The Extractive Industries and Society 15 (2023) 101279

Contents lists available at ScienceDirect

The Extractive Industries and Society

journal homepage: www.elsevier.com/locate/exis

Original article

Environmental justice at the environmental courts? Mining, socioenvironmental conflicts, and environmental litigation in northern Chile

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ARTICLE INFO

Keywords:
Environmental courts
Environmental litigation
Mining
Chile

ABSTRACT

With the judicialization of politics and the creation of new environmental institutions, environmental litigation is now an increasingly common dimension of socioenvironmental conflicts. This study examines this pattern in the context of recently created environmental courts in Chile, focusing on lithium and copper mining litigation in the Atacama salt flats of the Antofagasta Region. I argue that while the courts are formally open to a wide variety of legal complaints, community groups face an uphill battle when using legal mobilization strategies due to the underlying political and economic power of the mining industry in northern Chile. Nevertheless, environmental litigation matters for environmental policy implementation because it reveals conflicts over environmental compliance, highlighting gaps between environmental laws on the books and actual practices. In this sense, environmental litigation activates environmental regulations and can provide communities with greater leverage to demand stronger enforcement, even as the long-term implications of judicial rulings for addressing current and past harms remain to be seen. The paper is based on documents from the Chilean environmental courts database, media sources, and twenty-two semi-structured interviews with activists and community leaders, lawyers, scientists, and government officials to better interpret and contextualize the court archival data.

1. Introduction

Across Latin America, courts have been playing an increasingly central role in politics, with activist struggles moving into judicial arenas (Benjamin 2012; Couso et al., 2010; Sieder, Schjolden and Angell 2005). The judicialization of politics is happening through the confluence of two processes: on the one hand, "top down" judicialization involving the creation of new courts and related institutions, and on the other hand, judicialization "from below" involving mobilization around legal rights and entitlements, emerging narratives to develop rights not yet protected by law, and repeated efforts by activists and their allies to use judicial mechanisms to advance their causes and show that rights on paper have practical consequences. Judicialization often reflects other institutional failures. When government institutions do not effectively guarantee rights, rights become increasingly asserted through the courts (Sieder, Schjolden and Angell 2005).

This judicialization of politics has reached socio-environmental struggles, where clashes over the social and environmental consequences of economic development premised on large-scale extractive industries have long led to social resistance by communities and activists (Arce 2014; Bebbington et al., 2008; Haslam and Tanimoune 2016; Svampa 2019). Residents affected by pollution and other environmental harms, or threatened with displacement, use multiple strategies to gain political leverage, mobilizing through disruptive protest politics as well as institutional channels and litigation. Courts thus increasingly represent new arenas of contestation at multiple scales, including at the transnational level (Fuentes 2017; Sieder et al., 2022). Judicialization as an overall trend has been developing in Latin America since the 1980s, but the pattern is not exclusive to the region. More than 1000 specialized environmental courts and tribunals have been set up in more than forty countries, including Brazil, Chile, Costa Rica, India, Kenya, and the Philippines (Pring and Pring 2009; 2016). Environmental rights are also claimed through non-specialized courts. Climate litigation, often relying on strategic human rights-based litigation to address the effects of climate change, is also becoming more common (Auz 2022; Peel and Lin 2019; Rodríguez-Garavito 2020).

While judicialization and litigation are more common, environmental litigation around conflicts with extractive industries poses

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https://doi.org/10.1016/j.exis.2023.101279
Received 17 December 2022; Received in revised form 9 May 2023; Accepted 30 May 2023
Available online 7 June 2023

distinctive challenges. First, litigation by community groups and public prosecutors often happens in parallel with legal actions by mining companies, taking place in historical contexts where legal frameworks have tended to privilege extractive industries (Sieder et al., 2022). Community groups may demand stronger enforcement of environmental regulations to place greater constraints on industry, attempt to gain access to more decision-making power by ensuring participatory processes overlooked at earlier environmental licensing stages are complied with, and organize around reparations for harms already inflicted. Yet companies may simultaneously contest such demands as well as using litigation to push back against environmental licensing and enforcement decisions by state agencies. Second, environmental litigation typically involves contestation over interrelated legal, scientific, and local knowledge claims (cf. Jasanoff 1995; Jasanoff 2018). To be successful in court, communities are expected to translate their demands into claims backed by credentialed knowledge and expertise, often in contexts where obtaining and interpreting reliable data is not straightforward. Judges are also called upon to evaluate the scientific aspects of cases to interpret how the law applies, as well as to be future-oriented by evaluating the potential long-term impacts of present-day decisions legally and in an ecological sense. Third, environmental litigation often raises larger considerations about land and water use, territorial autonomy, community health, displacement, and ontological relationships between society and the natural world. Sometimes courts address fundamental rights claims, such as those around the constitutional right to live in a healthy environment. Yet in the short term, many claims at specialized environmental courts and tribunals impact primarily the procedural dimension of ongoing conflicts, constrained to relatively narrow legal and technical interpretation. In other words, they constitute only one area where global environmental justice struggles involving questions of recognition, participation, and distribution play out (Martinez-Alier et al., 2016; Schlosberg 2004; Urkidi and Walter 2011).

