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Social license to operate: an institutional critique and research framework

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ABSTRACT

The concept of Social License to Operate (SLO) addresses the need for mutual acceptance among governments, civil society, and private actors of what is considered as legitimate resource development. We identify two key shortcomings in current understandings of SLO: a dominant managerial lens that fails to account for the collective and institutional dimensions of an SLO, and the flawed belief that the mere absence of conflict signifies the presence of a social license. To address these gaps, we conceptualize SLO as a social institution, introduce a heuristic framework for empirical analysis, and explore the role of governance in fostering and sustaining an SLO. A reconstruction of the arduous evolution of a mining project in Chile illustrates how this framework helps assess institutional alignment, trace the governance process, and understand place-specific SLO dynamics. We conclude by emphasizing how this perspective offers practical insights for achieving inclusive development in resource-dependent regions.

1. Introduction

As the viability and pace of the energy transition depends on the supply of critical raw materials for mineral intensive new technologies (IEA, 2023; Li et al., 2024), mining is foreseen to grow significantly in the future, particularly in Latin America, the United States, and Canada (IEA, 2022a). The production of a standard electric vehicle, for instance, requires six times the minerals used in a conventional car, and an onshore wind plant requires nine times more minerals than a gas-fired power plant (IEA, 2022b; OECD, 2023). Yet, mining projects incur the risk of exacerbating existing social conflicts (EJAtlas, 2011; OCMAL, 2006). In Latin America, for instance, local communities have been concerned about the environmental and social impacts of resource extraction (Owen et al., 2022), including deforestation, pollution, and the displacement of local populations (Ciccantell and Patten, 2016). There is increasing awareness that the territories rich in resources often don't reap the benefits of these activities (Atienza et al., 2020), a curse that raises questions about inclusive development (Heeks et al., 2014; Rocha Menocal, 2020; The World Bank, 2008). Consequently, many so-called resource peripheries (Barton et al., 2008; Breul and Revilla Diez, 2018; Hayter et al., 2003) suffer from unsustainable growth with poor results in territorial development (Atienza et al., 2020).

Already before the new rush for critical raw materials, the social and environmental impactsof mining operations had been receiving growing attention: By the late 1990s, many investors within the mining industry had recognized the financial and reputational risks that conflicts with local communities entail (Curran, 2024; Dumbrell et al., 2021). As a consequence, mining companies gradually began to acknowledge that gaining the active support of local communities was fundamental to warrant the viability of their projects (Cooney, 2017; Joyce and Thomson, 2000; Thomson and Boutilier, 2011). In a 1997 industry conference organized by the World Bank, industry representative Jim Cooney highlighted the need for what he dubbed a social license to operate (SLO): an ongoing albeit not legally binding approval granted by local communities for operating mining projects (Cooney, 2017).

Although the concept of SLO was first mentioned years before the turn of the millennium, it has attracted significant academic interest only in recent years, as demonstrated by Dumbrell et al. (2020) in their comprehensive literature review. In this vein, it has been discussed in the context of different industries, such as pulp and paper manufacturing (Gunningham et al., 2004), forestry (Lähtinen et al., 2016), hydropower (Jijelava and Vanclay, 2018), onshore wind energy (Stephens and Robinson, 2021), and aquaculture (Whitmore et al., 2022). One expression of the importance of SLO is the fact that companies in the respective sectors increasingly elaborate on it in their annual sustainability reports (Barrick Gold Corporation, 2022; Mineral Resources, 2023; Pan American Silver, 2022; Siemens, 2022), consultants use it to advertise their services (AECOM, 2024; GHD, 2024), and countries like Chile and Argentina started to implement it in their laws and bills (BCN, 2023; Diputados Argentina, 2023). Despite its widespread use in

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corporate and political practice, scholarly research on SLO has left important gaps in understanding its social qualities as well as its emergence and maintenance.

In this paper, we critically examine current conceptualizations of SLO and highlight two key limitations. The first relates to the shortcomings of a unilateral, managerial perspective that fails to account for the collective nature of SLO. The second concerns the common but misleading assumption that the absence of conflict equates to the presence of SLO. To address these issues, we propose conceptualizing SLO as a social institution (Gutiérrez and Glückler, 2024), introduce an analytical framework for empirically assessing SLO, and explore how governance plays a role in its creation and maintenance.

