, 2013; Hahn and Lulfs, 2014; Talbot and Boiral, 2018). The absence of an independent third-party ensuring fair accountability allows corporations to construct their own version of facts (Laufer, 2003), while the difficulty in building and enforcing international monitoring instruments and mechanisms reinforces the limited liability of TNCs (de Jonge, 2011).

In fact, as the CSR mechanisms adopted by Salini Impregilo-WeBuild are based on self-reporting, there is no room nor any obligation for presenting third-party accounting. Given that the very nature of TNCs is to pursue the growth imperative in a competitive international market, every means becomes essential to meet such imperative, whether it implies looking away from high-level controversies tied to a firm's operations or systematically diverting the discussion toward win–win solutions in its corporate rhetoric. I argue therefore for the necessity of strengthening control over corporate activity beyond their own voluntary initiatives. In this perspective, my concerns also resonate with those of several social and environmental organizations regarding initiatives currently under debate at the European level, such as the Due Diligence Directive that should introduce EU-wide mandatory human rights due diligence requirements for businesses (see for example: EC, 2024). This is an important step in the EU context. However, the lack of binding rules and control mechanisms might jeopardize the effective implementation of human rights and true social and environmental justice.

As political ecologist and environmental justice scholar, I call for a re-politicization of the debate around CS(I)R that can lead governments and international institutions to act upon violations of human rights and EJ principles enshrined in international agreements and national constitutions. These include the unjust burden of socio-environmental impacts, the exclusion of local populations from participation in decision-making regarding their own needs and

desires and the lack of due public hearings and accessible information about the projects. Eventually, they include the recognition of different and differing values, priorities, and languages of valuation of local people from those of a supposed development and progress for all touted by the corporation (Martinez-Alier, 2009, 2003).

In terms of methodology, I showed the potential of counter-reporting and how the EJAtlas database can be a repository of evidence that can further inform corporate analysis. The review process of conflictive cases presented in this article and in the EJAtlas can provide a toolbox to inquire into EJ concerns beyond a single case study approach. In fact, the EJAtlas database contains information on the actors involved in the conflicts, including companies, for each conflictive case. As such, it can be used as a starting point to focus on injustices tied to specific companies. A comparative or statistical political ecology perspective could indeed offer valuable insights to investigate systematic patterns and evidence of irresponsibility and associated corporate discourses, how corporations operate around the globe, how they allocate their investments, and what local responses they face (Llavero-Pasquina et al., 2024; Saes et al., 2021).

My methodology comes with some limitations. First, the large number of cases of environmental conflict does not allow for an in-depth case study approach. Second, for the same reason it would not be feasible to check the legal responsibility of the company for all the claims and concerns that arose around the projects. The fact that the company under scrutiny is a construction company rather than a commissioning body or a plant operator adds complexity to this endeavor, as their formal responsibility is supposedly limited to the building works. Also, I have pointed at the conflictive issues that have arisen around dam projects either before, during, or after construction but that are not featured in any sustainability accounting and are therefore neglected or downplayed. Third, I did not explore why most of the dams in the selected sample are in the Global South. It would be interesting in future research to cover this aspect.

My counter-reporting exercise did not come without labor costs. Collecting trustable information on the hidden realities behind WeBuild's dams has required a consistent amount of work. This brings to the reflection that it is hard for environmental defenders to challenge TNCs without the support of allies who have the capacity to invest time and dedication efforts for the cause. Here, academia may play a role. I suggest that scientists should use their own privileged position to practice scholar-activism (Bashiri, 2023; Borras Jr. and Franco, 2023) to unveil the power relations between different actors involved in CS(I)R accounting practices and of highlighting the incommensurable values people hold in connection to their territories

and cultural systems. Such a kind of scholarship shifts the role of scientists from one of truth-making to one of revealing the unavoidable complexity and plurality of the world[6]. My suggestion is that, when facing evidence of socio-environmental conflicts and injustices and while trying to quantify or measure CS(I)R, academia's focus in discussing CS(I)R in the context of development projects should be placed in amplifying the voices of those who are on the ground, by mobilizing knowledge that is co-produced between academia, environmental activists and defenders (Temper and Del Bene, 2016; Conde and Walter, 2022). While I recognize that scientists themselves are also part of a complex web of power relations, a push in this direction could be given by spending time and resources to amplify the voices of those who have less power, engaging with those affected by environmental injustices on the ground and using diverse channels to problematize the way companies account for sustainability.

In alignment with my commitment to creating impact beyond academia, I pursued a dual strategy. Initially, I disseminated my findings to the activists who had provided sensitive information for my dataset. Subsequently, I engaged with Italian media outlets, recognizing that while WeBuild's operations span globally, their reputation and capital remain largely anchored in their home country. Although most journalists approached exhibited reluctance to cover my research, I successfully secured an interview with a magazine (Cegna, 2022). Additionally, one of my co-authors established contact with the Business and Human Rights Resource Center, an organization of researchers dedicated to advancing human rights, corporate accountability, and transparency in business (www.business-humanrights.org). The Center extended a public invitation to WeBuild to respond to our article published in the Journal of Business Ethics. The company subsequently addressed our research through the NGO's platform, expressing "perplexity over the article, fully challenging its content, methodology and results" (B&HRRC, 2021). We addressed their criticisms in a formal rejoinder (B&HRRC, 2022). These exchanges garnered attention from an activist affiliated with a movement opposing the controversial Strait of Messina Bridge project contracted to WeBuild (WeBuild, 2025). This connection facilitated further engagement with journalists and activists monitoring WeBuild's construction sites throughout Italy. Currently, we are working to establish strategic alliances for a coordinated campaign. These experiences have demonstrated the critical importance of strategic knowledge dissemination beyond academic circles, revealing both the challenges and opportunities inherent in translating scholarly research into meaningful social action. Through persistent engagement with media, activists, and advocacy organizations, I have witnessed how academic research can catalyze broader discussions on corporate

[6] See the take on post-normal science in the published version of the Chapter in the Journal of Business Ethics (Bontempi et al., 2023a)

accountability, despite institutional resistance. These experiences taught me both the critical importance and inherent challenges of translating scholarly research into meaningful social action. I struggled to reconcile the different priorities and timelines of scholarly and activist agendas, while encountering frustrating reluctance from Italian mainstream media to cover my research findings. Despite these complexities, I discovered that meaningful engagement beyond academic circles ultimately strengthens both the scholarly foundation of activists' claims and the real-world relevance of academic research.

5 Regulating within the State: on the role of environmental laws and land use plans in Yucatan's renewable energy conflicts

Disclaimer: An adapted version of this Chapter has been published in the Journal *Geoforum* (Bontempi et al., 2025). The published work resulted from collaboration with other critical scholars, where I led the whole research process (including conceptualization, data collection, curation, analysis, validation, methodological design, visualizations, writing, review, and editing). Although the published article represents our collective work, this Chapter includes my own edits. Therefore, I use first-person singular pronouns (I/me/my) throughout, as this version differs from the one that I discussed with my co-contributors. The full reference and the original Abstract of the paper reads as follows.

Bontempi, **A**., Reyes Maturano, I., Sánchez Arceo, J., and Patiño Díaz, Rodrigo T. (2025) *Defending the territory by the rules: The role of environmental law in Yucatan's renewable energy conflicts*, Geoforum, 161, https://doi.org/10.1016/j.geoforum.2025.104243

Abstract: To what extent do environmental laws and policies aid in the pursuit of territorial defense and environmental justice? This article contributes to ongoing discussions on the environmental justice implications of existing institutions mobilized in the context of extractivism. It focuses on the legislative and policy frameworks and instruments influencing the development of industrial-scale renewable energy projects in the Mexican State of Yucatan. Through the analysis of nine environmental conflicts related to wind and solar parks in the region, we problematize the role of environmental laws and policies in governing Yucatan's renewable energy deployment as *double-edged swords*, disproportionately disadvantaging those defending their own territories. Controversial projects are frequently legitimized by the law, yet the procedures that authorities and developers follow are tendentially flawed. At the same time, local and Indigenous communities, along with environmental defenders, face limited access to legal recourse. We frame this analysis within critical environmental justice debates and explore how a fairer allocation of institutional power to local authorities, peoples and Indigenous communities could address environmental injustice in Yucatan.

5.1 Introduction

“It is clear that without environmental rule of law, development cannot be sustainable”. With these words, the former Acting Executive Director of the United Nations Environment, Joyce Msuya, opens the First Global Report on Environmental Rule of Law (UNEP, 2019, vii). While the report highlights the exponential growth of environmental laws, regulations and policies implemented globally in the last half-century, it also emphasizes the need for significant efforts to ensure their effectiveness.

Indeed, if environmental laws are growing at an exponential pace, I have previously explained how there is simultaneous ecosystem degradation and environmental injustices which are increasingly manifesting. The question of why a growing assortment of environmental protection laws and policy instruments cannot fully tackle environmental injustices in the context of controversial development projects has no straightforward answers. For instance, while environmental justice organizations and environmental defenders often pursue litigation as a mobilization strategy in their struggles, they may also get criminalized for their actions (Scheidel et al., 2020). Meanwhile, legal frameworks are found to be used either to block or to benefit controversial development projects (Bocanegra Acosta & Carvajal Martínez, 2019; Espinoza Hernández, 2019).

In the previous Chapter, I argued how relying on business self-regulation mechanisms is unlikely to build EJ. This Chapter aims to nurture the discussion about the limits of pursuing EJ struggles within the State apparatus, particularly through existing legal frameworks and instruments. Particularly, it inquires how the latter support or hinder environmental defenders’ struggles. Specific questions I aim to address are: (i) Do environmental authorities apply the law in favor of EJ? and (ii) To what extent do legal and policy frameworks support the protests of environmental defenders, as well as local and Indigenous communities in their struggles against industrial-scale development projects?

As a result of fieldwork, interviews with local key stakeholders, literature review and collaboration with local grassroot organizations and activists, this article takes the case of renewable energy (RE) conflicts within the Mexican State of Yucatan as study ground. Yucatan is a suitable geography to understand the complexities of the nexus between the rule of law, environmental justice and sustainability. Here, the use of the territory is regulated at different levels by a wide range of environmental laws and policies. At the same time, RE schemes are vastly and conflictingly consuming and privatizing land to the benefit of private firms and at the expense of local and Indigenous communities (Avila et al., 2022; Barragán Contreras, 2022;

Flores and Deniau, 2019; Sánchez et al., 2019; Torres-Mazuera et al., 2021). As global RE deployment is on the rise (IEA, 2024), such developments are not exempt from conflict, controversy and injustices (Levenda et al., 2021; Scheidel and Sorman, 2012; Sovacool et al., 2021; Temper et al., 2020; Zografos and Robbins, 2020). This case contributes to deepening the understanding of the drivers behind such problematic trends.

My findings suggest that uneven access to the legal and policy spheres leaves much of the power in the hands of public administrations and corporate powers, who often engage in more 'formal' business partnerships, therefore marginalizing less 'formal' critical voices that oppose projects implemented in their territories. Notwithstanding related challenges, I discuss the limits and possibilities of pursuing those required institutional reforms for Yucatan's rule of law to become a better-suited foundation from where environmental justice can be built.

5.2 Background

5.2.1 Environmental rule of law versus environmental justice

Concepts such as *environmental rule of law* may elicit the idea that more institutions, laws, regulations, policies and juridic instruments are needed to guarantee healthy ecosystems and communities (McManus, 2020; UNEP, 2024). However, environmental rule of law is not necessarily the same as environmental justice. Whereas environmental justice refers to historical and current social movements, as well as the conceptual frameworks and policies they have informed, environmental legal frames and institutions are a component of procedural issues within the scope of environmental justice (Kuehn, 2000; Schlosberg, 2007). Yet again, the question of who can access and benefit from environmental institutions remains open.

Academic work at the nexus between jurisprudence and environmental conflicts studies suggests that environmental laws and policies can be "double-edged swords" (Chiaramonte, 2020: 948) for environmental defenders: i.e. they can end up working in their favor or curtailing their efforts. On one hand, scholars discuss the potential of legal frameworks and instruments to advance environmental stewardship that is also socially just. For instance, after studying the role of popular consultations established by Colombian Constitutional law in mining conflicts, Bocanegra Acosta and Carvajal Martínez (2019) conclude that these legal frameworks and instruments may be effective means to question the extractive model. Similarly, Richardson and Mcneish (2021) put forward how activism against extractivism may be facilitated by nature's rights court rulings. Litigation is also argued to be a positive strategy for environmental

movements, regardless of the (un)success rate of the legal action (Aquino-Centeno, 2021; Skjævestad, 2010; Vanhala, 2012).

On the other hand, other authors point out how environmental laws and policies do not necessarily work in favor of vulnerable or marginalized actors and may even help legitimize or facilitate speculation by industries of various natures. In this context, some argue about how national and international legal architectures promote extractivism, fuel conflict or perpetuate environmental injustices (Galligan, 2021; González-Serrano et al., 2021; Guzmán Solano, 2016; Vélez-Torres, 2014). The literature that analyses the judicialization of struggles against extractivism and controversial development projects has also shown the uncertain outcomes of such a strategy. Various authors have discussed the limits of litigation for environmental defenders, in terms of social and environmental gains and losses along the judicial course, both theoretically and empirically (Albiston, 2011; Conde et al., 2023; Medici-Colombo and Ricarte, 2024; Pigrau, 2014). The role of the judiciary power (courts and judges) in favoring or hindering impacted communities and environmental defenders' struggles has been an object of problematization too. For instance, Bertenthal (2018) explores the limits in making sense of EJ in court opinions in the US. Braconnier de León (2021) investigates how progressive courts suffered backlash from extractivist elites when mobilizing law in favor of Indigenous communities in Guatemala, or yet another example where Rao et al. (2023) discuss the potential and limits of India's National Green Tribunal.

Other authors problematize how legal and policy-making processes may take ground to political ones (Dressel, 2010; Hirschl, 2009; Kramarz et al., 2017; Vallinder, 1994). These studies point to a need for building more mechanisms for a re-politicization in law and policymaking.

With a few exceptions (Chiaramonte, 2020; Conde et al., 2023; Guzmán Solano, 2016; Montoya et al., 2021), the above-mentioned body of works does not frame the analysis specifically within critical theoretical debates over extractivism or EJ. Most of these authors do speak about *extractivism* or *justice*, but while the former is often referring to the practice of industrial extraction of raw materials from the ground, the latter is commonly understood as the one achievable in the institutional-judiciary realms.

5.2.2 The role of laws and policies in energy justice struggles in Mexico

Several scholars that work on matters of RE extractivism addressing the question of how energy systems disproportionally affect most vulnerable populations have based their research

in Mexico (see e.g. Avila et al., 2022; Baker, 2016; Boyer, 2019; Post, 2022, 2023; Silber Coats, 2017; Tornel, 2023b). Among such rich academic production, the role of existing laws and policies in tackling environmental injustice has also been studied. For instance, Dunlap (2018, 2020) elaborates a critique of Free and Prior Informed Consent mechanisms and includes them in a list of “soft mechanisms” for a “social engineering of extraction” in the context of wind energy development. Or again, the critical jurist and activist-lawyer Espinoza Hernández (2019) explains how recent institutional and juridical reforms in the environmental realm in Mexico have favored the commodification of its territories.