In this context, to what extent does litigation at specialized environmental courts allow impacted communities to advance claims about environmental justice and contest the negative socioenvironmental impacts of extractive industries? In this paper, I examine this broader question through a case study of lithium and copper mining litigation relating to water at the Chilean environmental courts, which serve as a new institutional setting where disputes with the mining industry take place. Chile is recognized for its complex history of socioenvironmental conflicts as well as its trajectory from being considered a "green laggard" to more recently becoming regarded by some as a "regional leader" in environmental and climate policy (Madariaga 2018). Courts have been consequential and prior landmark cases marked major turning points, such as when the Supreme Court recognized the application of ILO Convention 169 for the first time since its ratification, ruling in favor of Aymara plaintiffs who sought recognition of ancestral water rights that the General Water Directorate granted to a mineral water company (Collao et al., 2020). Yet environmental laws and institutions like the environmental impact assessment office are also widely perceived to favor business interests and to have a "market-enabling" character (Huneeus et al., 2021; Tecklin et al., 2011), raising questions about the extent to which Chilean environmental institutions can be responsive to those demanding greater protections and environmental justice.

The recently created Chilean administrative environmental courts constitute part of the contested terrain where socioenvironmental conflicts play out, and where affected community groups, state agencies, and the mining industry translate conflicts into the legal-bureaucratic and scientific language of the courts. I argue that while the courts are formally open to a wide variety of legal complaints, community groups face an uphill battle when using legal strategies due to the underlying political economy of mining in northern Chile heavily favoring extractive industries, which have more resources, technical expertise, and political power. Nevertheless, complaints and lawsuits heard by the courts matter for environmental policy implementation because they reveal conflicts over environmental compliance. As such, they make gaps between environmental laws on the books and actual practices visible and legible as problems state agencies are obligated to address, even in the context of broader state commitments to policies favorable to the interests of extractive industries. In some cases, environmental litigation has allowed communities to indirectly create stronger enforcement. Court proceedings also have symbolic and practical consequences for socioenvironmental conflicts, ranging from procedural decisions like requiring new compliance plans from companies found violating their environmental license agreements to more substantive rulings mandating restoration of environmental damages. The broader implications of recognized compliance gaps are potentially significant, even when rulings themselves take a long time to be implemented or extractive activities continue, because bureaucratic actions that reveal problems but do little to address them detract from institutional legitimacy and exacerbate ongoing socioenvironmental conflicts.

The study draws primarily on legal and administrative documents filed with the environmental courts. The materials include original complaints, accompanying evidence, and sentencing outcomes, as well as video-recorded public hearings, legislative history documents, documents produced by other government agencies,[1] and media sources. I also rely on semi-structured interview data from conversations with twenty-two key respondents including activists and community leaders, lawyers involved with litigation at the environmental courts, scientists, and government officials at the courts and related agencies to better interpret and contextualize the court archival data.

2. Socioenvironmental conflicts, environmental courts, and the consequences of legal mobilization

Activists have long engaged in political struggles over the socioenvironmental impacts of large-scale extractive economies (Arce 2014; Bebbington et al., 2008; Haslam and Tanimoune 2016; Svampa 2019). As laws and institutions tasked with regulating impacts have become more prevalent, affected communities challenging the slow violence of disproportionate environmental burdens and displacement increasingly interact with environmental institutions in addition to relying on protest politics and direct negotiation with industry. Yet questions remain about how these policies and institutional changes are being implemented and enforced, and the extent to which environmental litigation allows impacted communities to contest the negative socioenvironmental impacts of extractive industries. Existing scholarship tends to approach this issue from two angles: one that reflects on the relative efficacy of litigation relative to other movement strategies and another that emphasizes environmental institutions themselves.

Some prior studies highlight the limitations of litigation as a movement strategy. Legal mobilization can be constrained by limited access to resources and the kinds of expertise recognized by the legal system, disputes over the legal and scientific legitimacy of claims, and an adjudication process mismatched to the pace and timing of socioenvironmental conflicts. Engaging with state institutions may detract resources and energy from potentially more effective strategies emphasizing disruptive politics and protest, especially if rights recognized in one jurisdiction may become invisible in another (Montoya et al., 2022). At worst, judicial processes can assist in criminalizing environmental and Indigenous activists (Birss 2017; Sieder et al., 2022). Furthermore, in cases where communities are resisting cultural and physical annihilation (Rodríguez-Garavito 2011: 266), discussions of court decisions and lengthy legal procedures are incongruous with what's at stake. Meanwhile, even favorable rulings face questions of

[1] These agencies include the Superintendency of the Environment (*Superintendencia del Medio Ambiente*), General Water Directorate (*Dirección General de Aguas*), Agricultural and Livestock Service (*Servicio Agrícola y Ganadero*), National Forest Corporation (*Corporación Nacional Forestal*), and the National Geological and Mining Service (*Servicio Nacional de Geología y Minería*).

follow-through and implementation.