In section 2, we take stock of existing SLO conceptualizations and identify their limitations. In section 3, we introduce a new approach, defining SLO as a social institution, i.e. a stable pattern of interactions based on shared normative expectations about legitimate behavior and sanctioned if these expectations are not met (Bathelt and Glückler, 2014; Farrell, 2018; Glückler and Lenz, 2016; Hodgson, 2006; Rodríguez-Pose, 2013; Scott, 2008). We next examine how SLO is built and sustained, proposing that governance enables institutional actors to do so through inclusive, collective decision-making processes. While inclusive approaches to SLO have been discussed in the literature, they are rarely analyzed from a governance perspective. An exception isPrno and Slocombe (2012), who explore the development of SLO in Canada's mining sector within a governance framework. In contrast, other scholars, such as Gunningham et al. (2004), Bice et al. (2017), Morrison (2014), and Smits et al. (2017), take a different approach by focusing on the distinctions and interactions among social, legal, and economic licenses and their relationships with various stakeholders. In section 4, we apply an institutional lens to SLO in a Chilean lithium mining case study, followed by our conclusions in section 5.

2. Taking stock of the literature on the concept of SLO

2.1. SLO as target and tool of corporate management

A significant portion of the literature on the *social license to operate* adopts a corporate-centric perspective, often exploring questions such as why businesses exceed regulatory compliance (Gunningham et al., 2004), how companies in the mining sector can secure a social license (Saenz, 2019), and how natural resource-dependent firms gain and lose SLO (Dumbrell et al., 2021). In line with this, Santiago et al. (2021) conducted a systematic review of 378 publications and found that most research in this domain focuses on management models and methods for measuring SLO. The dominance of this managerial approach can be attributed to the SLO's origins in the mining industry, where the concept emerged from observations made by political risk managers and consultants. These early practitioners not only articulated the concept (Cooney, 2017; Joyce and Thomson, 2000), but also scrutinized its dynamics (Gunningham et al., 2004), and developed foundational frameworks designed to assist businesses in securing a social license (Bice et al., 2017; Moffat and Zhang, 2014; Thomson and Boutilier, 2011).

Despite this progress, SLO remains a contested and ambiguous concept, with ongoing debates about its definition, purpose, application, and measurement (Curran, 2024; Lorca et al., 2022; O'Faircheallaigh and Babidge, 2023; Owen and Kemp, 2013; WSP, 2024). Scholars have argued that SLO lacks a robust theoretical foundation, prompting recent efforts to refine its conceptualization (Demuijnck and Fasterling, 2016; Gehman et al., 2017; Lacey and Lamont, 2014; Marais et al., 2024; Prno and Slocombe, 2012; Stuart et al., 2023). This growing body of critical scholarship suggests that the managerial approach, while widespread, may be inadequate for fully addressing the social dimensions of SLO. In this section, we critically examine two key limitations of the current state of the literature: first, we address the dominance of the managerial perspective, which invites criticism and risks reinforcing practices aimed at unilateral, short-term control. Second, we challenge the focus on appeasement rather than genuine engagement with communities, often framed through the lens of corporate risk management.

2.1.1. Limitations and risks of a dominant management perspective

SLO is frequently conceptualized within the framework of corporate risk management. For example, Cooney (2017) characterizes SLO as an objective of local political risk management, Joyce and Thomson (2000) describe it as a primary tool for managing social risk, and Gunningham et al. (2004) link SLO to risk mitigation strategies whereby firms exceed regulatory compliance to align with social expectations and avoid future liabilities. This approach frames SLO as something to be secured by the firm rather than as a social construct co-produced through dialogue and negotiation among a broader set of stakeholders.

The issue does not stem from the framing itself, which has undeniably contributed to the conceptual development and academic legitimization of SLO. Instead it is due to the disproportionate emphasis placed on this perspective within the scholarly literature. This imbalance has sparked skepticism about SLO's effectiveness in fostering inclusivity in resource development. Parsons et al. (2014) recognize that although SLO suggests a shift in power dynamics, dominant narratives often reduce it to a tool for legitimizing extractive operations. Similarly, Meesters and Behagel (2017) argue that some aspects of SLO lie beyond the scope of managerial control. Morrison (2014, p. 14) labels it as "a term invented by business, for business," while Demuijnck and Fasterling (2016) warn that viewing SLO solely through a managerial lens ignores its inherently social and unpredictable character. Owen and Kemp (2013) further argue that the mining industry's reliance on risk management limits its ability to adopt more participatory and sustainable development models. Reflecting these concerns, even consulting firms have begun using alternative terms like "social performance" to move away from associations of SLO. They highlight that despite its widespread use in discourse, there is little evidence that SLO has substantively influenced project planning in ways that meaningfully incorporate community perspectives (WSP, 2024).