Among the authors focusing on Yucatan, both Escalante Kantún (2021) and Barragán-Contreras (2022, 2023) take large-scale RE developments in Yucatan as case studies to discuss EJ in the region. The former frames EJ in procedural, distribution and recognition terms, the latter employs a decolonial EJ framework. They both touch upon policy and legislation regulating the construction of conflictive solar and wind parks. Both propose a series of recommendations to policymakers and park developers. Similarly, other authors who study legal and policy instruments regulating Yucatan's renewable energy developments without framing their analysis on EJ or extractivism (see e.g. Encalada Gómez, 2019; Kim, 2018; Rousseau, 2020; Zárate-Toledo et al., 2021; Zárate-Toledo & Fraga, 2016) conclude that much work is needed to improve such mechanisms, warranting the need to inquire further on the limitations of legal and policy instruments in EJ terms.

5.2.3 Yucatan’s renewable energy conflicts

The region of analysis is in Southeast Mexico, on the tip of the Yucatan peninsula (Figure 6.1). The state of Yucatan is characterized by a predominantly karstic, flat land of 39’524 square kilometers (INEGI, 2017), mostly under social land-tenure (known as *ejidos*), with a 73% of forest cover as of 2020 (Global Forest Watch, 2024), 245 kilometers of coast facing the Gulf of Mexico (Pech Pool, 2010), and a system of underground caves filled with freshwater and beautiful exposed sinkholes known as *cenotes* (Schmitter-Soto et al., 2002). Approximately 42% of its 2,3 million people are concentrated in the municipal district of Mérida, where the capital city is settled, while the rest of the settlements are scattered across 105 other municipalities (INEGI, 2021). More than 65% of the total population self-identifies as indigenous and 23,7% speaks the Maya language (INEGI, 2015, 2020).

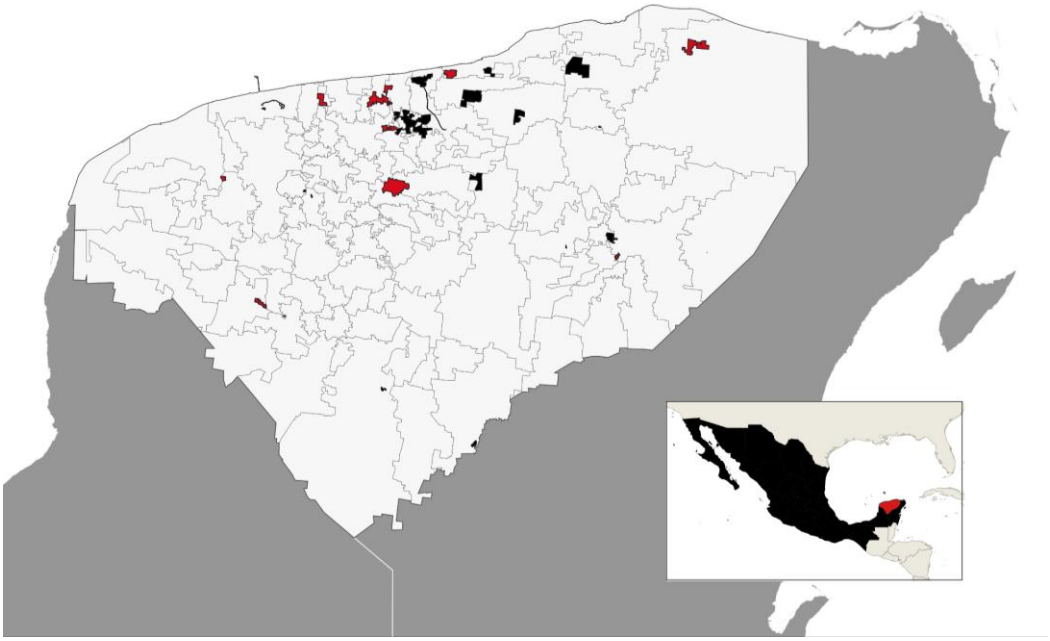

Figure 5.1 Administrative map of the State of Yucatan and its 106 municipal districts. The RE projects either operating or planned are identified as colored areas. Among these, those included in my analysis are identified in red color (own elaboration from GeoComunes' (2023) and INEGI's (2016) data).

This region of the Yucatan peninsula is characterized by strong winds and high solar irradiance, thus a high potential for RE production (Sánchez et al., 2019). The Federal Government of Mexico crystallized the plan to rapidly take advantage of such potential through an energy reform which was decreed in 2013 and culminated with the Energy Transition Law of 2015 along with a related series of laws, policies and land use planning instruments (ibid.; Articulación Yucatán, n.d.1). While the reform was carried out without involving social actors from the territory, the RE development model promoted in this context is characterized by the concentration of the property and management rights of large-scale wind and solar parks in the hands of private capitals under a competitive regime, also through long-term auctions (CENACE, 2015). As a result, it is estimated that 29 large-scale RE developments of private (and mostly foreign) investors have been planned in the State of Yucatan in less than a decade for a total installed capacity of approximately 1'835 MW for wind projects and 671 MW for photovoltaic projects, although only five parks have begun operations (Zárate-Toledo et al., 2021).

In such panorama, civil society organizations, local and Indigenous community members, activists, and academics, among others, have publicly contested the energy reform and single projects as problematic both in terms of social and environmental implications or as undesired development models. The protests consider potential major environmental impacts such as deforestation, damages to the karstic geology and aquifers, or the disruption of birds' migratory

routes; but also how the installation of windmills and solar panels negatively impact the biocultural practices, social fabric, traditional ways of life and subsistence economy of local Mayan communities (Sánchez et al., 2019). From a broader perspective, critics argue that such social and environmental burdens are born by local inhabitants which benefit the multinational corporations and produce electricity that is largely used to source the big cities and industries of the region (including Cancun) but not directly to satisfy the needs of the local population (ibid.). In such an understanding, RE parks relate to larger-scale profit-driven development plans for the region, including the expansion of mass tourism and agro-industries, as well as the Tren Maya developmental project (Espadas Manrique et al., 2020; Flores and Deniau, 2019; García de Fuentes, 2019; Greenpeace, 2020; Martínez Romero et al., 2023; Polanco Rodríguez and Beilin, 2019).

5.2.4 Laws and policies for renewable energy development in Yucatan

The law requires RE projects to be approved by environmental authorities. Promoting companies need to produce paperwork and follow specific procedures to obtain permits to construct on, or to use a specific piece of land. Meanwhile, authorities must grant that a development project is socio-environmentally viable and in agreement with actors from civil society and impacted communities.

Figure 5.2 provides a simplified overview of the relations between major actors, laws and regulations, compulsory bureaucratic procedures and territorial planning instruments at stake in Yucatan's industrial scale RE development.

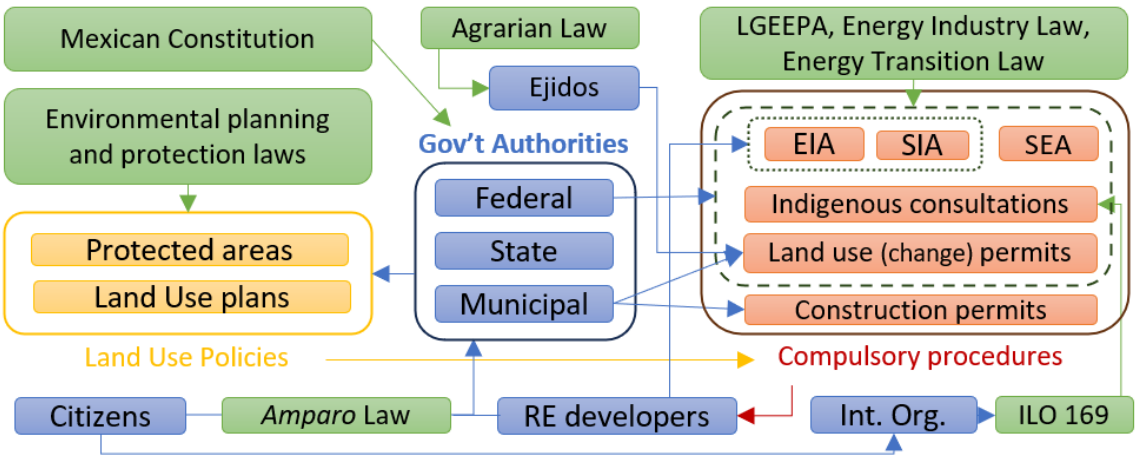

Figure 5.2 Mind map of the relations between laws (green), actors (blue), policies (yellow) and the bureaucratic procedures (red) that are governing industrial scale RE development in Yucatan. Arrows indicate a certain degree of influence of one element over another.

The Mexican Constitution attributes authority at three governmental levels: National (the Federal government), regional (Yucatan State), and local (municipality). Each level is attributed to certain powers over the territory of Yucatan. Such powers are unevenly allocated across levels.

The federal government maintains a privileged position, holding legislative powers and, at the same time, preserving the right (and responsibility) to control key procedures that RE developers should follow to build and operate a plant. First, developers attain a permission to produce energy by the Federal Energy Regulatory Commission (CRE). Then, through its Environment and Natural Resource Ministry (SEMARNAT: *Secretaría de Ambiente y Recursos Naturales*), the federal government receives and evaluates the Environmental Impact Assessment (EIA), a paper that is regulated by the General Law of Ecological Balance and Environmental Protection of 1988 (LGEEPA: *Ley General del Equilibrio Ecológico y la Protección al Medio Ambiente*). Second, this latter law and related regulations also establish that the SEMARNAT has jurisdiction over the land use change of forests and coastal areas (up to 100 km inland). Third, as ruled by the Energy Industry Law of 2014 (*Ley de la Industria Eléctrica*), the Ministry of Energy (SENER: *Secretaría de Energía*) should emit a revision over a Social Impact Assessment (SIA), to be produced by the developer. Through this revision, it is possible to identify if Indigenous communities are potentially affected, and SENER oversees conducting an Indigenous consultation. The latter is a measure introduced to comply with the International Labour Organization (ILO) Convention 169 of 1989 and, more broadly, to respond to international pressure over the recognition of Indigenous rights (Rousseau, 2020). Fourth, Article 19-VIII/a of the Energy Transition Law establishes that SEMARNAT should perform a Strategic Environmental Assessment (SEA) for regions with a large potential for RE developments. A SEA is defined as a “regional-scale assessment to determine the relevant characteristics of the ecosystems potentially affected by the projects, the related potential environmental impacts, aimed at dictating the prevention and control measures to which project developers must adhere” (Energy Transition Law, 2015).

Other Federal environmental authorities that branch off SEMARNAT are constituted and given a budget to address environmental issues. For instance, the Federal Attorney General's Office for Environmental Protection (PROFEPA) holds the role of surveilling the implementation of and compliance with Federal environmental legislation, including a mechanism to address public environmental denunciations. Also, some national commissions are formed to promote good management of specific environmental assets, such as: the ones for the Knowledge and Use of Biodiversity (CONABIO), for Natural Protected Areas (CONANP), for Forestry (CONAFOR) and for Water (CONAGUA).

On another environmental governance level, the Yucatan State does not always have direct jurisdiction over the region's land and its resources, unless the federal government convenes to cede their faculties for coordination purposes. Nevertheless, the government of Yucatan also articulates into environmental authorities and regulations. Municipalities have a certain power over their territory: Article 115 of the Mexican Constitution confers to the municipalities the power to regulate land planning and grant land use, as well as the construction permits within their jurisdiction. During this process, RE developers must hire and pay consultants to develop social and environmental assessments, as well as for all licenses and permits, and ultimately for the land occupation of a given project.

Likewise, a series of other land use and planning policies based on environmental laws are in place to provide guidance and directives about the development of the territory. Particularly, the so-called Ecological Land Use Plans (*Ordenamientos Ecológicos del Territorio*; Gobierno de México, 2021), Protected Areas and Urban Land Use Plans are notorious in these terms. The former are introduced in LGEEPA as an “instrument whose purpose is to regulate or induce land use and productive activities, to achieve environmental protection and the preservation and sustainable use of natural resources [...]” (art. 3o-XXIV, 1988). They are conceived to be either national, marine, regional, or local. National and marine plans are designed by SEMARNAT. The others are at state and municipal levels, respectively. In Yucatan, there are two regional *ordenamientos*: one concerning the entirety of the state, the POETY (*Programa de Ordenamiento Ecológico Territorial del Estado de Yucatán*); plus, another targeting the coast only, the POETCY (*Programa de Ordenamiento Ecológico del Territorio Costero del Estado de Yucatán*). Concerning the protected areas, in Yucatan, there are some managed by the federal government and others by the Yucatan state; municipalities are also legally able to designate their own. Finally, Urban Land Use Plans establish zoning and land use planning for the territory of a given municipality.

While administrations create laws and policies with which RE developers are expected to comply, citizens and Indigenous communities in Yucatan have only two avenues to influence the decision-making process outside of electing political representatives. The first is through public consultations, which may occur as part of the EIA: the local population can request SEMARNAT to hold public information or consultation meetings before a project is authorized. The second avenue, as previously mentioned, involves Indigenous consultations mandated by SENER to “to take into account the interests and rights of communities” (Art. 119 of Energy Industry Law). Additionally, authorities are expected to engage interested non-governmental actors (from the private sector, civil society, and local communities) during the design of

Ecological Land Use Plans. In theory, also the SEA should consider public participation during its process.

Other instruments are provided to non-governmental actors to litigate authorities' rulings, including public denunciations, complaints, and civil and collective actions. Among legal mechanisms, the Protection Law of 2013 (*Ley de Amparo*) has gained relevance. As a regulation of Articles 103 and 107 of the Mexican Constitution, this law guarantees the right to pursue a lawsuit against any authority or individual when their acts or omissions violate the human rights recognized as the protections granted by the Mexican Constitution, as well as by the international treaties to which the Mexican State is a party (Article 1).

Finally, another influential entity in determining territorial use in Mexico are the so-called ejidos. Established as a result of the Mexican Revolution, the Agrarian Law of 1915, recognizes and regulates ejidos as a form of social land tenure. This framework also outlines the authority of landholders and establishes Agrarian Tribunals to resolve legal disputes concerning ejidal territories (Ortiz Yam, 2014; Torres-Mazuera and Appendini, 2020; Tribunales Agrarios, 2021). Unlike private property regimes, decisions regarding ejido land are, at least theoretically, made collectively by a community of landholders through assemblies. When RE developers seek to build on ejido land, a land use change must first be approved by the ejido assembly, after which the decision is reviewed and finalized by the federal government.

5.3 Methodology

I base the discussion on the analysis of environmental conflicts related to the nine industrial-scale solar and wind parks detailed in Table 5.1, selected among the complete list of 29 large-scale RE developments that the federal government of Mexico planned since 2014 within the State of Yucatan (Zárate-Toledo et al., 2021). The selection was based on two main criteria: (i) the project led to a certain degree of conflict (i.e. when explicit claims were made against a development by specific actors because of social or environmental concerns); (ii) sufficient information was available for the case.