Yet the effects of environmental litigation are variable and depend on multiple factors. For example, in Brazil, socioenvironmental activists benefitted from alliances with active public prosecutors in the *Ministério Público,* who added their legal expertise and resources to block problematic environmental licensing processes and challenge licenses in court (Hochstetler 2011; McAllister 2008). Activist groups that brought cases to the progressive Colombian Constitutional Court also successfully used legal activism in tandem with other movement strategies (Jaskoski 2022). By contrast, in Argentina, while informal connections between community groups and state officials influenced patterns of enforcement and environmental groups took both to the streets and to the courts, sometimes court orders were ignored or only partly complied with (Amengual 2016). In an analysis of environmental litigation involving energy facilities in Chile and Colombia, focusing primarily on Supreme Court cases involving protections of environmental and participatory rights, Barandiarán and Rubiano-Galvis (2019) found that environmental licensing litigation was relatively uncommon before 2008 and that during the period under study (1998–2016), corporations and civil society groups had similar rates of success and failure in court. Outside Latin America, environmentalist movements in the US and UK, for example, have used "legal opportunity structures" and access to the courts to advance their goals (Coglianese 2001; Vanhala 2012). In other sites in China and Australia, for instance, industry and state agency claims regarding environmental licensing have tended to be more successful in court than those filed by communities (Macintosh et al., 2018; Zining 2015).

Taking another approach emphasizing institutions, some scholars argue that while judicialization and litigation are more common, these patterns are complicated by "institutional weakness," which characterizes the gaps between what institutions are intended to achieve and their actual consequences, particularly in the case of newly created institutions. Some scholars argue that the mere creation of institutions may not change outcomes due to noncompliance and lack of enforcement of rules on paper, or because some institutions change too quickly to allow for stable expectations to emerge around them (Brinks et al., 2020). For example, courts may be created and decide cases, but judicial preferences may match those of elites, resulting in a less powerful institution. Similarly, prior consultation may be formally complied with, sometimes resulting in other non-trivial outcomes like redistribution of economic benefits, while extractive projects proceed anyway (Zaremberg and Torres Wong 2018) and new rights may not be enforced in practice (Gauri and Brinks, 2008).

Still, institutional weakness is not a static property so institutions and aspirational laws may become "activated" when political conditions shift, when community and activist groups using litigation alongside protest politics mobilize for compliance and enforcement, or when prosecutorial involvement in environmental protection strengthens the implementation of environmental laws (Brinks et al., 2020; Hochstetler and Keck 2007; McAllister 2008). State agencies have conflicting prerogatives and officials within state bureaucracies also do not have uniform interests and practices (McDonnell 2017; Morgan and Orloff 2017). States may protect the interests of business elites, but because states are not monolithic, there are openings, inconsistencies, and possibilities for engagement. Court proceedings reveal some of these inconsistencies, generating opportunities to contest environmental licensing processes, review environmental enforcement actions, and delineate environmental harms.

By documenting and bringing these problems within the boundaries of the state bureaucracy, judicial proceedings make compliance gaps more visible and legible. Scott's (1998) concept of legibility typically refers to how states make societies "knowable" so they can better control them, yet court proceedings create another dynamic of legibility whereby socioenvironmental conflicts produce specific rulings that require subsequent action from state institutions. Cause lawyers, activists, and affected communities navigate state institutions tasked with "managing" extractive development, and may activate institutions and rights as they file claims highlighting contradictions between environmental legislation and actual practices (Brinks et al., 2020). Representatives of the mining industry and state agencies are similarly enmeshed in such institutions and regulations.

3. Chilean environmental courts, legal challenges, and environmental compliance

In Chile, environmental courts were created as part of a political agreement relating to environmental reforms ushered in by environmental social mobilization as well as external pressures such as the country's entrance into the OECD (Carrasco and Maillet 2019; Sepúlveda and Villarroel 2012; Silva 2018). In a political culture that relies on the "authority of rules" and technocratic expertise, these reforms represented an attempt to simultaneously address socioenvironmental conflicts and depoliticize environmental politics (Barandiarán 2016).

3.1. Environmental reforms and new environmental institutions

The first environmental court in Chile opened its doors in August 2013 in Santiago, granting legal standing to any individual or organization making claims about the violation of environmental laws and regulations. Rafael Asenjo, a lawyer and scholar from the Universidad de Chile, was appointed as the first judge to the Santiago court—echoing a moment two decades earlier when Asenjo became the first director of the National Environmental Commission (CONAMA), the predecessor organization to the Ministry of the Environment. The following year, the Valdivia court opened and judges in the south began to receive cases. The Antofagasta court in the north, the last of the three specialized courts, opened several years later in 2017. The courts were designed to provide points of access to justice and dispute resolution relating to environmental questions in the three major geographic regions of Chile (Law 20,600, 2012).[2]

Sebastián Piñera was President when the environmental courts opened to the public, but the courts originated during Michelle Bachelet's first term in office. They were proposed following a set of environmental policy reforms that created the Superintendency of the Environment (SMA), a new environmental enforcement agency tasked with preventing environmental damages, monitoring impacts, and fining or otherwise penalizing companies when they do not comply with environmental laws and regulations. Conservative legislators backed the creation of the courts to preemptively limit the power of the new environmental enforcement agency and provide industry with a means to contest fines and other penalties. Environmental reforms promised access to environmental justice and rights protections, while simultaneously promising greater efficiency in environmental regulations and stability of rule of law to ease investors' expectations. The courts were born as ambiguous institutions, providing new openings for industry legal teams to contest unfavorable regulatory outcomes while also ostensibly offering a means for community groups and public prosecutors to make claims relating to environmental protections.