The continued dominance of this framing carries the risk of perpetuating top-down practices that have historically marginalized local voices in decision-making processes. This limitation is increasingly apparent with civil society actors becoming more organized and politically empowered, often mobilizing against unilateral corporate actions that align with state-led economic strategies (Curran, 2024; Dumbrell et al., 2021; Joyce and Thomson, 2000). Such resistance highlights the shortcomings of managerial interpretations of SLO, particularly in settings where communities demand more substantive roles in shaping development trajectories. Latin America offers a salient illustration of this shift: the democratic transitions of the late 1990s and the concurrent rise of civil society organizations in countries such as Argentina, Chile, Peru, and Bolivia have fostered a political environment more conducive to bottom-up engagement. These developments underscore an urgent need to move beyond risk-based models toward participatory frameworks that prioritize dialogue, mutual recognition, and shared authority in resource development (Joyce and Thomson, 2000).

A notable example of these dynamics is the El Desquite project in Esquel, Argentina, where government authorities repeatedly prioritized the project's advancement at the expense of addressing local concerns (Urkidi and Walter, 2011; Walter, 2008). The Esquel community expressed significant dissatisfaction with the Mining Directorate's inadequate dissemination of information and the company's limited transparency regarding the use of chemicals. Tensions escalated when both the company and the government denied residents access to the project's Environmental Impact Assessment (EIA), with the provincial government of Chubut claiming the document was "too technical" for the community to comprehend (Walter, 2008). This dismissive approach intensified local opposition, culminating in a 2003 referendum in which 81 % of the population voted against the project (EJAtlas, 2011). Although the referendum was not legally binding, it effectively halted mining activities. In response to the overwhelming public dissent, the

regional government subsequently enacted a provincial ban on open-pit mining (Urkidi and Walter, 2011).

This example highlights the critical consequences of possessing a legal license while lacking local legitimacy. The conflict in Esquel underscores how damaging local opposition can be: the mining company suffered reputational harm due to its uncooperative approach, was forced to cease operations, and ultimately faced the imposition of stricter mining regulations. Similar cases have gradually eroded the legitimacy of both the mining industry and the formal government entities responsible for overseeing natural resource development (van Putten et al., 2018), opening up multiple levels of political authority in society.

Business scholars argue that the decline in corporate legitimacy has led companies to rely on outdated value creation strategies, often neglecting broader factors essential for long-term success (Porter and Kramer, 2011). This approach undermines the possibility of meaningful partnerships, a critical requirement for achieving SLO. Ostrom (1990) observes that in such contexts, the absence of trust and stable, long-term commitments creates an environment where parties expect opportunistic behavior, requiring costly monitoring and sanctioning mechanisms to enforce cooperation. Consequently, the prevailing notion that SLO is merely a risk management tool, unilaterally implementable by the operating company, perpetuates practices centered on appeasement rather than genuine engagement. As a result, the core causes of conflict are often ignored, which contributes to the aggravation of the risks the resources companies intend to mitigate.

2.1.2. A short-sighted understanding of SLO as appeasement

Traditionally, concerns about resource extraction have been managed through government regulations and voluntary industry initiatives (Sternberg et al., 2020). However, these approaches have frequently proven inadequate. For example, corporate social responsibility (CSR) programs often involve surveying community concerns but rarely address them comprehensively. Instead, companies frequently attempt to appease local stakeholders by implementing visible projects that attract media attention but fail to effectively address critical issues such as pollution, unemployment, and the equitable distribution of resource-generated wealth (Akporiaye and Webster, 2022). In other cases, the measures they implement adhere to standards that do not necessarily meet the needs of the local community, as one stakeholder manager mentioned to us in an interview: *"There are other companies that say: we only work on education issues. And they don't get involved in other issues, and you realize that maybe education is not the most needed or the most relevant [aspect] in that area."*

The shortcomings of such approaches are evident in high-profile Investor-State Dispute Settlement (ISDS) cases, where projects were halted for a variety of reasons closely tied to local community expectations (Curran, 2024). These reasons included demands to adjust wages in response to inflation, prevent community displacement, address historical injustices, protect indigenous rights, safeguard public health, and preserve tourist attractions. Despite this diversity of claims, conventional measures often adopt uniform strategies that fail to incorporate the unique contexts, histories, and needs of local communities.