During a research stay at the CINVESTAV Unit of Merida, I conducted both fieldwork in Yucatan visiting specific sites and communities where conflicting RE projects are impacting, and (between September 2022 and March 2024) 29 semi-structured interviews with diverse social actors involved in environmental governance and conflicts within the Yucatan State. The selection of interviewees is based on my knowledge and networking capacity. Particularly, I

relied on the collaboration with the collective of local activist scholars Articulación Yucatán[7], who formed in 2016 as a critical think tank in response to the rapidly evolving large-scale RE development plans in the region. Aiming to cover a wide diversity of sociopolitical positions that could shed light on the complexities of the issues, I interviewed representatives of federal, state, and municipal governments, affected communities, grassroots organizations, and international intergovernmental organizations. Given the sensitive social context of environmental conflicts that often lead to additional vulnerability to local defenders, I decided to anonymize the various testimonies. Finally, where applicable, secondary data review (relevant grey and peer-reviewed literature, and official paperwork) complements fieldwork and the dedicated interviews.

Conflict Case		MW	Ha	Municipalities
1	Cansahcab wind parks	250	7’541	Cansahcab
2	Chicxulub wind park	71	1’157	Motul, Ixil
3	Dzilam Bravo wind park	70	1’300	Dzilam de Bravo
4	Kimbilá wind park	159	4’940	Hoctún
5	Oxcum-Umán solar park	155	300	Umán
6	Sinanché I & II wind parks	151	3’222	Sinanché, Telchac Pueblo
7	Ticul A/B solar parks	310	738	Muna
8	Tizimín wind parks	162*	4’075*	Tizimín
9	Yucatán Solar park	70	255	Valladolid

* Of which 76 MW, 2247 Ha for the ampliation of the park in a second stage

Table 5.1 List of cases of environmental conflicts included in the analysis

The diversity in terms of nature of data was then treated through triangulation of both sources and authors' perspectives, as explained in Carter et al. (2014). Through discussions I systematically organized the interpreted information into the matrix that is included in the Appendix.

Concerning my positionality: I stand with those communities and activists who are on the frontline contesting the construction of top-down planned RE parks, and who too often see their livelihoods, traditional ways of life and social fabric disrupted because of foreign private

[7] https://articulacionyucatan.wordpress.com/

interests. I am aware that my privileged position being scholar who get merit for knowledge from frontline communities is at risk of epistemic extractivism (Grosfoguel, 2016). To address concerns of epistemological injustice in academia, during the review processes, drafts of this article have been shared with those environmental defenders whose knowledge was of key importance in building my understanding, to keep their concerns at the front and gather their feedback. In this sense, my research aim and process refer to the theory and strives to respond to the principles of scholar-activism in co-producing knowledge for environmental justice in alliance with activists and impacted communities (Conde and Walter, 2022; Weber et al., 2024).

5.4 Findings

5.4.1 Bound environmental authorities, flawed bureaucratic procedures and barriers to participation

“Look”, says a responsible from SEMARNAT in Merida while indicating a shelf full of ring binders stuffed with papers. “These are all EIAs to evaluate. Just mine. This is what is killing me these days”. They were lamenting the lack of human resources to handle a growing flow of paperwork. However, these EIAs were related to other development projects rather than the solar and wind parks considered in my analysis. “Most of those, with the exception of the wind park in Dzilam, were evaluated in Mexico City’s offices”. When speaking about large scale renewables, this fact is corroborated in another interview with a responsible from PROFEPA: “they [the central offices in Mexico City] won’t even let you look at the file”.

The fact that the Merida-based offices of Federal environmental authorities cannot have a say to large-scale projects in Yucatan is significant, as this implies that those governmental actors who hold better knowledge of the problems of the territory and are in closer contact with its actors are excluded from decision-making. But this is not the only concern that raises questions about the impact assessment procedures. On top of this, permits for the construction and operation of controversial wind and solar parks are issued despite serious legal shortcomings. Flaws in the issued paperwork and due procedures suggest that authorities do not necessarily comply with their own rules. Figure 5.3 reports a selection of recurrent major problems that relate to the approved impact assessments and the consultation processes, where applicable.

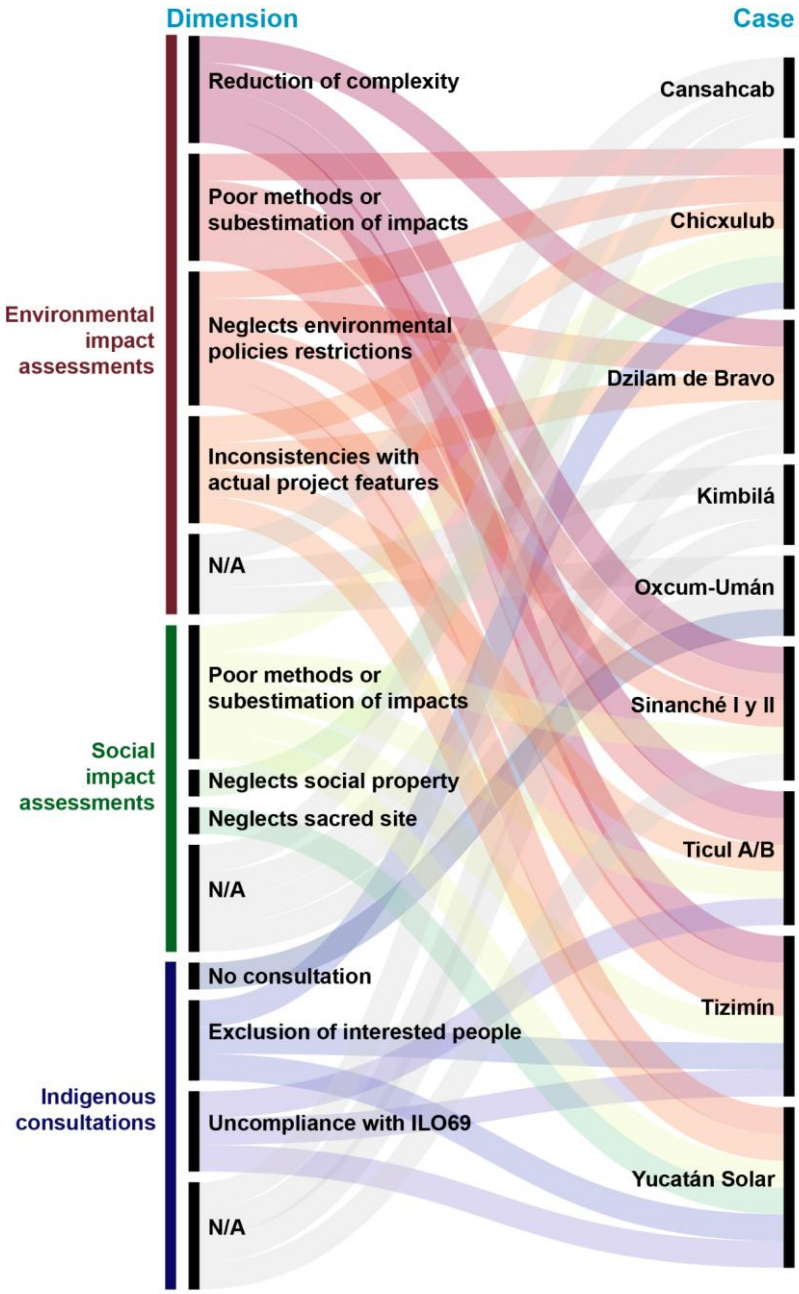

Figure 5.3 Recurrent shortcomings of impact assessments and consultation processes for the analyzed RE parks (see Appendix for more detailed information and sources)

First, no SEA was performed by SEMARNAT for the Yucatan region, despite the obligation set by Article 19-VIII/a of the Energy Transition Law (Articulación Yucatán, n.d.2).

Second, EIAs are approved despite several shortcomings. Zárate-Toledo et al. (2021) previously studied the deficiencies of approved EIAs related to four wind projects on my list: Tizimín, Dzilam de Bravo, Chicxulub, and Sinanché. Similar shortcomings are denounced in the EIAs connected with other three solar parks: Ticul A/B (EJAtlas, 2022q; interview with activist-lawyer), Yucatán Solar (EJAtlas, 2022r; interview with local activists) and Oxcum-Umán (Oliver Quintal, 2020; interview with responsible of Umán's municipal administration).

Particularly, major deficiencies relate to the fragmented definition of the area of influence of the projects; the absence of an evaluation of cumulative, residual, or synergistic impacts; poor impact evaluation methodologies; problems with long-term monitoring of impacts; and conflicts with existing environmental regulations and policies. For instance, policy restrictions that are not accounted for in the EIAs often include the ones imposed by ecological land use plans of the Yucatan State (the POETY and the POETCY) and by the presence of protected areas, as in the cases of the wind parks near the coast where conservation activities are mainly indicated (Dzilam Bravo, Tizimín, Chicxulub and Sinanché I/II). Generally, evaluations are characterized by simplification of the complexity and lack of critical considerations. In this regard, the case of Ticul A/B solar and Tizimin wind parks are each indicative of fragmentation of one single project into two projects that are intended to be analyzed individually, to avoid cumulative and synergistic impacts. For all parks, environmental defenders, activist scholars or grassroots organizations to formally submit critical observations to SEMARNAT denouncing social and environmental risks (Articulación Yucatán, 2019, 2020). However, in no case were these claims taken into consideration.

SIAs are not exempt from problems, either. For six conflict cases for which SIAs could be retrieved, severe shortcomings emerge. A common major problem is that SENER uses arbitrary criteria for the identification of areas of influence and related impacted communities (Barragán Contreras, 2022; EJAtlas, 2022s, 2022r, 2021e; interview with activist-lawyer). As a result, significant parts of the local population are excluded from both the impact evaluation and subsequent consultation processes. Another problem identified in the cases of Ticul A/B and Sinanché I/II is the poor design of preventive and compensatory measures, which contrast serious socio-ecological impacts with inadequate monetary compensations or minor interventions in the impacted settlements (Barragán-Contreras, 2023; Fuentes López, 2020; Múuch' Xíinbal, n.d.; interview with activist-lawyer).

Nevertheless, in three cases within my sample, the impact assessments did not move forward. I find that this may also be a result of strong opposition to the project. In the case of Oxcum-Umán, SEMARNAT also withheld permission for the solar park after press conferences and a denouncing letter was signed by indigenous, citizen, academic and social organizations (De los Ríos Ibarra, 2020; La Jornada Maya, 2019). In the cases of Kimbilá and Cansahcab, the impact assessments were not submitted also because the developers did not find consensus within local communities from the beginning (interviews with local activists; Yucatán Ahora, 2020).

However, the exclusion of major parts of impacted communities from Indigenous consultation processes is reported in the four projects where the process was implemented by SENER: Chicxulub (interview with local community leader), Tizimín (EJAtlas, 2021e), Ticul A/B (EJAtlas, 2022q, interview with activist-lawyer) and Yucatán Solar (EJAtlas, 2022r; interview with local activists). Generally, when Indigenous and public consultations are organized, they are found to violate ILO 169 Convention standards, are hastily handled, or roughly managed (EJAtlas, 2022q, 2022r, 2021e; interviews with activist-lawyers). Extended bribery for gaining consent within local communities in the consultation is reported in the case of Ticul A/B project (interview with an activist-lawyer).

Land use plans are not exempt from controversies either. The case of the reform to the POETCY is infamously emblematic. The instrument had originally been designed through participatory processes, including eleven on-site public workshops amongst local academics, authorities, and citizens that led to its enactment in 2007. The enforcement of specific restrictions on environmental and land use conflicted with the interests of developers of large-scale projects, including RE, who started to put pressure on the State government to reform the zoning instruments. A group of academics from a well-known national university was appointed as coordinator of second reform process, despite being new to the region. The so-called periods of public consultation excluded many interested parties and local actors, including scholars who had helped design the original land plan, a good part of the rural population, and grassroots movements (interview with an activist scholar who participated in the process). As a result, the interests of the private sector are largely reflected a first reform of the instrument (EJAtlas, 2021f; Encalada Gómez, 2019; López Fernández et al., 2016; Zárate-Toledo and Fraga, 2016; interview with a representative of Valladolid's municipal administration).

Several problems are also recurrent in the management of RE parks from the Municipal administrations. First, bureaucratic transparency is lacking, as land use and construction permits are not published anywhere once issued, nor are there institutional mechanisms in place for anyone to retrieve such important documents *a posteriori*. Second, a multifaceted lack of capacity of the Municipality to face administrative, technical, and juridical challenges is recurrent in my interviews with different kinds of actors, including local activists, representatives from Municipal governments, from the Yucatan State and Federal environmental authorities. An inadequately allocated budget, the administrative personnel's lack of expertise in environmental and jurisprudence domains, and the administrative discontinuity caused by short 3-year political mandates are identified as major shortcomings

that disempower the capacity of municipal governments. Disheartened, an interviewee from Valladolid's municipal government shares:

> *"*[An *ordenamiento*] costs us a million pesos, or more. For the work it requires: documentation, research, surveys, socialization, dissemination, public consultations [...] And then, well, there is a lack of a water pump there, for a community that does not have the human right to sanitation and water. But it also has the right to a healthy environment. Which one do I prioritize? There may be a will, but there are also priorities…"

Third, corruption and bribery are recognized by most of my interviewees as a major issue at the municipal level. For instance, a former representative from the Dzilam de Bravo's municipal administration reports the falsification of the balance sheets to the benefit of the Mayor at the time of the approval of the homonymous wind park:

> "As they were 15 private plots of land… It was about 40'000 pesos, as they pay for land use. The president kept it all [...] that was not reported in accounting"

5.4.2 Litigation: reacting on legal grounds comes with high costs

If impacted communities have no or limited space in the design of policy and legislation or the decision-making process, they have a chance to resist undesired RE projects by reactively appealing to the judicial power. The cases I highlight indicate that litigation can, in certain instances, work in their favor; however, these outcomes often come with relatively high costs.

In some of the analyzed cases, impacted communities followed legal procedures to contest the RE parks and reclaim their rights. Ixil's community members appealed to the Agrarian Tribunal to invalidate forged assembly minutes that were recorded in the National Agrarian Register by an individual in the attempt to falsely certify that there was consensus to sell communal land to Chicxulub wind park developers (EJAtlas, 2022s). Meanwhile, the Yucatan's Chartered Tribunal recently suspended the permits for the Ticul A/B project, ruling in favor of members of the Mayan communities of San José Tipceh and Plan Chac, who appealed to the Protection Law against the potentially irreparable environmental, cultural and health impacts coming from the removal of more than 600 hectares of forest to make space for the solar park (CEMDA, 2022; interview with activist-lawyer). Also in the case of the Yucatán Solar park a lawsuit appealing to the Protection Law led to the suspension of the project permits and works (EJAtlas, 2022r). In Kimbilá, ejido members filed a complaint with the Agrarian Attorney's Office

and the State Delegation of the institution cancelled a call for public consultation wanted by the construction company, which would have invalidated a unanimous vote against the park in a previous assembly (EJAtlas, 2022t); Interview with an environmental defender from Hoctún). Similarly, local Mayan communities successfully appealed to the Mexican Supreme Court of Justice to block Sinanché Wind Park (Fierro, 2020). Finally, the same Supreme Court cancelled the permit to develop the Cansahcab project after the litigation by Sinanché's ejido members (Yucatán Ahora, 2020). As evidenced here, the rate of success of litigation in my sample is relatively considerable.