In Chile, environmental litigation long predates the creation of specialized environmental courts and there are instances of consequential decisions. For example, in one well-known case involving Codelco damaging the marine environment in Chañaral, the Supreme Court ruled that the mining company should stop dumping its mineral tailings into the ocean (Asenjo 1989). Yet as environmental conflicts multiplied, the Chilean judiciary had faced increasing criticism for

[2] Antofagasta's Environmental Court covers Arica y Parinacota, Tarapacá, Antofagasta, Atacama, and Coquimbo; Santiago's Environmental Court covers Valparaíso, Región Metropolitana, O'Higgins, and Maule; and Valdivia's Environmental Court covers Ñuble, Biobío, Araucanía, Los Ríos, Los Lagos, Aysén, Magallanes y Antártica Chilena.

lacking the specialized knowledge and expertise to adjudicate environmental cases, and even avoiding issuing rulings on this basis (Biblioteca del Congreso Nacional de Chile 2018, 7). The Chilean Supreme Court, for example, sometimes refused to issue rulings about environmental questions on the grounds judges lacked technical expertise to make sense of them. Even the *recurso de protección,* a judicial mechanism to protect against violations of fundamental rights that continues to be used for environmental and participatory rights, has been difficult to apply to environmental risk due to narrow definitions of harm in Chilean law. The Supreme Court sometimes argued that such complaints did not constitute the sort of urgent, immediate threat that typically characterized *recurso de protección* cases.[3] Architects of the new environmental courts designed them to combine legal and scientific expertise—with each court led by a panel of judges including professionals with formal legal training and those with training in the natural sciences. The courts are overseen by the Chilean Supreme Court—which remains the court of last resort for all appeals coming from environmental courts—though they do not formally form part of Chile's judicial system.

The environmental courts—along with the Ministry of the Environment, SEA, and the Superintendency of the Environment—are now part of a core configuration of agencies working on environmental regulation and enforcement. This core network, in turn, collaborates with officials from other agencies on data and monitoring.[4] For example, the SMA relies on other agencies, such as the General Water Directorate (DGA), the National Geology and Mining Service (SERNAGEOMIN), National Forest Corporation (CONAF), and regional environmental bodies to obtain data, conduct field visits, and coordinate about conditions in the field.

Cases that end up in the environmental courts are often tied to a procedure that plaintiffs argue was mishandled in another part of the environmental bureaucracy, such as at the environmental licensing stage or the oversight stage. For example, if a project was granted an environmental license without a full impact study or without consultation, plaintiffs can contest the project approval. Similarly, when a company already operating is found to be violating the law, their representatives develop a compliance plan to address infractions. According to SMA, the plan will only be approved if it "fulfills the criteria of integrity, efficacy, and verifiability," meaning the company takes responsibility for the infraction, eliminates its effects, and demonstrates compliance with regulations. When compliance plans are inadequate, they also often become contested in the environmental courts.

3.2. Litigation at the environmental courts

The most common claims received by environmental courts are complaints about the legality of government agency decisions about environmental questions (*recursos de reclamación*) and lawsuits for environmental damages (*demandas por daño ambiental*).[5] Some cases that are appealed end up at the Supreme Court. Cases cover a wide range of industries and land uses, ranging from mining and energy to agriculture and road infrastructure. The Santiago court became operational first, at which point it accepted all cases, but with all three courts, there are patterns emerging reflecting the geographic distribution of socio-environmental conflicts across Chile. For instance, the largest proportion of cases filed in Antofagasta relate to the mining industry, with more recent cases relating to the construction of new infrastructure for water desalination plants and solar energy. Meanwhile, the largest proportion of cases filed in Valdivia relate to hydroelectric energy and forestry.

Administrative complaints involve state agencies—especially Environmental Evaluation Service (*Servicio de Evaluación Ambiental, SEA*) decisions relating to environmental licensing and the SMA's decisions relating to oversight, enforcement, and fines for projects already under way. As an environmental court official explained, the court has an oversight role over the SEA and the SMA, so that a community can come to court and file a complaint that the SMA, for example, was not adequately monitoring compliance or issuing fines that are too low (Interview, 9 June 2022). Between 2013 and 2019, the three courts received 367 cases contesting the decisions of administrative agencies across sectors (see Table A1). Typically, community members, organized civil society groups, private companies, or municipalities file complaints. Plaintiffs tend to contest the terms of approval or denial of a proposed project, raise a specific problem such as lack of consultation, or question an enforcement procedure or fine. They often refer to specific terms of environmental assessment resolutions (*resoluciones de calificación ambiental*, RCA), which are the outcome of the environmental licensing process.