Addressing these situations requires significant effort, often involving direct engagement with local communities. Resnick (2001) emphasizes that engagement is a continuous process in which two or more parties gradually develop interdependent relationships, resulting in normalized interactions through sustained dialogue and collaboration. This process is often skipped when companies turn to appeasement strategies, which require fewer resources and less time. Strategies of appeasement not only fail to resolve root causes of conflict but also hinder the establishment of meaningful, enduring relationships with local stakeholders. Because appeasement strategies are deeply embedded in the managerialist approach, a change of perspective is required to better grasp the nature of SLO within its broader social context. In section 3, we propose an alternative framework that conceptualizes SLO as a social institution. Unlike the current management-oriented perspective, this framing emphasizes governance as the foundational process through which SLO is built and maintained, offering a pathway to more inclusive outcomes.

2.2. The conflation of the absence of conflict with the presence of SLO

SLO is often perceived as absent when investor projects face disputes and opposition and as present when such resistance is not observed. However, while the presence and intensity of conflicts can reveal the social obstacles confronting an investor's project, the absence of overt conflict does not necessarily equate to genuine support for their activities. In that sense, Breakey et al. (2025) argue that for operations to have social legitimacy, they must be more than just tolerated; they need to be respected, supported, and/or trusted. We explore three scenarios where a lack of conflict should not be mistaken for legitimate support: (i) *Autocratic control or violent elite capture* - In such contexts, dissent may be suppressed through coercion or authoritarian measures, leaving no space for local communities to express their concerns. (ii) *Lack of awareness of negative impacts* - Communities may remain unaware of the long-term environmental, social, or economic consequences of a project, leading to passive acceptance rather than informed support. (iii) *Lack of alternatives and strong dependence on the impacting industry (company towns)* - In cases where communities are heavily reliant on one industry for jobs or resources, their silence may reflect lack of alternatives rather than agreement with the project's practices.

2.2.1. Autocratic control

An illustrative example of how the absence of overt conflict should not be equated with legitimate operation of resource projects arises in contexts where fear or habituation inhibits citizens from resisting government or elite actions. In Venezuela, for instance, the national government and Chevron recently signed an oil contract enabling Chevron to expand its oil production and operations in the country (Buitrago, 2022). This agreement was finalized without consulting the communities affected by these projects and, notably, without those communities actively demanding inclusion. Given the government's documented use of police force to suppress dissent, such acquiescence is perhaps unsurprising (Tremaria, 2022). Furthermore, restrictions on NGOs advocating for political rights, such as limits on their ability to receive external funding, further constrain their capacity to operate effectively (Gill, 2017). Under such conditions, communities face significant barriers to organizing, scrutinizing operations, or voicing concerns. The absence of resistance due to fear of oppression is not exclusive to autocratic governments. In Colombia, for example, agreements between multinational corporations and local elites have undermined the influence of local communities. Publicly documented collusion between paramilitary groups and corporations has been linked to widespread violence, including murders, massacres, forced disappearances, and displacement in the mining region of Cesar (Monsalve Friedman, 2022). This issue extends beyond the mining sector, as evidenced by the case of Chiquita Brands International. In June 2024, the U.S. Federal Court of South Florida found the company guilty of providing substantial assistance to paramilitaries in Colombia, facilitating the seizure of land from peasants and the suppression of labor union organizers (Márquez Velásquez, 2024). In such contexts, where dissent or resistance can provoke extreme violence, the lack of conflict reflects fear rather than genuine support.