However, while entering litigation may end up benefiting communities' struggles in opposing controversial RE projects that would speculate on their territories, these processes are expensive: litigation entails high costs in three aspects. First, litigation consumes significant time. In the above-mentioned cases, the time between the initial awareness of plans to construct a RE park and a court ruling spans several years – ranging from a minimum of three years, as observed in the cases of Yucatán Solar and Sinanché, to more than six years in the case of Ticul A/B projects. These estimates are conservative, given the challenges in defining the exact start or the end of a litigation process. Nevertheless, they provide a sense of how prolonged the journey to bring RE parks to justice can be, as well as the sustained tension this imposes on those involved. Meanwhile, as formal claims proceed in the courts, developers may avail themselves of the permits they possess to advance with the works.

Second, litigation requires alliances, or – in alternative - money. Impacted communities face several challenges: (i) building a critical understanding of the cumulative social and ecological implications of an industrial-scale development project; (ii) navigating the technical complexities of law and policy frameworks and instruments; and (iii) overcoming the language barriers of the Mayan population, which can restrict access to the judiciary ground to those who hold the required knowledge. Consequently, it is common praxis that impacted individuals and communities establish alliances with environmentalists, activist scholars and lawyers who are equipped with the required expertise to support the struggle. Otherwise, they need to hire professionals in the legal field. However, this dynamic may be problematic, due to the significant power that 'expert' knowledge often holds. As an activist-lawyer informant explains:

> *"*We must change the concept of litigation. Because [...] for a long time [...] the lawyer arrived, and they said what had to be done [...] This continues to be a certain type of colonialism […] The lawyer cannot be the only one who knows, who says what has to be done [...] A lot of work has been done by anthropologists, who often help to translate the language, interpreters, scholars of multiculturalism,

> interdisciplinary teams, as well as people from the community who have gone abroad and studied in the city"

Trustworthy alliances are crucial not only with external actors but also from within the community. Testimonies of conflicts between project opposers and promoters within the same community often emerge from my interviews, often driven by the significant pressure to sell land. As a result, in the above-mentioned litigation cases, lawsuits are tendentially initiated by a small group of community members. These lawsuits are often led by local environmental defenders, grassroots organizations, or individuals who possess the capacity to critically understand the implications of the RE development at stake.

Third, the highest price for formalizing a complaint in the form of a lawsuit is paid by its signatories. I collected testimonies of personal threats, harassment, and intimidation against those who publicly critique RE parks. For instance, a local activist from Valladolid explains:

> "After I signed the amparo lawsuit, I started to receive acts of digital violence, and also pressures to leave my job."

5.5 Discussion

As I outlined in the background section, literature at the nexus between legal and environmental conflict study points to describe environmental legislation and policy as *double-edged swords* for environmental defenders and EJ movements. In this Chapter, I inquired what side of the sword weighs more, in Yucatan.

In terms of distribution of environmental goods and bads, we see how controversial and conflictive projects are legitimized also through environmental authorities, legislation, land-use policies, and bureaucratic paperwork, at the expense of those who inhabit the territory in which solar and wind parks are developed. I have reported that participation mechanisms are limited, with few institutional spaces for impacted communities or environmental defenders to mobilize in decision-making processes. As a result, their involvement tends to be reactive, often focusing on litigation. In turn, litigation encompasses high costs, in terms of time, technical knowledge outsourcing, and exposure to individual threats. With regards to recognitional injustice, both the laws and the paperwork surrounding the projects are complex, specialized, written solely in Spanish, failing to acknowledge the existence of different epistemologies. Additionally, the very existence of Indigenous communities is often disregarded in official documents, such as certain Social Impact Assessments.

I consider that the situation outlined above may be a symptom of another level of injustice: an uneven distribution of institutional power. On one side, the law grants institutional authority to a handful of federal public administrators and judges, whose offices and homes are far from where the projects are to be built. These individuals hold the power to write laws, design policies, enforce them, monitor their implementation, decide who to include in decision making and determine what is 'just'. On the other side, those most affected by decisions regarding the construction of controversial RE parks have limited power to make their voices heard within the institutional realm. As a result, much of the development reflects the interests of the economic agenda of the federal government in Mexico City, who confers legal legitimacy to the RE parks at the expense of local peoples and Indigenous communities, and instead benefitting private developers. In line with the thinking of critical and decolonial EJ scholars (Álvarez and Coolsaet, 2020; Barragán-Contreras, 2023, 2022; Temper, 2019) and with those authors advocating for a re-politicization in law and policy making (Hirschl, 2009; Kramarz et al., 2017; Vallinder, 1994), I support the idea that a fairer distribution of decision making power in the public sphere is key in achieving EJ. Shifting powers over law and policy making, and its application to the community level could lead to more equitable EJ outcomes. However, the dilemma of whether and how such a redistribution of institutional power could be achieved remains unresolved.

Rodríguez and Inturias (2018) maintain that there are two major dialectical ways to impact institutions: outright confrontation (e.g. political mobilization) and ensuring greater representation in public policy making. This could involve using existing institutional spaces, or "by creating new institutional arrangements where none exist, such as decision-making councils, co-management committees, roundtables or processes of consultation" (ibid.:99). Related to this latter idea, I consider relevant the valorization of Indigenous institutional systems such as the Mayan Law (Hessbruegge, 2014; Schwank Durán, 2005) or initiatives like The Rights of Nature Tribunal (www.rightsofnaturetribunal.org), which was recently organized by activist scholars, practitioners, lawyers and jurists and grassroots organizations to sentence about the pass of a new infrastructure project in Yucatan: the Mayan Train (Múuch' Xíinbal, 2023).

In terms of influencing existing institutional spaces, I see a window of opportunity for Yucatan's environmental justice struggles in those institutions that are closer to the 'epicenter' of the conflict, i.e. municipalities. From one side, I recognize the importance of political control over the municipality (e.g. through elections of the mayor). As we have seen, the Mexican Constitution grants municipalities the authority to issue land use and construction permits,

essential documents for advancing industrial-scale development. A municipal administration committed to pursuing progressive social and ecological agendas could help institutionalize mechanisms for tackling major shortcomings, such as the lack of municipal land use plans or corruption. However, this is contingent on (i) the willingness of federal and state governments to empower the municipalities and provide them with the financial, technical, and juridical resources needed; and (ii) a municipal administration equipped with a certain degree of ethical morality that would confer power to local communities.

Agrarian institutions could also serve as a space for democratically building Yucatan's legal struggles from the ground up. However, currently, related challenges are many. The aging of landholders, and lack of access to social land holding for young generations and women often contribute to ignite conflicts within the communities (Torres-Mazuera et al., 2021). Furthermore, the Agrarian Law has undergone significant reforms in the last three decades – including the one in 1992 that opened the possibility of its privatization - which has accelerated land grabbing to the benefit of development industries (GeoComunes et al., 2020). Thus, ejidos are becoming the place where agreements for the development of RE parks are forged, often a decision-making process made by only part of the population. Nonetheless, in several of the analyzed conflict cases, lawsuits to oppose RE parks were issued by ejido members and members of local communities. I consider these alliances as an indicator of a potential counterbalance to the power of governmental authorities.

However, it is crucial to recognize that the effectiveness of the struggle at the institutional level for EJ movements is highly context dependent. It is not something that can be generalized; rather, one must consider the ethics and motives of the actors involved, the capacity of the movements, as well as power unbalances at play in each situation. The words of a Mayan community leader and environmental defender help us to express this idea:

> "The legal [ground] is a very relative thing. Whether it works or not depends very much on the political line of whoever is in power at that time. [...] The struggle for the defense of the territory cannot be carried out from a single strategy. It must be integral. We cannot only bet on the legal - nor can we only bet on the organizational or media struggle. I believe that they all have a strength, and our ability to read the situation is important to know when it can generate good results, and when it cannot."

I conclude by acknowledging that the nature and quality of the collected information relies on my lack of expertise in jurisprudence and a limited networking capacity, which may lead to

gaps in understanding. Furthermore, the attempt to render a holistic picture of a complex reality inevitably leads to a loss in detail. Future analyses could focus more closely on specific levels of environmental authority, legal instruments, lawsuit filings or court decisions. For example, what role do the rights to people's self-determination play in the context of extractivism? To what extent related legal frameworks empower local and Indigenous communities to establish their own development models? Why is the added value of institutions that are peculiar to the Mexican case (like *ejidos* or the Protection Law) compared to other contexts?

6 Regulating through conservation: on the role of protected areas for environmental justice

Disclaimer: An adapted version of this Chapter has been published in the journal *Global Environmental Change* (Bontempi et al., 2023b). The published work resulted from collaboration with other critical scholars, where I led the whole research process (including conceptualization, data collection, curation, analysis, validation, methodological design, visualizations, writing, review, and editing). Although the published article represents our collective work, this Chapter includes my own edits. Therefore, I use first-person singular pronouns (I/me/my) throughout, as this version differs from the one that I discussed with my co-contributors. The full reference and the original Abstract of the paper reads as follows.

Bontempi, A., Venturi, P., del Bene, D., Scheidel, A., Zaldo-Aubanell, Q., & Zaragoza, R. M. (2023b). Conflict and conservation: On the role of protected areas for environmental justice. *Global Environmental Change*, *82*, 102740. https://doi.org/https://doi.org/10.1016/j.gloenvcha.2023.102740

Abstract: When are protected areas drivers of environmental injustices and conflict, and under which circumstances may they support customary users in protecting their lands and livelihoods against extractivist development? We address these questions by analyzing the diverse roles that protected areas play in the context of environmental conflicts. We build a global database of 474 environmental conflicts in protected areas by overlapping data from the World Database of Protected Areas and the Global Atlas of Environmental Justice. Through descriptive statistics and content analysis, we characterize the intersections between the two databases and discuss those cases where protected areas play an important role in the origin, dynamics, or outcomes of the conflicts. Our findings show that growth-oriented extractivism and development are major drivers of conflicts in protected areas, where these latter can both jeopardize and support environmental justice. While several cases describe protected areas as drivers of injustices and conflicts, they can also become tools that support peoples' struggles against controversial extractivism and development projects. The diversity of possible interactions between conflict configurations, movement claims, and forms of conservation thus require a nuanced understanding of the complex implications of protected areas for environmental justice.

6.1 Introduction

So far, I questioned the adequacy of two state- and market-led PIs for the regulation of extractive industries through the cases of WeBuild's CSR mechanisms and Yucatan's environmental rule of law. I now pass touch upon a third case, the one of *protected areas* (PAs), to question whether a hybridly governed PI for environmental protection is performing better in addressing EJ concerns in the context of environmental conflicts tied to extractivism.

The effectiveness of PAs to serve not only biodiversity conservation but also to support livelihoods and address social justice concerns of customary land users is not a given. Civil society groups and social movements have taken different stands regarding the conditions and the extent to which PAs should be further expanded globally. For instance, in September 2021, on the streets of Marseille, a coalition of organizations and activists concerned with agrarian and environmental justice protested against the International Union for the Conservation of Nature (IUCN) World Conservation Congress' *30 × 30 motion* to increase global surface cover of PAs from the current 16% (UNEP-WCMC and IUCN, 2024) to a target of 30% by 2030 (IUCN, 2021a, 2021b; OLON, 2021). Gathered at the first international Congress "to decolonize conservation" (OLON, 2021), they were denouncing land grabbing, human rights abuses, and corruption behind the designation of many PAs worldwide, and questioning the origins, meaning and desirability of conservation policies. Meanwhile, behind the doors of the IUCN World Conservation Congress, the IUCN's Indigenous Peoples' Organization Members presented a provocative countermotion to protect 80% of the Amazon rainforest by 2025 to secure their land rights (Farand, 2021; IUCN, 2021c).

This is just one example of how PAs may be arenas of debate and struggle over the social impacts of conservation programs. Several viewpoints emerge on the specific implications that PAs hold for local groups. Although the body of literature that considers more PAs as a necessary measure for conservation is vast, critical perspectives on conservation issues have been growing in number. While many authors are concerned with how and why the PA global estate should increase (Allan et al., 2022; Baillie and Zhang, 2018; Dinerstein et al., 2019, 2017; Maxwell et al., 2020; Venter et al., 2018, 2014; Wilson, 2016), political ecologists and critical geographers have been describing many PAs as contentious because of their links with neoliberal agendas, or as tools for control over resources, territories and peoples (Apostolopoulou et al., 2021; Brockington et al., 2008; Büscher et al., 2012; Peluso, 1993a).

At the 2022 UN Biodiversity Conference (COP 15), 188 Nations recently agreed to the *30x30 target* (CBD, 2022b). Therefore, it is important to gain a better understanding of the implications

of such a policy for people and the environment, not only to ensure biodiversity conservation, but also for supporting and protecting the rights and needs of people living within or close to PAs. The Rights & Resources Initiative (2020) estimates that about 363 million people live in existing PAs worldwide. Allan et al. (2022) warn that 1.8 billion people live on land that should require conservation attention, and (Schleicher et al., 2019) argue that at least 1 billion live in areas likely to be protected if the global conservation estate were to increase to 50% - as the *Half Earth movement*[8] advocates for. EJ concerns arise as the establishment of PAs may imply radical changes in livelihoods and land uses. Warning bells especially ring for those cases where PAs have been associated with violence and violations of human rights, including forced evictions of customary groups from their traditional lands to set up conservation areas (Brockington and Igoe, 2006; Fanari, 2022; Rights and Resources Initiative, 2018; Survival International, 2022; Tauli-Corpuz et al., 2020). This is happening even though the role of Indigenous Peoples and Local Communities (hereafter, IPLCs) has been widely recognized as crucial for ensuring effective and equitable conservation targets (Dawson et al., 2021; Ens et al., 2021; Garnett et al., 2018; Reyes-García et al., 2019).

In this context, it becomes important to better understand the specific implications of PAs for environmental justice, particularly, when PAs may act as drivers of environmental injustices and conflict, and when they may contribute to protect and defend the rights of local groups, their livelihoods and claims for justice against extractivist development pressures. In this paper I aim to shed light on these questions by discussing 474 environmental conflict cases that intersect with PAs worldwide. I created this dataset by overlapping data from the World Database on Protected Areas (WDPA) and the Global Atlas of Environmental Justice (EJAtlas), the two largest global databases on, respectively, PAs and environmental conflicts currently available. While the resulting dataset represents a convenience sample of environmental conflicts occurring within PAs worldwide that has inherent data limitations, to the best of my knowledge, it enables the largest empirical analysis carried out so far.

I operationalize the research in three steps. First, I characterize, through descriptive statistics, the intersections between environmental conflicts and PAs. I look at the conflict drivers within PAs and the types of PAs that are overlapping with environmental conflicts. Second, I attempt to gain a deeper understanding of the specific role that PAs play in the origins, dynamics and outcomes of environmental conflicts. To this end, I analyze a sub-sample of 107 cases in which different types of actors involved mobilize for, against or through PAs. This provides insights on who can take advantage of PAs, their underlying motives and their mobilization strategies.