In environmental damage lawsuits, plaintiffs make claims about activities that resulted in environmental damage, appealing to judicial authority to assign responsibility and compel responsible parties to carry out reparations. Communities can file lawsuits for environmental damage directly but to date it has been the Chilean state, represented by the *Consejo de Defensa del Estado*, and municipalities that most often file claims against the mining industry in the public interest, citing problems such as water and soil contamination, air pollution, damage to wetlands, and untreated acid mine drainage. As a lawyer from the *Consejo* explained, often another state agency—for example, the General Water Directorate for cases concerning water—will contact his organization and provide information about the situation, the *Consejo* will study it, and file a lawsuit (Interview, 6 July 2022). The courts heard 113 cases across all sectors that claim some form of remedy for environmental damages between 2013 and 2019 (see Table A1).

Mining conflicts account for the highest proportion of cases heard by judges at the newly established courts, relative to other industries. Given the geography of mining in Chile, most mining-related cases correspond to the northern and central regional courts. These regions contain metallogenic belts with copper, molybdenum, iron, gold, and silver, as well as lithium deposits. At the Antofagasta Environmental Court, mining-related cases account for slightly more than half of all cases. At the Santiago Environmental Court, which has received more total cases encompassing many industries compared to the other two tribunals, mining still accounts for the largest proportion of complaints and more than half of environmental damage claims.

3.3. From socioenvironmental conflicts to legal challenges

Community organizations, typically represented by cause lawyers, contest the actual and potential impacts of perpetually expanding mining activity on their everyday lives. State representatives at the municipal or national level also file their own cases, demanding environmental remediation and voicing other concerns in the public interest. Mining companies simultaneously use the courts to challenge decisions of regulatory and enforcement agencies. In practice, legal challenges typically reflect three kinds of dynamics.

In *community-led* challenges, community residents or organizations affected by proposed or ongoing extractive projects file against a state agency situated in the environmental bureaucracy or directly against the

[3] The *recurso de protección* may be claimed to protect any constitutional right. The principle varies by country but resembles a *recurso de amparo* or an *acción de tutela*.

[4] SMA enforcement tools include requiring reporting, documenting violations, and issuing fines. Yet according to one public policy analysis, in its early years SMA lacked resources to set up adequate monitoring systems, appropriate technology, and lab space, which complicated carrying out even routine oversight activities without relying on contractors. Budget limitations also led SMA to have uneven presence throughout Chilean territory (Bergamini et al., 2017). A related study found that in 2014, environmental field inspections were up to 127 times as likely in the Santiago Metropolitan Region as they were in Tarapac.., the north of the country (Bergamini and P..rez 2015, 270).

[5] There are two other claim types called *exhortos* and *solicitudes*, but they represent a small proportion of cases and are beyond the scope of this paper.

company involved. When filing against the state, they make claims arguing that the agency in question (most often SEA or SMA) has not followed its own rules or failed to enforce environmental regulations on the books. Communities that successfully litigate against state agencies can indirectly create stronger enforcement. These cases of indirect pressure for environmental compliance represent patterns where community groups, fully aware of power asymmetries between themselves and mining companies, try to use and activate state machinery to get industry to comply with environmental standards. Such patterns differ from insider-outsider coalitions or "co-production," since they tend to be more adversarial while still working through institutional channels, making demands on state agencies involved in environmental enforcement to act vis-à-vis the mining industry.

For example, cause lawyers sometimes file complaints demonstrating that SEIA processes overlooked public participation and violated the right to consultation stipulated by ILO 169. In a case involving the Colla community at Río Jorquera, the Atacama Evaluation Commission approved an exploratory mining project, but local residents were not consulted. A prominent human rights lawyer representing the community argued that the RCA therefore violates ILO Convention 169 and other international human rights treaties that Chile is party to. They won the case, which mandated a full environmental impact study and a consultation process (Primer Tribunal Ambiental, R-38–2020), though the outcome is being appealed. During the Pascua Lama case, combined complaints by farmers from Alto del Carmen and Diaguita communities led to the SMA being ordered by the environmental court to revise its sanctions against the mining company, recognizing more numerous and serious infractions of its RCA as well as reconsidering the repercussions for those violations. In another complaint, filed by the Aymara association of Coposa, the Antofagasta Environmental Court ruled to nullify SMA's approval of Minera Collahuasi's compliance plan following the discovery of multiple violations, including overexploitation of groundwater sources (Primer Tribunal Ambiental, R-25-2019). Consequently, SMA was mandated to reopen penalty proceedings against the company, eventually requiring Collahuasi to invest more than USD$63 million to address infractions and develop a participatory monitoring plan with community members. The company was given 17 months to comply.