2.2.2. Lack of awareness

Another example where the absence of conflict does not imply community approval arises when communities lack full comprehension of the information provided, receive ambiguous details, or are uninformed about project details. This can result from limited access to information, the mistaken belief that they are already familiar with the activity taking place in their area - leading them not to seek further

clarification - or from deliberate efforts by corporate decision-makers to obscure or withhold information. Koivurova et al. (2015) highlight this dynamic with the case of the Sydvaranger iron mine in Sør-Varanger, northern Norway. Originally operating from 1910 to 1997, the mine was reopened in 2009 by Sydvaranger Mining AS without resistance from the surrounding communities. Field interviews revealed that, because the mine was an existing site, the local community initially supported its reopening without expressing concerns or requesting an EIA before operations resumed. However, the company soon sought to double its production and began using unapproved chemical additives. This expansion initially faced resistance from the municipality, but the permit was narrowly approved following a subsequent vote. In 2010, Sydvaranger was fined for using unauthorized chemicals; however, the case was ultimately dismissed in 2014. These events generated opposition, as documented by Koivurova et al. (2015 p. 203) with community members later reflecting on their lack of knowledge about the project at its inception: *"What was publicized was a short notice on restarting the old mine, which we regarded as a positive utilization of resources [in a location] without any specific nature values […] We were not aware that it would entail permits for more fjord deposits […] , nor were we aware of the chemical additives."* Another interviewee confirmed that they were not proactive during the project's development, which is why they did not push for an EIA before operations resumed. Similarly, Rosyida et al. (2018) conducted a study on Bangka Island, Indonesia, examining local community acceptance of offshore tin mining by suction dredging (SD). The findings revealed that villagers initially accepted SD operations due to limited awareness of the potential impacts. The authors argue that public consultation meetings failed to facilitate active participation in the decision-making process, enabling companies to capitalize on the community's lack of knowledge and misunderstanding of the meetings' purpose. Among those who supported SD, most cited economic compensation and royalties as their primary reasons for acceptance, underscoring earlier points about appeasement strategies. Additionally, a quarter of SD supporters admitted to simply following the majority, without fully understanding the situation or its possible consequences.

2.2.3. Lack of alternatives

Finally, the absence of conflict cannot be equated with the presence of an SLO in situations where a community's survival is heavily dependent on a company's operations. In a qualitative study of SLO within the pulp and paper manufacturing industry in the United States, Canada, Australia, and New Zealand, Gunningham et al. (2004) found that several mills with poor environmental records did not face community opposition to their practices. This lack of resistance was attributed to the mills being located in company towns, i.e. communities established and sustained by a single business entity (Garner, 1992). In such towns, where a single employer dominates both local employment and the community's economic stability, criticism is often limited. Similarly, the case of the Sydvaranger iron mine in Sør-Varanger highlights how residents initially refrained from seeking additional information about the project, relying on their familiarity with mining activities in the area (Koivurova et al., 2015). Some residents later described feeling "asleep" and, as they started to raise concerns, they came to see that both local and central governments were primarily focused on safeguarding the jobs tied to the company that had long been part of the town's identity (Koivurova et al., 2015). Classifying cases where communities lack alternatives as not having an SLO is inherently challenging, as local actors' expectations - often minimal and primarily economic are typically met. Therefore, the absence of conflict is not necessarily the result of deceit or the threat of violence. Nevertheless, these circumstances are typically characterized by a lack of meaningful dialogue or participatory negotiation that might otherwise lead to a collectively endorsed agreement. Instead, the relationship between the company, the community, and government actors is shaped by long-standing economic reliance and a lack of viable alternatives. This enduring dependency tends to diminish the range and ambition of community expectations, often reducing them to the most basic economic considerations.

In summary, the three instances highlighted above underscore a significant limitation of excluding geography from the definition of SLO, as geographic context provides critical insights into the unique characteristics of each location where development projects take place. Resource development projects are frequently tied to strict regulatory frameworks and involve actors with divergent interests and power dynamics, all of which must be considered to comprehensively define and understand the principles underlying SLO.

Given these definitional challenges and the limitations of the managerialist perspective, how should SLO be conceptualized? In the remainder of this paper, we propose defining SLO as a social institution, for which to create and maintain, a process of governance is needed. This governance process provides a structure through which various institutional actors collaboratively create and uphold the SLO, highlighting its collective and evolving character. In doing so, our definition moves away from the notionof social acceptance as merely passive agreement, where a community may accept a project due to lack of awareness or alternatives, and instead frames SLO as a social institution jointly built on legitimate, mutual expectations.