[8] See https://www.natureneedshalf.org and https://www.half-earthproject.org

Third, I discuss the environmental justice implications of such mobilizations, with a particular focus on who gains and who loses because of PAs, and on the outcomes of mobilizing for or against PAs. This analysis nourishes the understanding of the conditions under which PAs may jeopardize or serve EJ.

6.2 Background

6.2.1 Protected areas & environmental justice: The debate is alive

Globally, conservation policies and projects have been marked by controversial debates regarding questions of justice and sustainability.

Intergovernmental organizations, transnational NGOs and donor agencies dedicated to conservation policy, advocacy and funding recognize the positive role that PAs may play not only for environmental sustainability but also for supporting social justice and local livelihoods. They showcase initiatives, best practices, guidelines, and roadmaps in relation to sustainable human development, equitable distribution of natural resources, just governance mechanisms, rights of local communities, and human well-being in PAs (Borrini-Feyerabend et al., 2013; CIHR, 2016; Conservation International, 2022; Dudley and Stolton, 2022; GEF, 2022; UNESCO, 2021; WWF, 2020).

Unfortunately, the documentation of ‘worst practices’ in PAs is robust as well. Critical geographers, political ecologists, and environmental justice scholars have been questioning the very origins and implications of conservation programs and PAs, unveiling their relationship with neoliberal capitalism and neo-colonialism, particularly in the Global South (Brockington et al., 2008; Büscher et al., 2017; Duffy et al., 2019; Escobar, 1998; Igoe et al., 2010; MacDonald, 2010a, 2010b; Peluso, 1993b; Tauli-Corpuz et al., 2020; West et al., 2006). Calling these authors *conservation critics*, Kopnina (2016) sums up their positions in four main points. First, they denounce the displacement of local communities from their land to make space for PAs. Second, they criticize the nature-culture discursive dichotomy that underpins the rationale for strict conservation PAs. Third, they maintain that those who really damage the biosphere are just an elite sector of society, instead of the whole of humanity. Fourth, they believe that social metabolism rather than population growth is the main driver of biodiversity loss. I add to these four arguments that conservation critics point to the embeddedness of many conservation programs in global capitalism, in such a way that conservation and neoliberal agendas are usually controversially intertwined (Apostolopoulou et al., 2021; Brockington et al., 2008; Igoe et al., 2010; MacDonald, 2010a, 2010b).

Labeling *mainstream conservation* the other side of the debate, Brockington et al. (2008) describe it as a "dominant strain of conservation [whose] ideas and values […] are perhaps most clearly represented in the larger conservation organizations which dominate conservation funding" (ibid., p. 9). Critics of modern conservation programs are concerned with the trend in shifting control over territories and resources from local groups to state, private, or corporate actors after the designation of PAs - and denounce the related negative implications on human rights and access to land for IPLCs. Concerned with the claims of IPLCs and organizations dedicated to human rights advocacy, they have been labeling mainstream conservation projects as *neoliberal* (Apostolopoulou et al., 2021), *colonial* (Domínguez and Luoma, 2020), *fortress* (Brockington, 2002), *militarized* (Duffy et al., 2019), arguing instead for more *convivial* modes of protecting the biosphere (Büscher and Fletcher, 2020, 2019). From outside academia, civil society organizations like Minority Rights Group International (2022), Rainforest Foundation (2022), Survival International (2022), among other environmental activists and groups have shared these views and uphold these terms and ideas in recent campaigns.

Besides conservation critiques, and despite considerable literature that discusses different aspects of EJ in PAs (Anaya and Espírito-Santo, 2018; Benetti and Langemeyer, 2021; Boillat et al., 2018; Dahlberg et al., 2010; Dawson et al., 2018; Martin, 2017; Martin et al., 2016; Mollett and Kepe, 2018; Rambaree, 2020; Ramutsindela and Shabangu, 2018; Ruano-Chamorro et al., 2021; Sims et al., 2022; Wienhues, 2018), the *land sharing vs. land sparing* debate on what model of conservation is best suited for the preservation of biodiversity is vibrant, but not really framed in EJ terms (Pearce, 2018). The main object of contention is the level of *protectedness*, i.e. how strict access to PAs should be, in order to best protect the world's biodiversity. Büscher and Fletcher's (2020, 2019) mapping of the various currents of thought within conservation debates tell us that most of the literature does not give enough space to critical views on PAs and their implications for environmental justice. However, the heated discussion that their analysis recently provoked shows that the debate is alive, positions are diverging, and trends are nuanced (Büscher and Fletcher, 2022).

6.2.2 Environmental conflicts in protected areas

Despite being promoted as instruments of conciliation between humans and their environments, PAs are not exempt from social conflict. A sizable body of literature deals with *conservation conflicts*, i.e. those originating from the clash between human activities and biodiversity conservation objectives (Redpath et al., 2013; Young et al., 2010). Among reviews

of the different framings of conservation conflicts (Baynham-Herd et al., 2018; Redpath et al., 2015, 2013; Young et al., 2010), Soliku and Schraml (2018) focus on PA conflicts, which are conflicts driven by PAs. They identify various types and causes and include those related to human-wildlife interactions, restricted access to resources, exclusion from participation and information sharing, indigenous rights and beliefs, population eviction, relocation and resettlement, park benefits and revenue distribution, law, legislation and policy and agriculture and land-use conflicts. On a similar line, Rechciński et al. (2019) provide a conceptual framework to understand PA conflicts that enriches the typification. Other authors focus on park authorities versus local people conflicts (De Pourcq et al., 2017; Mombeshora and le Bel, 2009; Vedeld et al., 2012), or on conflict management and resolution strategies and approaches (Castro and Nielsen, 2003; Madden and McQuinn, 2014; Soliku and Schraml, 2020).

The above literature considers many PAs as conflict drivers, or as spaces where social conflicts often occur. In the scope of the present research, I build on the work of these authors. I consider not only conservation conflicts occurring *because of* PAs, but also look at different kinds of environmental conflicts occurring *in* PAs and focus on the specific role that PAs play in such conflicts. The study of environmental conflicts is useful to understand issues of social justice related to environmental change and governance (Martinez-Alier, 2018; Scheidel et al., 2018). Building on both Scheidel et al. (2020) and Temper et al. (2015), I refer to environmental conflicts as social conflicts related to the environment, where actors mobilize against activities and resource uses posing significant social and environmental threats to them. In this article, I consider as causes of environmental conflict not only conservation-related projects, but also those related to industrial-extractivist development projects that intersect with PAs. In summary, I include in my analysis diverse types of projects that may cause environmental conflicts, ranging from biodiversity conservation (PAs included) to resource and commodity extraction, manufacturing, transport, management or disposal.

6.3 Methodology

6.3.1 Data sources and sample selection

To better understand the diverse ways through which environmental conflicts and PAs interplay, this case study presents a qualitative and quantitative analysis of environmental conflicts located within PAs. I created a dataset by combining information from the two largest global databases available in the respective fields of inquiry: the Global Environmental Justice Atlas (EJAtlas) and the World Database on Protected Areas (WDPA).

The EJAtlas is a participatory mapping project created in 2011 to collect, systematize, and geolocate information around environmental conflicts worldwide (Del Bene and Ávila, 2023; Martinez-Alier, 2021; Temper et al., 2015). The data collection and validation process is based on collaboration between the EJAtlas editors and researchers, other academic contributors and actors on the ground, including community-based activists, journalists, non-governmental organizations, among others. The WDPA is a collaborative mapping project too. Jointly established in 1981 by the UNEP and the IUCN, it is monthly updated with information on marine and terrestrial PAs periodically provided by governments, NGOs, academia, and industry (UNEP-WCMC and IUCN, 2024). When I downloaded the databases for analysis (May 2021), the EJAtlas contained information on 3'408 conflict cases, while the WDPA recorded about 266'000 PAs globally.

The EJAtlas draws on different secondary sources, i.e.: academic papers, news articles, lawsuits, civil society reports, and others. Each type of source may produce reporting bias, such as selection bias (*which cases are reported in these data sources?*) and description bias (*how are the events depicted?*) (Earl et al., 2004). The use of multiple sources enables to cross-check information and reduce, to some extent, such biases (Sundberg and Melander, 2013). The use of local and non-academic data sources also offers advantages as they provide a grounded perspective on local conflict dynamics. However, the EJAtlas coverage depends on a variety of factors, such as the availability of contributors, access to public information and to local informants, and capacity for data moderation (Del Bene and Ávila, 2023; Scheidel et al., 2020b). If a region accounts for few cases or none, it does not necessarily mean there are no environmental conflicts. Missing coverage is frequently the result of lack of reliable information, or limited access to information because of remoteness, data accessibility, contentious social and political contexts, or lack of local contacts. Consequently, there is little information available on certain regions such as parts of Russia and Mongolia, Central Asia, and Central Africa. Another limitation of the EJAtlas is its temporal coverage: more than half of the conflicts start dates are later than 2008 (Scheidel et al., 2020a). Regarding the WDPA, despite being the biggest existing PAs mapping project, the database is not necessarily representative of all PAs worldwide either. Its completeness strongly depends on voluntary data submission by PA managers and its subsequent processes of validation and digitalization (UNEP-WCMC and IUCN, 2024).

The geographical intersection of environmental conflict reported in the EJAtlas and protected areas registered in the WDPA resulted in a total sample of 474 EJAtlas cases overlapping with

570 PAs[9]. I provide an overview in form of descriptive statistics of the specific types of conflicts and the type of PA in which conflict occurs based on information provided by the EJAtlas and WDPA, specifically including the variables (i) conflict category (covering general sector first level classification); and specific conflict causes (second level classifications), (ii) conflict intensity, (iii) PA designation, (iv) IUCN category and (v) governance type. For the analysis of the specific role that PAs play in the conflict, I conducted a qualitative and quantitative content analysis of the descriptive information available in the EJAtlas case datasheets (see Data Analysis). As this information was not provided with sufficient detail for all identified cases, I selected a sub-sample of cases adequate for this analysis. An initial screening of the 474 EJAtlas datasheets led to the exclusion of 367 cases, for which the existence of a PA appeared to be unexplained, irrelevant, or not reported in relation to the conflict description. I then used the resulting sub-sample of 107 cases to identify the specific roles that PAs play in environmental conflicts.

Figure 6.1 shows the geographical distribution of the whole database (n = 474) and of the sub-sample of cases where PAs are reported to play a role in the conflict (n = 107). A complete referenced list of cases is provided in the Appendix.

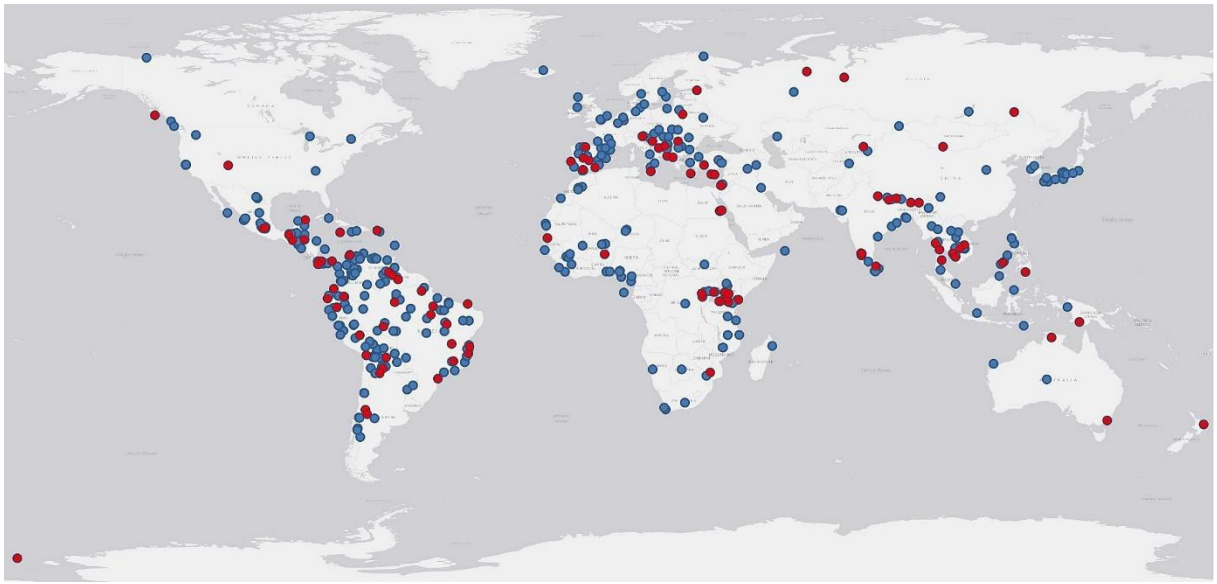

Figure 6.1 Geographical distribution of the sample of analyzed environmental conflicts located in protected areas (n = 474). Red cases indicate the sub-sample analyzed to identify the specific roles that protected areas play in environmental conflicts (n = 107).

[9] The number of PAs is greater than the number of conflicts as a single conflict may overlap with more than one PA. Note that data on EJAtlas cases are stored as georeferenced points, while the WDPA stores information as two geospatial feature classes: polygons (~95%) and points (~5%). These latter were buffered with a radius corresponding to the area of the PA at issue, in order to transform them into polygons too. Thus, for a minor of cases (<5%) this may have resulted in conflicts being located in proximity of the PA, rather inside of it.

Most of the analyzed cases are located in Latin America (44%) and Europe (19%), while other regions are less represented. Historically, for those conflicts where a start date is noted, 17% began in the 1990s, 35% in the 2000s, and 23% in the 2010s. For those PAs where a designation date is noted, 46% were established before 2000, 30% in the 2000s, and 14% in the 2010s.

While my mapping is global in scope, its coverage is contingent on the strengths and limitations of the databases of departure. Particularly, the spatiotemporal distribution and types of environmental conflicts and PAs covered are not to be considered as statistically representative globally but reflect the distribution of cases within both datasets. In other words, the sample analyzed in this Chapter can be considered as a convenience sample that is based on secondary data, shaped by the sources and choices of those involved in the primary data gathering process. Despite these limitations, it represents the largest sample currently available on environmental conflicts occurring within conservation areas and enables us to identify diverse ways through which PAs intersect with environmental conflicts.

6.3.2 Data analysis

Data were analyzed both qualitatively and quantitatively. First, I performed an inductive qualitative content analysis (see Elo and Kyngäs, 2008) of the descriptive text fields provided by the EJAtlas cases. Inductive qualitative content analysis is used to process qualitative data where previous knowledge on the topic is insufficient or fragmented, as in our case. The process is divided into three phases: preparation, organization, and reporting of data. Throughout the phases, data are codified and progressively arranged into categories, until the overall picture is describable through a conceptual map.

In my analysis of actors mobilizing in relation to PAs, I focused on the following questions: *what is being mobilized, who is mobilizing, why actors mobilize, how actors mobilize*. The categories that emerged from the coding process were divided into Main and Sub-categories (Table 6.1).