In *state-led* challenges, state agencies or municipalities file lawsuits against mining companies. The most common state-led challenge is public interest litigation, where state agency representatives try to hold companies accountable for environmental destruction. For example, the *Consejo de Defensa del Estado* may file an environmental damage lawsuit in a case involving water impacts by a mining company, thereby "activating" the section of 1994 environmental legislation that stipulates that reparation of environmental damages is part of constitutionally guaranteed environmental rights. Finally, in *industry-led* challenges, reversing this dynamic, companies file administrative complaints contesting decisions of administrative agencies that are part of the environmental bureaucratic apparatus. For instance, they may use litigation to push back against fines and how the terms of their RCAs are being enforced. When companies successfully use courts to challenge state agency decisions, they can push back against attempts to regulate or sanction their activities, weakening environmental compliance.

Categorizing cases in this way is not intended to reify the boundaries between state agencies and industry, but rather to provide a heuristic device to think about how socioenvironmental conflicts are translated into the legal setting and how legal proceedings play into their ongoing dynamics. While in court, there are clearly defined roles of plaintiff vs. defendant, with various state, civil society, and industry representatives appearing in each role, but these categories and relationships are not fixed and may recombine in different ways outside the court. For example, in enclave economies, local authorities may interact directly with mining companies and many community members may be directly employed in mining or indirectly rely on mining economies, meaning that industry becomes part of local governance dynamics (Rodríguez-Garavito 2011). Given a history of mistrust, some communities like those in the Salar de Atacama negotiate directly with companies—as well as using protest tactics and litigation—because they do not expect state institutions to come to their aid (Interview, 4 June 2022). But in the court setting, these roles are delineated in particular ways. Legal proceedings are one part of extended chains of events, involving other legal challenges, negotiation, contentious episodes, and more routine interactions between state officials, mining company employees, and community members.

A review of all mining cases in the environmental courts from 2013 to 2019 reveals that when it comes to administrative complaints against the environmental bureaucracy, community groups and the mining industry were filing claims at comparable rates (see Table A2). Community groups gained slightly more favorable rulings during this period, though this pattern is inconclusive given that not all cases have rulings, some rulings have been appealed, and the scope of rulings varies. When it comes to environmental damage claims, the notable pattern is that state-initiated lawsuits have been the most common and most likely to receive a favorable ruling (see Table A3). New patterns are emerging as well. At the Antofagasta Environmental Court, for example, several environmental damages lawsuits against mining companies recently concluded with settlement agreements that involve multiparty "roundtable" arrangements involving the *Consejo de Defensa del Estado*, community groups, and the mining company charged with violating environmental law. The terms of these agreements are guaranteed financially and typically involve other specialized state agencies providing technical oversight of restoration activities.

4. Case study: two mining conflicts and legal challenges in the salt flats of the Antofagasta region

The salt flats of the Atacama Desert are a contested site where pressures for the expansion of extractive industries collide with Indigenous communities' ongoing attempts to retain autonomy and address concerns about mining impacts on land and water, even as community members are employed by mining companies and local organizations such as the Consejo de Pueblos Atacameños have negotiated directly with companies like Albemarle to receive compensation and maintain some control in what many perceive to be an inevitable extractive process (Babidge 2013; Gundermann and Göbel 2018; Morales and Azócar 2019). Many disputes center on water availability and the implications of extracting groundwater at rates that threaten to undermine local ecosystems and communities. In this section, I will discuss two sites in the Antofagasta Region where legal challenges have been used alongside other strategies such as protest and negotiation. The sites are salient cases to explore early dynamics relating to the environmental courts because they involve highly productive and profitable extractive industries—an area containing a major lithium deposit and a major copper mine—as well as well-organized coalitions of Atacameño (Lickanantay) community leaders with resources to provide their own legal and technical expertise, and Chilean lawyers with extensive experience working on Indigenous rights and environmental protections.

In the first case, the Sociedad Química y Minera (SQM), the second-largest producer of lithium in the world, has been operating in the salt flats of northern Chile since the mid-1990s. SQM's activities are organized primarily around the extraction and production of lithium brine, pumped up from reservoirs of salty water beneath the salt flat and left in large pools to evaporate in the desert sun, later harvested for lithium carbonate. Lithium operations in the Atacama Desert continue to expand as global demand grows, generating ecological contradictions for short-term profit (Agusdinata et al., 2018; Bustos-Gallardo et al., 2021). The Atacama salt flat is the world's largest active lithium-brine deposit, and the most recent expansion was expected to allow SQM to triple its sales by 2025. The company also relies on a steady supply of freshwater to clean its equipment as well as other industrial processes.

SQM periodically seeks authorization from regulatory agencies to expand its operations. It is one such instance of expansion that ended up

in the environmental courts. The company sought to increase the quantities of lithium brine and freshwater extracted on the edges of the salt flats, as well as using more land for evaporation and waste storage. During the project approvals process, SQM was required by regulatory institutions to comply with specific conditions stipulating that expanding extractive activities would not negatively impact the hydrogeological and biotic systems of the Salar de Atacama. For example, if there were observed changes to the water table, SQM was required to extract less lithium brine. Seven years after authorization to proceed was granted, officials from several state agencies involved in oversight of the company's activities—including the SMA, SAG, the *Corporación Nacional Forestal* (CONAF), and the *Servicio Nacional de Geología y Minería* (SERNAGEOMIN)—discovered the company violated these conditions by extracting more lithium brine than authorized and ignoring early warning signs. SMA and SQM went back and forth about the violations for three years until the company presented a compliance plan and SMA agreed to suspend penalty proceedings.