3. An institutional approach to SLO

3.1. Defining social license to operate as a social institution

We define a *social license to operate* (SLO) as a social institution, i.e. a stable pattern of interactions, based on shared normative expectations about legitimate behavior, which is sanctioned in case of violation (Bathelt and Glückler, 2014; Farrell, 2018; Glückler and Lenz, 2016; Hodgson, 2006; Rodríguez-Pose, 2013; Scott, 2008). SLO includes all the components outlined in this definition: (a) an observable pattern of interactions, (b) a set of *normative expectations* (c) being shared and therefore considered *legitimate* (d) in a specific *institutional context*, (e) and *sanctions* to reinforce the reproduction of the interaction order.

Cooney (2017) describes the social license as the *continuous positive relationship* (a) between a mining company and local communities, achieved by aligning the company's actions with the community's aspirations. Building this relationship requires understanding each other's *expectations* (b) and aligning with those considered valid or *legitimate* (c). For instance, a community might want the company to prevent water pollution, while the company expects no resistance to their project. When both parties find these expectations legitimate and achievable, their interactions will focus on fulfilling them. If either party strays from this agreed-upon pattern, the other may impose *sanctions* (e). For example, if the company begins polluting the water, the community may initiate protests. If the involved actors are unable to effectively manage and resolve these disruptions, the institution of a social license could ultimately collapse.

A key aspect to acknowledge at this stage is the inherently asymmetrical nature of the social license. At the beginning, communities tend to hold a diverse set of expectations, whereas the company typically has just one: to carry out its operations without interference. This imbalance is also evident in how sanctions are applied. Communities can voice their dissatisfaction in various ways, including protests, social media activism, or by physically obstructing access to sites. On the other hand, a company's recourse is usually limited to the specific terms outlined in a certain agreement with the community. Additionally, community-imposed sanctions can prompt governmental responses, such as stricter regulation enforcement or the introduction of new rules to address public concerns, as discussed by Gunningham et al. (2004). However, if all penalties come exclusively from official authorities and show no sign of being influenced by public discontent, the issue pertains solely to legal licensing. For instance, if a government denies a project based on insufficient environmental mitigation in an impact assessment, and this decision is unrelated to any social opposition, it would be

classified purely as a legal licensing issue.

The interplay outlined above occurs within a specific *institutional context* (d). Communities have evolved and adopted diverse expectations often shaped by historical imprints (Marquis and Tilcsik, 2013) or path-dependent trajectories (Liebowitz and Margolis, 1995). Governments may equally constrain or support and defend these expectations, which is why Gehman et al. (2017) refer to SLO as a privilege. Additionally, the initial interactions between companies and local communities are guided by national laws or international standards, such as Environmental Impact Assessments or Free, Prior, and Informed Consent (FPIC). Therefore, understanding the institutional context in which resource development projects are situated is essential. The concept of the *institutional context* comprises three pillars (Glückler and Bathelt, 2017): (i) *rules*, i.e. the respective international, national, and regional norms (e.g. environmental laws, Environmental Impact Assessment regulations, or stipulations in mining concessions); (ii) *actors*, i.e. public authorities, resource companies, civil organizations and local citizens; and (iii) *institutions*, i.e. the institutions already established in the given context. Assessing these pillars provides insight into the regulatory framework, the dynamics and alliances among involved stakeholders, and the socially embedded norms and expectations that influence how interactions unfold in resource development projects.

3.2. Attaining a social license to operate by a process of governance

Defining SLO as a social institution reveals the intended outcome yet it does not specify the ways to reach it. To address this, we suggest incorporating a concept that enables empirical researchers to trace how SLO is built and maintained: *governance*. We conceive governance as the coordination among distinct stakeholders, who are interdependently linked by a collective problem, toward the achievement of consensual goals (Glückler et al., 2020). This implies a collective effort and therefore the inclusion of diverse participants. Hence, offering a unique coordination mechanism, separate from market and hierarchical systems (Jessop, 1998; Rhodes, 1996), where stakeholders collaborate to address shared challenges, rather than being governed themselves (Lee, 2003).