The coding process was reiterated twice, until theoretical saturation was observed. Within the sub-sample of 107 cases where PAs were described to play a role in the conflict dynamics, I identified 174 *PA-related mobilization events*. A PA-related mobilization event is any acknowledged instance where the PA plays either a role as a mobilizer or as a tool that is mobilized by actors.

Dimension	Main Category	Description of Main and Sub-categories*
What?	**Object**	Describes whether the actor mobilizes in favor or against a PA, or through the promotion of a PA/PADDD **Pro-PA mobilization**: when the actor is in favor of or directly mobilizes a PA designation (institution), protection (defense of), enforcement (use of a previously existing PA; or issues of how and by whom the area should be best governed), upgrading (increase in the level of protection), upsizing (increase in size) or management. **Pro-PADDD mobilization*****: when the actor is in favor of or directly mobilizes a PA downgrading (decrease in protection level), downsizing (decrease in size) or degazettement (removal of the PA from the map).
Who?	**Actor**	The type of actor who is mobilizing in favor or against, or mobilizes the PA-related event **Governmental**: State actor holding legislative or executive powers (national, regional or local governmental body or authority, or PA management body); **Intergovernmental**: intergovernmental organization (includes UNEP, UNESCO, IUCN, The World Bank); **NGO**: single or coalition of local, national or international non-governmental organizations; **IPLC**: indigenous people and local communities, as defined by IPBES (n.d.); **Corporate**: national or transnational private companies, corporations or industrial groups; **Other**: other types of actors that do not fall into previous categories. Example: "*wildlife experts*" (EJAtlas, 2014a); "*landowners*" (EJAtlas, 2016a); "*environmental lawyer*" (EJAtlas, 2014b); "*mountaineers*" (EJAtlas, 2016b), among others.

Table 6.1 Conceptual mapping of categories from the content analysis of environmental conflicts occuring in PAs

Why?	**Purpose****	The main acknowledged reason behind the object of mobilization**: **Biodiversity Conservation**: to preserve biodiversity or the environment, including specific flora or fauna species. *Example: "The park has been instituted mostly as a project to protect the population of the endangered mountain gorilla*" (EJAtlas, 2019a); **Governance Control**: to shift political power in favor of a type of actor to grant this latter control of the territory and its resources. *Examples: "Scholars have referred to this as a form of internal colonialism, and point to the nationalization of forest and grazing land with the imposition of protected areas as a key strategy used by the state in the imposition of ecogovernmentality*" (EJAtlas, 2019b); **Favor Extractivism Or Development**: to enable large or industrial-scale extractivism or development projects. *Example*: "*the declaration of the protected area is related to the government's interest in dispossessing them of their territories in order to provide the land to foreign companies and encourage private investment for hydroelectric megaprojects"* (EJAtlas, 2015a); **Halt Extractivism Or Development**: to block large or industrial-scale extractivism or development projects/schemes. *Example*: *"the Spanish Ministry of Agriculture [...] has designed a plan to build a luxury resort that includes the construction of a five star hotel, a private airfield, two golf courses and an industrial processing plant for cork. [...] On the one hand, the Andalucian Regional Department of Environment plans to initiate immediately the expansion of the Alcorconales Natural Park, implying that 100% of the public property will be protected under the Natural Park label. This extension intends to block the developmental plans that the State had designed for The Almoraima"* (EJAtlas, 2014c); **Protect IPLCs**: to act in the interest of indigenous people and local communities. *Example: "As a head of the Sindicato dos Trabalhadores Rurais (STR), he had dedicated his life to the support of expropriated families and had been an advocate for land reforms and the establishment of protected areas and extractivist reserves in the Tucuruí area*" (EJAtlas, 2019c); **Other**: other motives that do not fall into previous categories. *Example: "the government of Nepal introduced legal reforms to address conflicts between park management and locals nationally, and introduced the policy of managing the peripheral villages as buffer zones to be jointly managed by buffer zone residents and park administration*" (EJAtlas, 2019d).

Table 6.1 (continues) Conceptual mapping of categories from the content analysis of environmental conflicts occuring in PAs

How?	**Form**	The way in which the PA-related event is mobilized: **Advocacy**: when the PA or PADDD is used as an advocacy tool to support the actor's purpose; or similarly when the actor pleads in support of the PA or PADDD. *Examples*: "*the NGO asks to cease all logging activity in wildlife sanctuaries*" (EJAtlas, 2014d); "*... actively launched activities for raising awareness and conducted letter writing campaign, arguing that implementation of the project will set a dangerous precedent for demands for excisioning parts of National Park*s" (EJAtlas, 2019e); **Policy**: when the PA or a PADDD event is enacted by an actor through a policy. *Example: "was designated as a National Park by Presidential Decree"* (EJAtlas, 2021g); **Judicial**: when the event entails the intervention of an administrator of justice (judicial authority). *Example "They filed two cases in the High Court of Kenya: first, to challenge the government's decision to degazette the park without following due process of the law and, secondly, to set an injunction on the decision so that Amboseli would maintain National Park status"* (EJAtlas, 2019e); **Financial**: when the PA-related event is channeled through the mobilization of funding. *Example: "The project would be financed by the share of the World Bank loan assigned to Croatia for establishment of the NATURA 2000 network of protected areas"* (EJAtlas, 2016b); **Other**: other forms of mobilization that do not fall into previous categories. *Example: "Poachers [...] removed signs that say 'Park Boundary. Hunting Prohibited', and modify them so they say only 'Hunting'."* (EJAtlas, 2020a).

* Each category contemplates N/A as a sub-category, which applies when the information is not available or sufficient to be categorized.
** The sub-categories should be considered as prevailing purposes at play, deductible from the frame of the case by the contributor.
*** For more information on PADDD, see Mascia and Pailler (2011) and https://www.padddtracker.org/

Table 6.1 (continues) Conceptual mapping of categories from the content analysis of environmental conflicts occuring in PAs

The first is the case when actors mobilize because of a PA-related event, e.g. to support or oppose the designation or removal of a PA. The second refers to cases where the PA is mobilized to promote a certain interest, e.g. when a specific actor uses a PA as leveraging discourse within an advocacy campaign, or as a policy instrument, etc. Therefore, each event is distinguishable as a univocal combination of the sub-categories at play, namely, the type of actor mobilizing, plus the object, purpose and form of mobilization.

For each event, I also identified whether the actor's mobilization could improve specific issues relevant for EJ. To do so, I analyzed the descriptive information in the EJAtlas field '*Do you consider this an environmental justice success? Was environmental justice served?*'. The information provided in this field reflects the subjective views of the EJAtlas case contributor whether aspects of EJ could be enhanced, considering the case specific movements' claims, impacts and conflict dynamics at play.

Finally, I performed a quantitative analysis of the variables available through the EJAtlas and WDPA datasets (i.e., conflict category, IUCN Category, PA designation, etc.), as well as of the categories identified through the content analysis for the sub-sample (i.e., events, actors, purpose, forms of mobilizations, and EJ implications). I use descriptive statistics to report the frequency of observations and thus characterize my convenience sample in the following Section.

6.4 Findings

6.4.1 Intersections of environmental conflicts and protected areas

The overlapping of the EJAtlas and the WDPA results in a set of environmental conflict cases that are not necessarily driven or caused by conservation areas, and take place in a diverse range of PAs typologies.

Figure 6.2 reports the occurrence of variables characterizing conflicts and PAs across the sample (n = 474). In 89% of the EJAtlas cases, the contributor classified the case under an EJAtlas category other than *biodiversity conservation conflicts*. Within the 11% of cases under this latter category, *PA designation* was noted in about 60% of cases as a relevant driver of conflict. This percentage decreases to 26% if we look at the entire sample of the different conflict categories. In other words, most of the analyzed conflicts develop around resources and commodity extraction, use, trade or disposal, or infrastructure and industrial-level facilities construction, whereas PAs are not identified as playing a key role as conflict cause. Conflicts

are reported mainly as medium (street protests, visible mobilization, etc.; 42%) and high intensity (widespread, mass mobilization, violence, arrests, etc.; 30%).

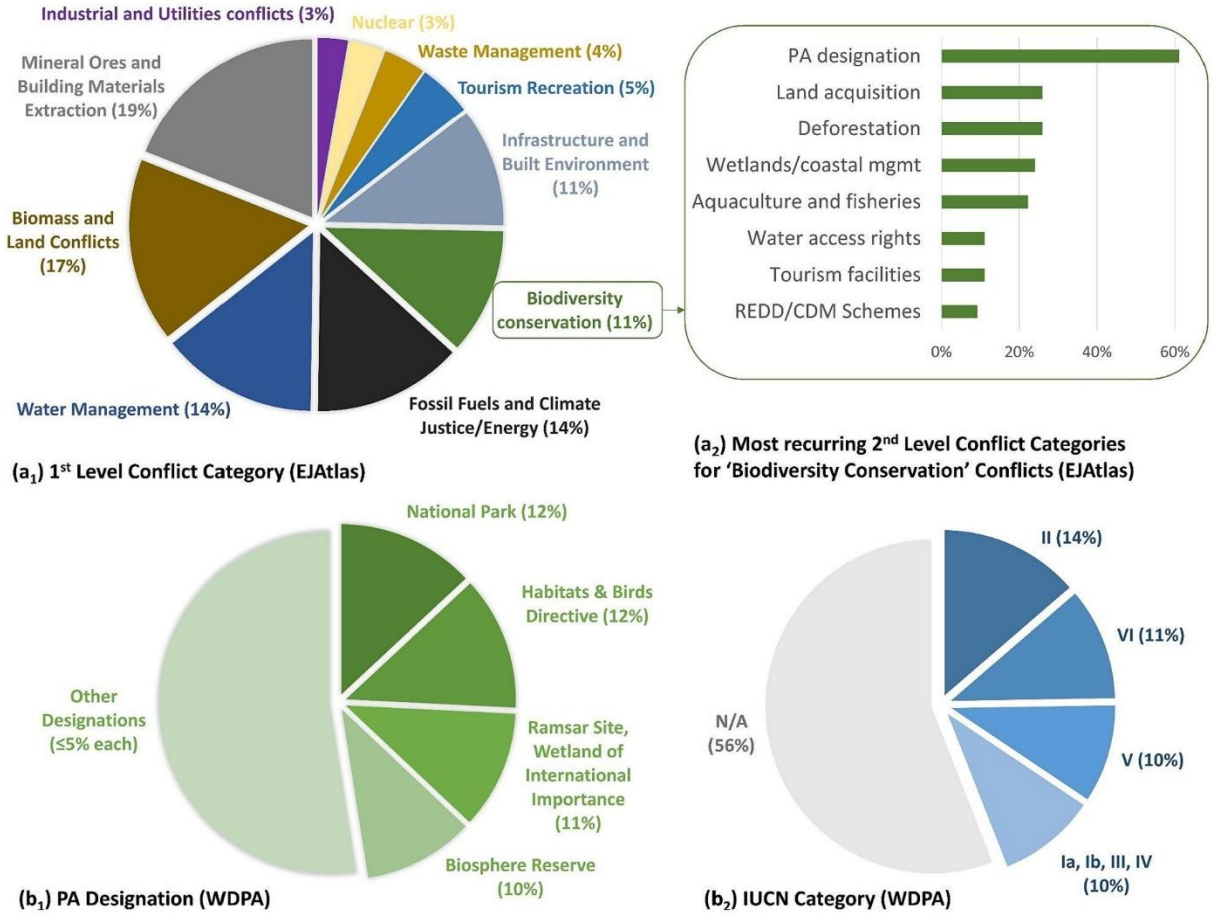

Figure 6.2 Characterization of the overlap between the EJAtlas and the WDPA (n = 474), in terms of occurrence of (a1) First level conflict category (EJAtlas); (a2) Second Level Conflict Category within 'Biodiversity Conservation Conflicts' (EJAtlas, n = 54); (b1) PA designation (WDPA); (b2) IUCN Categories (WDPA).

The sample suggests that a large variety of types of PAs overlap geographically with environmental conflicts. 137 different PA designations are counted, the most frequent ones are National Parks, Ramsar Sites, Biosphere Reserves, Sites of Community Importance within the Habitats Directive, and Special Protection Areas within the Birds Directive, each ranging between 6 and 12% of the whole set of PAs. If we look at the IUCN classification, in 56% of the sample the category is not reported, assigned or applicable. Categories II (National Parks), VI (PAs with sustainable use of natural resources), and V (Protected landscape or seascape) make up most of the remaining part, with a similar share: 14%, 11%, and 10%, respectively. Cases of conflict within formally recognized Indigenous areas and territories are present in merely 3% of the PAs sample (17 cases), which is also reflected in the figures on governance type. Besides the 26% where this latter information is not reported, 66% of PAs are managed by national, regional, or local governmental authorities, about 5% by NGOs, private

landowners or labeled as co/joint-management, while only 3% by IPLCs. In 30% of the PAs, information on governance is not available.

6.4.2 What role do protected areas play in environmental conflicts?

As explained in Section 6.3, a sub-sample of 107 cases provides information on the diverse roles that PAs play in the origin, dynamics, or outcomes of environmental conflicts. Within this sub-set, I find 174 distinct PA-related mobilization events, in which the PA plays either a role as a mobilizer or as a tool that is mobilized by actors. Table 6.1 provides an overview and description of the categories that resulted from the content analysis and conceptually maps the variables at play: the object of the mobilization, the type of actor who mobilizes, the reported motive of the mobilization, and the way in which the mobilization occurs.

The emerging picture is diverse in terms of objects, actors, purposes, and forms of mobilization found to occur in relation to PAs. The object of contention is not only limited to the establishment or removal of a PA. Issues around PA management, defense, enforcement, up/downgrading, up/downsizing are at the center of disputes too. On the list of actors involved, the range includes individuals, organizations, and institutions of all kinds, mainly grouped under the categories governmental, intergovernmental, NGOs, IPLCs, and corporate actors. They mobilize for, against or through PAs for various reasons, which go beyond mere biodiversity conservation and encompass matters of extractivism, development, governance, control, and peoples' stewardship. Based on the content analysis, I categorized the forms through which they mobilize under the following dimensions: advocacy, policy, judicial, financial, and others.

Figure 6.3a shows how often I observe these different types of actors, the forms of mobilizations they employ, and the purposes that motivated their mobilizations across the 174 PA-related mobilization events.

I often find *pro-PA* mobilizations where actors are positive about and/or pursue the establishment of a PA, or employ it as a tool for mobilization. However, also *pro-PADDD* instances where actors promote a downgrading, downsizing or degazettment of a PA are not missing. In most of the records governmental actors, NGOs and IPLCs are those mobilizing in relation to PAs, but we also count intergovernmental organizations and corporations, among others. PA(DDD)s are mobilized to halt but sometimes also to favor controversial extractivist or development-led projects. Actors mobilize in relation to PAs also for biodiversity conservation, control of territory and resources, or the protection of IPLCs, among other

purposes. Finally, actors mobilize because of or through PAs mainly by means of advocacy, policy, financial or judicial instruments. None of these actions related to PAs are reported to involve the use of direct physical violence.