Leaders from the Indigenous association Consejo de Pueblos Atacameños as well as local communities in Peine and Camar, represented by lawyers from the Observatorio Ciudadano, filed a series of complaints contesting the outcome and arguing that state regulators should reject SQM's compliance plan (Antofagasta Environmental Court Complaints R-17–2019, R-18–2019, R-19–2010). They questioned SQM's claims that its impacts on local ecosystems were insignificant, even judging by data provided by the company itself. They questioned the validity of data the company had collected from monitoring wells that were physically too far from the main area of extractive activity, as well as a methodology that did not consider the distribution of biodiversity throughout the area and the gradual fragmentation of the hydrological system in the salt flats. The legal team also pushed the environmental enforcement agency to get SQM to strengthen the compliance plan, establishing lower thresholds requiring them to change lithium brine extraction practices if groundwater levels were changing too rapidly. One lawyer who has represented communities from the Salar de Atacama in the environmental courts reflected how challenging data asymmetries can be in judicial proceedings, especially when it came to specialized information like hydrogeological data. Often, the company accused of the infraction has the most complete scientific data because of monitoring requirements. Since the data are not "public until shared with some state authority," generating alternative information "to question what the company presented" can be difficult (Interview, 11 April 2022). In this case, environmental regulators defended their decision and argued there was insufficient evidence of detrimental effects caused by excess extraction of lithium brine. Yet the legal team representing the communities argued that the precautionary principle was on their side.

The court sided with the plaintiffs, ruling that the Salar de Atacama was in a "fragile" condition, based on available data and high levels of scientific uncertainty about groundwater conditions in the salt flat. Given this fragility, the court could not rule out detrimental impacts attributed to extractive activities. The ruling nullified the compliance plan, forcing the Superintendency of the Environment to go back to the drawing board and reactivate proceedings against SQM, which would be required to address the negative effects of violations (Antofagasta Environmental Court Ruling, 26 December 2019). Yet a lawyer who frequently represents Atacameño communities reflected that even after the ruling recognizing the precautionary principle, SQM is continuing their operations. In other words, the ruling had not yet led to penalty proceedings to be sorted out, while allowing "the company to continue operating [without] a coherent measure in place to control the damage the State has already assessed." Uncertainty about the future health of the salt flat has been established and the environmental license granted by the state has been delegitimized, but what happens next remains unclear (Interview, 13 June 2022).

In the second case, public prosecutors at the *Consejo de Defensa del Estado*filed a lawsuit for environmental damages against BHP's Minera Escondida, operating the world's largest copper mine, for extracting too much groundwater from the Salar de Punta Negra, causing irreparable damage. As one lawyer put it, Minera Escondida was extracting "1600 liters per second for their project right in the middle of the Atacama desert." The level of the aquifer had descended well below the limit established in its agreement with the Chilean government—in some cases falling by 70 cm, even though the allowed margin had been 25 cm—but the company never informed anyone this was happening. They took measures such as reinjecting water into the aquifer that were later discredited, including by their own legal team. The lawyer noted that although community members had noticed environmental changes, they initially did not have the "hard data" to prove a violation had occurred. The community had to rely on state officials and scientists to collect, analyze, and model the data that would then be used to describe and make an argument about impacts (Interview, 11 April 2022). Another lawyer echoed these observations, arguing that state institutions were still far from recognizing the validity of ancestral and local knowledge of the salar's ecosystems, even though this was "beginning to be taken seriously." He explained that in interactions with state and industry officials, it was difficult to convince them the "territorial knowledge" of local communities often prevails over data provided by "the staff of some mining company," especially when it comes to "telling us that the threshold of an early warning plan in the salt flat is up to 25 cm, and if that threshold is exceeded, we would be facing an ecocide—irreparable environmental damage" (Interview, 13 June 2022).

As a leader from a community involved in the lawsuit reflected, even after a settlement agreement was reached, the process to address harm done will be long and open-ended. She reflected that it was difficult to create a dialog with the companies, get them to make environmental commitments, especially about water use, and force them to assume responsibility for their actions. She said, "Only recently have the large companies opened up to say 'well, let's sit down and talk,' because the law has also gradually changed and has imposed greater demands on them…But…they [often] say 'no, it is not my fault.'" In these cases, companies often cast blame on each other or "natural" processes rather than changing their own practices. The agreement contains nineteen measures that include removal of industrial infrastructure, a series of ecological and hydrogeological studies, and a long-term management plan involving restoration and compensation for damages (Settlement Agreement D-6–2020, Antofagasta Environmental Court, 25 May 2021), yet what is at stake, as one interviewee put it, is "sustaining life in the salt flat." The parties involved have been working since June 2021 and they are estimating it will take a decade to get the results they need. The community leader continued:

> …at least the Environmental Court ordered these measures on which we all agreed. Obviously, it was a long discussion process…[and] there is no compensation for the community. [The point] is to be able to establish the causes, let's say, of what happened, how to address them, and how to prevent them in the future, not only in that sector but also in others. (Interview, 8 June 2022)

An Atacameño scientist is less optimistic about the judicial route to environmental justice: "…When someone mentions environmental justice, I think it is…to start a process, to finish it and to resolve something. [With these new institutional spaces,] the State gives the option of starting something, but there...it remains…a long process…" (Interview, 17 June 2022). In this sense, even when some claims of environmental damage are formally recognized and legitimated by the courts, the effects on the ecosystem and for local communities have long time horizons during which other extractive activities continue unabated.

5. Discussion and conclusion

In this paper, I described the recently established environmental courts set up in Chile and discussed how community groups and cause lawyers are demanding greater accountability from lithium and copper

mining companies for the effects of their activities on local water sources in the Atacama Desert, with the broader aim of exploring the extent to which emerging patterns of environmental litigation allow impacted communities to advance claims about environmental justice and contest the negative socioenvironmental impacts of extractive industries. I argued that while communities face an uphill battle when using legal mobilization strategies due to the underlying economic and political power of mining companies in the region, environmental litigation reveals environmental compliance failures, making gaps between environmental laws and actual practices visible and legible as problems state agencies are obligated to address. Environmental litigation may therefore create some opportunities to advance environmental justice claims around recognition, participation, and distribution (Schlosberg 2004; Urkidi and Walter 2011). For example, court proceedings favorable to affected groups and ecosystems may offer recognition to community claims, adding symbolic power to less powerful actors in ongoing conflicts. Environmental court rulings may also create openings for greater procedural justice (e.g., if and when rulings require community consultation to be implemented) and distributive justice (e.g., compensation for damages, restoration of land and water affected by mining).

Environmental litigation can be a means for community groups to push state machinery toward providing better environmental and social protections—not by abstract guarantees of new laws and policies, but by calling for the implementation and stronger enforcement of laws and policies already on the books. In some cases, they may have immediate practical consequences—such as halting the extraction of groundwater from vulnerable areas, increasing fines, and requiring a community consultation process. Parallel processes whereby agencies like the General Water Directorate collaborate with public prosecutors to bring cases of environmental damage to the courts may also strengthen the position of community groups who otherwise may have limited access to technical and legal expertise. In other words, environmental litigation against mining industries may place constraints and slow down patterns of expropriation and exploitation that would otherwise likely take place even faster and at a greater scale.

Yet there are also limitations. Socioenvironmental conflicts occur as part of broader political struggles about the legacies of extractivism and the future of "development." The impacts of court rulings on ongoing socioenvironmental disputes tend to be incremental relative to the large political, economic, and moral questions they raise in contexts where the underlying political economy of mining favors continued extraction. Courts operate according to a rational-bureaucratic logic of rules requiring credentialed knowledge and particular modes of argumentation rooted in legal and scientific expertise. Often lengthy proceedings—for example, in cases where companies take the "environmental impact declaration" route to avoid consultation, are issued a permit by the SEA, have that permit challenged in court for lacking consultation, and are finally required to carry out a consultation, sometimes after a series of appeals—result in the same outcome, namely, the approval of the extractive activity (cf. Perreault 2015). The relatively new rulings regarding restoration of environmental damages have yet to be fully implemented. Carrying out rulings requires active engagement and additional oversight from state agencies, NGOs, and community groups—a process that is still in its incipient stages and represents uncharted territory. Successful claims by mining companies against state agencies may also weaken environmental compliance, as some mining companies are actively using the courts to fight fines, resist new monitoring demands, and avoid constraints imposed by state regulatory agencies.

In this sense, more resources for community-based data collection and legal representation, as well as cause lawyers representing communities, are necessary, as are strategies to address issues of fully staffing the courts and providing state agencies with the resources to assist with implementing rulings. If companies facing stricter demands on their operations are allowed to ignore court rulings and environmental institutions are unable to enforce recognized rights and regulations, then the environmental courts will simply contribute to the perception that in exchange for the promise of economic growth, the mining industry operates with impunity.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Acknowledgments

I am grateful to my interviewees for taking the time to be interviewed for this research. I thank Eduardo Silva, Zaraí Toledo Orozco, Katrin Uba, Roberta Rice, Jared Abbott, and members of the Research Group MEGA, based at the Center for Inter-American Policy and Research at Tulane University, for their comments on prior drafts. This paper also benefitted from feedback at the annual congress of the Latin American Studies Association and the American Sociological Association's Sociology of Development section conference, "Development in Dialogue: Engaging Practitioners and Other Disciplines." Many thanks to Juanita Vivas Bastidas for her assistance with coding legal documents and analyzing recordings of public hearings associated with cases discussed in the paper.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.exis.2023.101279.

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