To effectively align efforts and resources (Begum and Momen, 2019), governance actors engage in exchanging information (Angst and Brandenberger, 2022; Kooiman, 2003), identifying problems, and exploring viable solutions (Kooiman, 2003). This process allows participants to share knowledge, develop mutual understanding of their interdependencies, and ultimately propose appropriate solutions while striving to reach consensus. As these interactions take place, relationships develop, leading to the recognition, alteration, or abandonment of interpersonal expectations (Fuhse, 2009). This helps to visualize preferrable futures while discarding those that are impossible due to the inability to accept the expectations of others, let go of one's own expectations or persuade others to change theirs. Jessop (1998, p. 33) refers to this characteristic of governance as *noise reduction*, i.e. the outcome of inter-organizational dialogue that can promote interpersonal trust and mutual understanding by stabilizing expectations. Similarly, Stoker (1998) describes it as the condition of governance to create order and structure.

We argue that governance is key for building an SLO. In governance processes, interdependent stakeholders seek to align their expectations and resources with common goals by way of continuous negotiation, establishing norms, making agreements, and enforcing monitoring systems. Regarding the maintenance of an SLO, Heaphy (2013) notes that institutions are maintained through social interactions among individuals within social networks. This poses the question of what holds the social structure together, and how actors respond to and resolve deviations. We contend that three governance principles can support the maintenance of SLO as a social institution: the *coexistence of autonomy and interdependence* (Kooiman, 2003); the *legitimacy* of participants and their decisions (Glückler, 2020; Stoker, 1998); and the *flexibility* that allows for learning through trial and error (Cerrillo i Martínez, 2005; Jessop, 1998).

First, *interdependence* serves as a cohesive force informing stakeholders that no single actor, whether public or private, has the complete knowledge, information, or overall perspective needed to tackle dynamic and varied societal issues alone (Kooiman, 2003). Simultaneously, *autonomy* serves as a mechanism that makes negotiations between conflicting interests both necessary and effective (Mayntz, 2003; Rhodes, 1996). Together, autonomy and interdependence promote continuous interactions among members, compelling them to exchange resources and negotiate shared objectives in an ongoing, iterative process (Peters and Pierre, 1998; Rhodes, 1996; Stoker, 1998).

Second, we conceive *legitimacy* as "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions" (Suchman, 1995, p. 574). Being a general characteristic of social institutions, legitimacy provides orientation in both expectations and acceptable behavior, and so ensures adherence to norms established within governance structures or social networks, justifies their presence, and fosters agreement among stakeholders (Börzel and Panke, 2007; Stoker, 1998). Without legitimacy, social networks risk collapse due to weak support, limited commitment, and an inability to foster cooperation or mobilize resources (Human and Provan, 2000; Stoker, 1998). Ostrom (1990) illustrated the necessity of legitimacy by drawing the example of Zanjera irrigation communities in the Philippines: technically efficient systems designed by external experts failed because they did not align with the locally accepted, legitimate water allocation practices, resulting in poor outcomes and inadequate system maintenance.

Thirdly, *flexibility* is crucial for participants to unlock their creative potential and adapt rules as needed - whether to refine them in response to new situations or to establish the most supportive rules from the outset. Researchers note that such flexibility is characteristic of heterarchical processes, which operate without hierarchical control, providing long-term strategic direction while remaining adaptable (Cerrillo i Martínez, 2005; Jessop, 1998). Tracking a two-year water governance process in Chile's Aconcagua basin, for instance, Gutiérrez and Glückler (2022) found that flexibility wasespecially importantin the early stages. During this period, there was considerable uncertainty about which norms would best support agreement monitoring. Analyzing 82 governance meetings, they observed that only by the 38th meeting had participants developed acceptable measures aligned with their initial objectives.

3.3. An analytical framework for empirical assessment

Combining an institutional understanding of SLO (section 3.1) with a dynamic perspective of governance (section 3.2) offers the opportunity to define an analytical framework that not only copes with the shortcomings of the dominant management approach (section 2.1) and of traditional conflations with the absence of conflict (section 2.2) but is useful for a relational framing of SLO as a social institution. An analytical framework is a structured tool that helps researchers identify, organize, and relate the key elements of a phenomenon to guide empirical inquiry (Miles and Huberman, 1994; Ostrom, 2005). The framework suggested for studying SLO consists of three interconnected stages: situation, process and outcome that each require empirical analysis to assess as well as to help drive the dynamic emergence of SLO as an institution. The framework, including its stages, elements and interrelations is outlined in detail in Table 1.