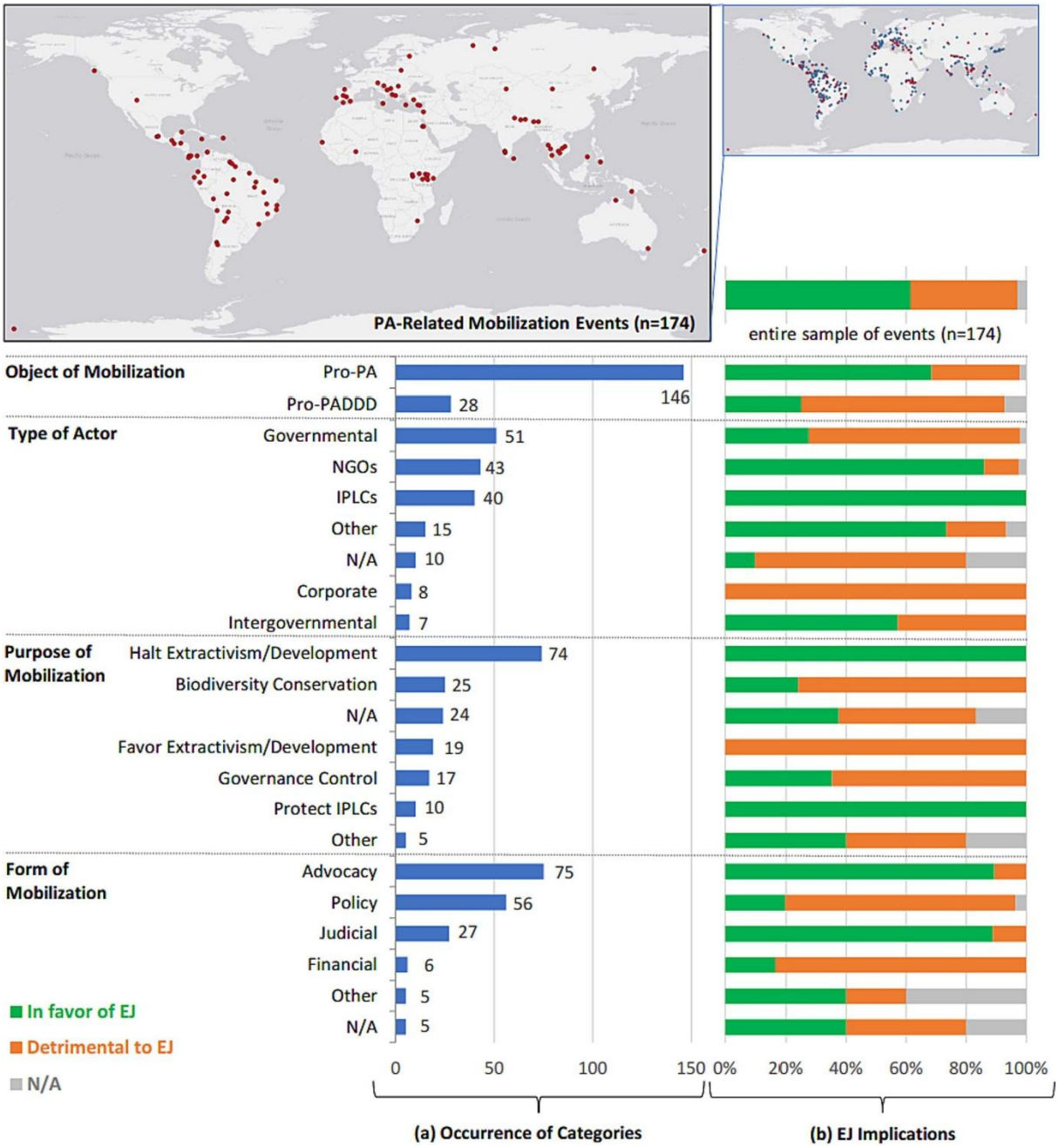

Figure 6.3 Overview of the sample of PA-related mobilizations (n = 174), in terms of (a) occurrence of sub-categories (number of registered events) and (b) the association between sub-categories and implication for environmental justice (EJ) as percentage of the total number of corresponding events. 'N/A' means that no information available for this variable.

The picture is diverse when we look at the complex interplays between these variables, even within a single conflict case. The dendrogram in Figure 6.4 shows how the sub-categories

actors and object, form, purpose of mobilizations interplay across the sample of n = 174 events. I prioritized an actor-based view because it is useful to understand how and why different actors may take advantage of PAs to pursue their own agendas.

I find that governmental actors not only promote (observed in 36 events) but also attempt to downgrade, downsize or degazette existing PAs (15 events). Interestingly, in four conflict cases, actors governing at different levels (e.g. national vs. regional vs. local) clash by mobilizing differently for, against or through the same PA. The case of the Bears Ears National Monument (Utah, US) is illustrative: in December 2017, former President Donald Trump reduced its size by 85% in favor of mining industries, just one year after the PA was designated by his predecessor Barack Obama (EJAtlas, 2020b). While governmental actors may mobilize PADDD events for enabling extractivism or controlling resources (13 events), this is not always the case. In the case of Mudumalai Tiger Reserve in India, the Ministry of Environment and Forests took legal action against the State government because of a PA that would have served as an elephant corridor and taken over local farmers' land (EJAtlas, 2019f). When governmental bodies promote a PA, the panorama of motives reported in my dataset includes diverse reasons, such as aims to protect biodiversity and communities (17 events), but also control over governance and resources (8). In three conflict cases, I also find the PA to be mobilized by a governmental actor to favor problematic extractivist or development projects (EJAtlas, 2019a, 2017a, 2016b). Here the EJAtlas contributor frames tourism development as an extractivist industry that is favored through the PA. A main form of mobilization for governmental actors is through policy (42 events).

With regard to NGOs, my sample mostly includes cases where they stand for PAs (42 events), to halt conflictive extractivist or development projects (29) or for biodiversity conservation reasons (7), mostly by means of advocacy (26) and judicial forms (12). One event also shows when coalitions of NGOs advocate against human rights violations because of the PA enforcement, in favor of Indigenous communities in Nepal's Bardia National Park (EJAtlas, 2019d).

The sample reports cases where IPLCs mobilize both in support of (36 events) and against (4 events) PAs. They mobilize in relation to PAs to halt problematic extractivism and development projects (26 events), gain control over the territorial governance (6 events) or to protect themselves (4 events).

Figure 6.4 Dendrogram of the actors involved in PA-related mobilizations, their aims and purposes, and the forms of mobilization used to achieve them (n = 174 events). The columns indicate the relationships between: type of actor; object of the mobilization; purpose of mobilization; form of mobilization. The color of the circle indicates the EJ implication of the mobilizations. The bigger the circle, the higher the number of observed events across the sample.

All reported cases where IPLCs mobilize for advancing control over the territory, they struggle for the demarcation of land as Indigenous land or community conserved area, with the exception of one case, where and Indigenous group opposed to a Biosphere Reserve that would limit their resource use rights (EJAtlas, 2015a). Both advocacy (32) and judicial (4) actions appear as important strategies for them.

Out of the 8 recorded events associated with corporate actors, I find both mobilizations against as well as for PAs. In the first case, they mobilize against PAs to enable extractivist activities. One example is the case where the Russian company Surgutneftegas allegedly commissioned a scientific report to legitimize the downgrading of the Numto Nature Preserve and consequently allow for oil drilling on protected wetlands (EJAtlas, 2019g). In those cases where corporate actors support PAs through funding or other means, the reported motive has been biodiversity conservation as an offsetting or compensation measure against the environmental impact of their activities (EJAtlas, 2020c, 2019h, 2018a, 2018b).

Last but not least, PAs might not only act as drivers of conflict, or as tools to be mobilized to promote diverse people's interests. PAs can also emerge as outcomes of environmental conflicts, as observed in 34 cases. Emblematic in this sense is the case of Jeanette Kawas National Park in Honduras, which was named after an environmentalist who was murdered because she defended the territory from the palm oil industry (EJAtlas, 2017b).

6.4.3 Environmental justice implications

The diverse forms of actors' mobilization in relation to PAs has important implications for EJ. For instance, the fact that local activists managed to block large-scale mining by fighting for the designation of the Tost Mountain Nature Reserve in Mongolia was considered by the case contributor to have enhanced EJ (EJAtlas, 2020d). However, my database also contains testimonies of serious human rights violations and violence of various kinds perpetuated in the name of conservation programs. Cases of *green militarization* like the Indian Kaziranga National Park show how PAs can be related with severe environmental injustices (EJAtlas, 2017c, Fanari, 2022).

Figure 6.3b and Figure 6.4 are colored according to how EJAtlas case contributors evaluated the case in relation to EJ concerns. Green and orange refer to situations where the PA-related mobilizations were reported as carrying respectively positive and negative implications for EJ. When there was insufficient information to attribute such a value, I coded the event as 'N/A',

in gray. Despite depicting events divided into those that favor and those that are detrimental to EJ, I acknowledge the complex processes at play that are not captured by this classification. Specifically, this attribute strongly depends on the case contributors' subjective understanding of the conflict (see Section 6.3).

Overall, the two Figures describe my dataset as composed of events where the EJAtlas contributor depicts a context where the PA is mobilizing or being mobilized either in favor of EJ (107 events) or against EJ (62 events). In a minor set of events, such a judgment is not straightforward. The same pattern is recognized when we look at a single sub-category: different types of objects, actors, purposes, and forms of mobilization count of positive, negative, and neutral judgments on the EJ implications, for a single event.

Not only pro-PA mobilizations are considered to work in favor of EJ, like in the case of the Nairobi National Park, where a committee composed of NGOs and intergovernmental organizations was formed to oppose the decision to build a highly impacting highway across the PA (EJAtlas, 2019e). We also find cases where mobilizing pro-PA does not imply a favorable EJ outcome. I can cite here the case of Venezuela's governmental agencies imposing the Canaima National Park at the expense of local communities, whose ancestral use of controlled forest fires was subsequently restricted by the PA administrators (EJAtlas, 2016c). I record cases of fortress or militarized conservation (e.g. EJAtlas, 2019f), or PADDD events aimed at making space for extractive industries (e.g. EJAtlas, 2014e), but also cases where governments mobilize PAs in positive EJ terms. I can mention the example of President Lula's government, which in 2009 created the Cassuruba Reserve in Brazil "as a result of popular pressure" to defend the land from extractive industries (EJAtlas, 2014f).

NGOs mobilize in favor of EJ (37 events), but also can support highly controversial PAs. Illustrative is the case of the Wildlife Conservation Society supporting the designation of Myanmar's Tanintharyi Nature Reserve. The reserve was funded by major gas companies as compensation for the construction of pipelines in the region and was reported to displace Indigenous communities from their ancestral lands (EJAtlas, 2018a).

On the same line, biodiversity conservation as a purpose is linked to diverse EJ implications. Interestingly, 19 events having biodiversity conservation as aim appear as detrimental to EJ. In this sub-set, we find the above-mentioned cases of fortress/militarized conservation and programs of environmental impact compensation through offsetting, including wildlife conservation areas like the highly contested Wayanad Wildlife Sanctuary in India, meant to be upgraded to a Tiger Reserve but failing recognition of IPLCs' land rights (EJAtlas, 2019i).

Governance control through PAs is a purpose that support (6 events) or threaten (11 events) EJ, depending on who is striving for controlling what or whom.

In my sample, the mobilization of PAs as advocacy tools is frequent among IPLCs (32 events) and NGOs (27). This usually favors EJ (67), as a case in Nairobi illustrates, where people mobilized by wearing T-shirts and carrying banners saying “don't rape our National Park”, to protest against the construction of a railway line (EJAtlas, 2017d). However, advocacy can also be detrimental for EJ, for instance, when the PA(DDD) at dispute enables extractivism (4 events). It is not uncommon for PAs to be ‘brought to court’ for the sake of EJ (see for example EJAtlas, 2016d, 2015b, 2014g). However, the use of the rule of law is not necessarily reported as enhancing EJ: in the case of PAs in Brazil’s Raposa Serra do Sol, for instance, landowners appealed to the Supreme Court, contesting the demarcation of the territory for Indigenous governance (EJAtlas, 2016a). Also the EJ implication of PA(DDD)s mobilized through policy instruments is found to be diverse, mainly depending on the purpose of the action or its consequences on IPLCs. PAs mobilized through financial means from large institutions, like the World Bank-funded Tana River Primate Reserves in Kenya (EJAtlas, 2014h), are often reported as carrying negative EJ implications (5 events). However, locally-sourced funding can also work in favor of EJ, as in the case of Puerto Rico’s Las Cucharillas Marsh, where the Communities United Against Contamination struggled to purchase about 500 ha of the region to ensure its protection through fines to local polluting industries (EJAtlas, 2017e).

Finally, all events mobilized by IPLCs against extractivist or development projects, or aimed at protecting IPLCs are described to have enhanced EJ concerns. Oppositely, corporate actors and mobilizations in favor of extractivism or development-led projects are reported in all events as detrimental to EJ. Corporations are found to promote highly controversial conservation-offsetting programs, meant to compensate for environmental damage somewhere else, as is the case of land grabbing through the registration of Legal Protection Reserves by agribusiness companies on community lands in Brazil's Matopiba region (EJAtlas, 2020c). In other cases, as mentioned before, they are in favor of PADDDs designed to allow conflictive extractivism and development projects.

6.5 Discussion

The global mapping of 474 cases of environmental conflicts located in PAs shows what type of disputes are at stake in many kinds of PAs. This quantitative characterization was then followed by a qualitative analysis of a sample of 174 mobilization events across 107 conflicts where diverse actors mobilize for, against, or through PAs, which helped to add nuance to the

role of PAs as tools influencing the origin, evolution and outcomes of environmental conflicts. The results provide insights into the global interplay between PAs and environmental conflicts, and the role PAs play in building EJ.

The high number of environmental conflicts overlapping with PAs discussed here illustrates various ways how conservation programs are also subject to social conflict. In this context, it is important to better understand the diverse kinds of conflict at stake. As the literature on PAs conflicts largely discusses conflicts caused by PAs (Soliku and Schraml, 2018), the results presented here show that there are many cases where PAs are not among the main drivers of conflicts but become the social, geographic, and political arenas in which diverse forms of struggle against extractivism emerge and unfold. Such an empirical evidence builds on the body of research documenting threats to PAs (Golden Kroner et al., 2019; Mascia et al., 2014; Mascia and Pailler, 2011b; Thieme et al., 2020). In line with this literature, my findings illustrate how industrial-scale human activity is a major menace to PAs as biodiversity conservation projects, and provide a better understanding of the origins and enabling conditions, trends, social mechanisms, and consequences of human activities touching ‘protected’ territories.

My sample only offers limited information on how the type of PA (e.g. Natural Park, Biosphere Reserve, Indigenous Territory, etc.) may influence the EJ outcomes of a given conflict. To better understand whether and how the nature of PAs influence the characteristics of environmental conflicts, further research is needed. A qualitative analysis of smaller samples of similar conflict contexts, where different types of PAs are at play, may deepen the understanding of the extent to which specific PA characteristics shape, and are being shaped by, environmental conflict dynamics. Furthermore, the low coverage of territories and areas formally conserved or entitled to IPLCs (e.g. ICCAs, Indigenous land) in my dataset skews my understanding towards areas governed or managed by state actors. Similarly, my approach is limited in exploring the role that time and space dimensions play in relation to the designation of PAs. In this sense, future research could focus on how conflicts develop over time and how they are linked to the specific moment when PAs have been established, or on specific geographical locations inside the PA - as many PAs are split into zones with different protection levels (e.g. Biosphere Reserves are divided into buffer, transition, core). Finally, while this research has focused on environmental conflicts located within PAs, further research could also look at conflicts located closeby, but outside their borders, as also in these cases the development of conflict and conservation may have shaped each other.

The qualitative analysis of descriptive information contained in the EJAtlas datasheets has helped to better understand how PAs can act as a conflict player. Although in my sample PAs

are not necessarily recognized as taking part in the conflict dynamics, we have seen the multifaceted ways in which PAs may play a role in the origins and dynamics of environmental conflicts. They can be the object of dispute or an outcome of it. I consider the perspective of PAs as conflict players as a contribution to the nexus between political ecology of environmental conflicts and conservation studies. I argue that it is both useful and desirable to look at PAs as a relevant non-human player within conflicting socio-ecological environments, a politicized and politicizable actor equipped (or not) with the power to drive the situation toward specific human interests. What interest they support is a main question at stake.

The fact that in my sample many pro-PA mobilizations work positively in EJ terms supports the idea that PAs hold the potential to be useful tools for customary land users affected by conflictive development and extractivism. Successful strategies that employ PAs against extractive industries, or cases where the establishment of a PA could support EJ, are sources of inspiration. In this sense, it becomes important to explore proposals of conservation theories that put equity and justice as core issues. For instance, *convivial conservation* scholars and initiatives offer many reflections in this direction (Büscher and Fletcher, 2020, 2019).

At the same time, the large number of pro-PA mobilizations detrimental to EJ produce severe concerns. It supports the thesis of conservation critiques that PAs create geographies where injustice is perpetuated, even by means of violence, to the benefit of powerful elites such as corporate and governmental actors at the expense of vulnerable sectors of society such as local customary groups (Anaya and Espírito-Santo, 2018; Brockington and Igoe, 2006; Dahlberg et al., 2010; Duffy et al., 2019; Fanari, 2022; Rights and Resources Initiative, 2018; Survival International, 2022).

The fact that PAs can produce opposite outcomes for EJ - i.e. as holding emancipatory potential for a just territorial stewardship vs. provoking severe threats to people and their territories – is reflected in the polarized debates about conservation, and may represent one among a number of factors explaining why conservationists with different perspectives think differently about PAs. Those who report best practices in PAs tend to think of the green side of my Figures, while critical conservation scholars speak loud about cases of injustice.

However, as my sample shows, the reality on the ground of environmental conflicts in PAs is complex and the roles that PAs play in diverse contexts of environmental conflicts is multifaceted. Various types of PAs, mobilized by diverse actors for different reasons and through different means will have different implications for EJ.

On the one hand, the data confirms the thesis of critical scholars that PAs can be problematic in terms of EJ. The declaration of PAs can be a reason for disputes. It can ignite the clashes between actors or it can be used to drive a conflict in favor of elite interests. Motives behind the designation of a PA include control over the territory and its resources or the compensation of negative environmental impact somewhere else. Similarly, alleged biodiversity conservation purposes do not necessarily work in favor of EJ, as they might align with interests of extractive or development industries.

On the other hand, not all PAs appear to be harmful to EJ. In many cases, environmental conflicts are related to problematic extractivism or development projects, and often the mobilization of PAs is acknowledged as a tool working in favor of EJ. In cases where people are threatened by the development or extractivist projects, PAs might become a useful tool for land stewardship. This happens not only in the Global North, but also in the Global South, where PAs are most problematized in the conservation literature. Moreover, the list of PADDD events that are mobilized as a license for controversial extractivism or development projects further shows how PAs can constitute an obstacle to the advancement of detrimental extractivist or industrial activities.

In conclusion, this Chapter contributes to the debates on the desirability and usefulness of PAs as SPIs. While conservation academics and practitioners tend to diverge on the desirability of more PAs, my analysis comes in support of positions recognizing the nuances of the role of PAs in conflicts within conservation debates. PAs are tools, mobilized by different actors and interests. Thus, they can be mobilized for a more or less (un)just transition towards sustainability. The results from this Chapter encourage intersectional understandings of conservation as a complex network of actors and embedded interests at play. Even if it is insightful to look at PAs in quantitative terms, it is crucial to qualitatively discuss their implications. Before asking how many PAs are needed, the question of what conservation model should be promoted must be addressed. The importance of considering the socio-political context in which PAs are embedded as institutions is crucial within conservation debates. Who gets to control access to territories and resources through PAs? What are the power relationships between the actors in play, and how do PAs shift their (im)balances?

7 Conclusions and future research

7.1 Main conclusions

This PhD dissertation contributes to the understanding of the implications of deployment of SPIs in the making of EJ. I explored the role of three prominent SPIs in the context of struggles against extractivism, drawing from information collected from a large sample of environmental conflicts that reflects the lived experience of communities impacted by controversial projects affecting their territories. I combined several approaches to explore the issue: the analysis of the Global Atlas of Environmental Justice and the World Database of Protected Areas, secondary literature reviews, fieldwork, interviews, counter-reporting, and comparative political ecology of environmental conflicts.

Specific objectives of this research were to study how the SPIs are mobilized by the actors involved, who are empowered by the instruments, and the related EJ implications. My results highlight a tension between the intended purpose of SPIs to protect the environment and its communities from unintended negative impacts of resources extraction and use for industrial purposes and their potential for misuse by state and market actors. In Chapter 4, I explained how different layers of unsustainabilities and controversies, including serious forms of environmental injustices, are hidden from the eyes of WeBuild's shareholders, since they are neglected in corporate sustainability reports. In turn, the multinational construction company wins sustainability awards and legitimizes their operations by leveraging existing CSR mechanisms. In Chapter 5, I explained how in Yucatán's RE conflicts, environmental law and land use plans tend to favor corporate actors, who promote and legitimize controversial projects through flawed paperwork. In the set of environmental conflicts in PAs compiled in Chapter 6, there are many instances where governments forcibly control the territory through fortress conservation, or where extractive industries offset their externalities through the designation of controversial PAs.

Nevertheless, results also show that, in some circumstances, environmental defenders and movements resort to the SPIs under discussion as a resistance strategy. In Chapter 5 I found instances of successful litigation against Yucatán's controversial solar and wind parks led by local activists. Similarly, in Chapter 6 I reported cases of environmental activists and movements promoting PAs, who end up working in blocking or restraining extractive industries from operation.

The diversity of records within the sample suggests that SPIs for the regulation of the development industry could in principle be conceptualized as instruments of power embodying tensions between their potential to advance EJ struggles and their susceptibility to manipulation in support of controversial development projects (Schneiberg and Lonsbury, 2017; Zabala, 2021). On one hand, in some circumstances, leveraging SPIs may be advantageous for environmental defenders. In other circumstances, the analyzed policy tools may become instruments of oppression or invisibilization of struggles against extractivism. These two situations could be conceived as extremes of a continuum of multifaceted realities where SPIs may play a more nuanced role in the making of EJ, somewhere in between these extremes. Nevertheless, the higher number of cases where serious environmental injustices and unsustainable practices occur also because of the misuse of regulatory frameworks and mechanisms points to an asymmetry within the dialectics of SPIs as instruments of power. My findings suggest that prominent SPIs that are supposed to prevent unsustainable behaviors are failing in building EJ. Rather, they can become an instrument of power in the hands of extractive industries.

Whether SPIs either advance or hinder EJ in a particular struggle depends on multiple factors. I consider central to understanding how power operates in SPIs deployment is the deliberate allocation of the formal authority granted to various actors within the SPI's governance. In the analyzed cases, CSR mechanisms are self-managed by private corporations. While the design of environmental law and land use plans foresees some degree of public participation mechanisms, their final approval and implementation is in the hands of governmental actors. The governance arrangements of a PA may also vary according to their nature. They range from State PAs to private conserved areas, through Indigenous territories. My reading from the analysis of different types of PIs suggests that mechanisms that guarantee some degree of control over the SPIs to environmental defenders and local and Indigenous communities may help in building EJ, to some extent. For instance, it is indicative that the controversial character of WeBuild’s projects described in Chapter 4 is not reflected in their sustainability reports, as the company is the only actor in charge of producing them. In turn, there are several instances where the SPI supports environmental defenders in holding back the advance of extractivism. In these cases, institutional mechanisms of public participation are foreseen. Examples of this are the successful cases of litigation in Yucatan described in Chapter 5 or to the designation of Indigenous territories reported in Chapter 6, granting authority to local communities over their ancestral lands. Therefore, addressing the nature of the authority over a PI in their design is key towards the making of EJ. The issue of institutional design within post-development, extractivism and EJ studies is therefore relevant, and worth exploring (see Escobar’s, 2018, as an example of a relevant effort in this direction). If the nature of SPIs as institutions may be

a crystallization of power asymmetries between actors in their design phase (Schneiberg and Lonsbury, 2017), the fact that major SPIs tend to work in favor of extractive industries may be symptomatic of uneven power relationships in the context of their conception. In other words, I contend that those powerful elites that promoted the sustainable development project in the first place (Escobar, 1995; Sachs, 1992; Swyngedouw, 2010) also could have managed to impose it through a design of SPIs that favors development industries rather than environmental defenders and impacted communities.

Nevertheless, it is important to remember that SPIs are an instrument of power, but not the only one at stake. Other more subtle, hidden or invisible forms of power play in the contexts analyzed, beyond the institutional sphere. These are those that Temper et al. (2018) call the *people and power networks* and *cultural* powers: respectively, the power to influence decisions and ideas. For instance, WeBuild leverages sustainability reports as institutional spaces from where to construct their own reputation by influencing discourses and narratives about the sustainability of their actions. In Yucatan, RE parks developers are found to exert influence over local authorities and local communities outside the legal sphere (e.g. through bribery). In most cases of fortress conservation I considered, authorities resort to the use of (para-) military forces to designate PAs. On the other side of the struggle, EJ movements employ mobilization strategies that include but are not limited to advocacy campaigns, local assemblies, street protests, development of alternative proposals, or coalition building with external allies such as activist-lawyers, critical scholars, journalists, and NGOs.

In conclusion, I advocate for nuance when discussing the relationship between SPIs and EJ. Taking an overly optimistic stance regarding the role of SPIs in advancing EJ may prove naïve, as my empirical findings demonstrate. While skepticism toward CSR mechanisms might be warranted, similar caution should extend to instruments that foresee some degree of public participation within their governance arrangements, such environmental legislation and PAs. Conversely, excessive skepticism towards SPIs may risk undermining institutional engagement by EJ movements, which can also be detrimental. Therefore, I propose contextually situated analyses of how SPIs may serve environmental defenders and movements, as these instruments inherently embed power dynamics that cannot be overlooked.

7.2 Limitations and future research

Future work may overcome some of the limitations of my research approach. As I employed a mix of different methodological approximations and geographical scales, each fitted to the

scope of the single SPI under scrutiny, findings for different SPIs are hardly comparable. A potential avenue for future research would be to use the same approach and scale for different sets of SPIs and compare how different SPIs typologies work differently towards making EJ. For example, it would be interesting to perform a global analysis of environmental law and CSR performance in EJ terms, as I did for PAs.

Also, basing the research on multiple cases of environmental conflicts did not allow me to reach a significant depth of understanding of the dynamics of single cases. For example, in Chapter 4, I could not explore how WeBuild made use of their sustainability reports in the context of the single conflict case. In Chapter 5, I did not delve into the long history of Yucatan's litigation cases to better understand the overall value it had for environmental defenders. In Chapter 6, I did not interview PA advocates to better grasp how important the support of the PA designation was for building EJ. Research on single case studies would overcome these shortcomings by adding depth on site-specific dynamics, such as how the use of SPIs is shaped by local contexts and histories.

Furthermore, single case study research could facilitate the work of co-producing knowledge with activists (Conde and Walter, 2022; Temper and Del Bene, 2016; L. Weber et al., 2024). In fact, even if inspired by this approach, for the most part (except for part of the research I conducted in Yucatan) my research draws on the collection of secondary sources, rather than on participatory engagement with impacted communities and environmental defenders. This brings me to question whether my research deeply reflects and respects the understandings of those who are directly involved in the struggles against extractivism. For the time being, I resolve this important concern by understanding my contribution as a personal reading that builds on the reports of those who better understand the dynamics of local struggles.

Regarding my compromise with environmental justice struggles, I am to keep on orienting my future work towards a militant scholarship that may be useful to movements and activists, by contributing to critical debates around the contested idea of *sustainability*. I am aware that the format and language of this PhD dissertation are shaped primarily by academic requirements and may not directly support the specific needs of environmental justice movements. To address this, I am actively working to disseminate my work beyond academic circles. Specifically, I have been engaging with media channels (Bontempi et al., 2022; Cegna, 2022, 2024; Patiño et al., 2025), sharing my findings in local movement assemblies whenever possible (see also the end of Section 4.5 for more detail on the impact of my research on WeBuild), and translating Chapter 5 to Spanish to make it accessible to local actors in Yucatan. Additionally, I have recently initiated new collaborations in the field of business political

ecology, aimed at deconstructing dominant narratives propagated by corporate actors portraying themselves as part of a *green transition*.

Future research could also explore potential and existing alternatives to mainstream SPIs. Scholars within post-colonial and post-development literature have developed frameworks to think and analyze tools and strategies for making EJ. For instance, the implications of the SPIs being mobilized by actors in environmental disputes could be interpreted by using the Socio-environmental Conflict Transformation framework, whose aim is to theoretically highlight what practices could help movements impact different types of power, institutional structures included (Rodriguez and Inturias, 2018). In terms of instrument design, other frameworks may be helpful. For instance, Kothari (2002) explains that radical sustainable alternatives to the status quo should respect a series of criteria, including ecological integrity and resilience, respect for ecological limits, ecological ethics, social well-being and justice, equity between communities and individuals, erasure of hierarchies, and direct democracy. Moving forward, research should explore how SPIs can be redesigned and governed to center the experiences of environmental defenders and local communities, while examining alternative frameworks that challenge the power asymmetries that currently enable extractivism to prevail under the guise of sustainable development.

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Appendix

List of Acronyms

CSIR	Corporate Social Irresponsibility
CSR	Corporate Social Responsibility
EIA	Environmental Impact Assessment
EJ	Environmental justice
EJAtlas	Global Atlas of Environmental Justice
IPLCs	Indigenous People and local communities
PA	Protected area
PI	Policy instrument
RE	Renewable energy
SEA	Strategic Environmental Assessment
SIA	Social Impact Assessment
SPI	Sustainability policy instrument
TNCs	Transnational corporations
WDPA	World Database of Protected Areas

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Annexes

Supplementary data can be found online at the following permanent addresses:

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Chapter 5	https://ars.els-cdn.com/content/image/1-s2.0-S0016718525000430-mmc1.pdf
Chapter 6	https://ars.els-cdn.com/content/image/1-s2.0-S0959378023001061-mmc1.docx