Stage A: *situation*. The first step consists of analyzing the *institutional context*, which includes the three pillars of *regulations*, *actors*, and *institutions* that shape the setting in which SLO takes form. After having identified the prevalent regulations, actors, and institutions in a given context, it is important to assess the quality of their interrelation: institutional contexts can be coherent, i.e. regulations and institutions converge to alignment, or incoherent, i.e. institutions diverge from

Table 1
Analytical framework for the empirical analysis of SLO as a social institution.

Stage	Pillar	Definition	Analysis	Relation to stage B. (Process)
A. Situation *Institutional context*	Regulations	Formal rules at different administrative scales, incl. laws, directives, etc.	Identify legal and other formal norms that regulate behavior.	Sets the legal and authoritative boundaries for governance agency and mechanism
	Actors	Public, private, and civic, stakeholders, individual or collective, incl. their interests and resources	Map the involved actors, including the networks of potential coalitions or conflicts.	Informs on different powers (categorical and relational) of actors and what coordination strategies may be viable.
	Institutions	Stable interaction patterns based on shared normative expectations, which are sanctioned if violated.	Identify recurrent patterns of legitimate behavior and practices of enforcement.	Shapes governance mechanisms (e.g. trust, reciprocity); affects legitimacy and maintenance of governance structures.
	Assessment of the institutional context: Depending on the interrelations among the pillars, an institutional context can be evaluated either as coherent, i.e. regulations and institutions largely converge, or incoherent, i.e. institutions and regulations diverge from another. Generally, coherent contexts pose higher isomorphic pressure on governance practices and new institutions to align with established norms.			
Stage	Pillar	Definition	Analysis	Relation to stage A. (Situation)
B. Process *Governance*	Governance object	The good or service being at issue for coordination (e.g. land use, water distribution).	Identify how an issue shapes needs and causes conflicts.	Align governance with extant sets of regulations, e.g. resource access rules, property rights.
	Governance agency	Authoritative structure that controls how rules and decisions are made.	Identify how authority is structured and who participates in it.	Level and scope of authority in governance depends on regulations and actor constellations.
	Governance mechanism	Formal & informal methods for coordination, decision-making and control.	Identify how actors make and respond to collective decisions.	Governance effectiveness depends on aligning mechanisms with existing norms and expectations.
	Assessment of the governance process: The effectiveness and legitimacy of a governance process depends on its alignment with the institutional context (Stage A) and the level of inclusion/participation of its stakeholders.			
Stage				
C. Outcome *Social license*	**Assessment of the institutionalization of a social license to operate**: The institutionalization of a place-specific legitimate SLO evolves by alignment with or mutual shaping of the institutional context (Stage A) and by driving an inclusive governance process (Stage B), in which stakeholders negotiate, commit and participate in decision-making.			

regulatory norms (Glückler and Lenz, 2016; Helmke and Levitsky, 2004).

Stage B: *process*. The second step is to analyze the *governance* being implemented by the affected stakeholders. Assessment of any governance process requires analyzing the *governance object*, instances of *governance agency*, and methods enacted as *governance mechanisms* that together enable decision-making and coordination among stakeholders. Such assessment of a governance process informs stakeholders on how to improve alignment of the governance process with the *institutional context* (Stage A) as well as with the possibly divergent expectations by previously excluded stakeholders and so support the institutionalization of a social license.

Stage C: *outcome*. The final step focuses on the analysis of the emergence (or absence) of a social license, which is the social institution of shared and legitimate expectations of how resource projects shall be conducted. The SLO is seen as the result of a *governance process* (stage B) within a specific *institutional context* (stage A). It is necessary to assess how this institutional context is compatible, coherent or even complementary with the social license to be built (Boyer, 2005). Depending on this assessment, actors may enjoy more/less leeway to nest the SLO within the institutional context or have to conduct institutional work to mutually shape new institutional coherence (Glückler and Eckhardt, 2022).

While the institutional context (Stage A) sets the authoritative, normative, material and social conditions, it is by way of driving a governance process (Stage B) that stakeholders negotiate, commit and participate in decision-making. Shared norms and beliefs emerge asstakeholders achievemutual understanding, align their interests and successfully*reduce noise* in order to reach mutually beneficial outcomes. With a pattern of interactions gradually becoming recurrent in similar situations, a proto-institution (Lawrence et al., 2002) of SLO may emerge: new practices and rules that result from collaborative efforts and have the potential to become institutionalized if adopted more broadly beyond the initial collaboration. By building an SLO through these stages, the framework supports systematic empirical analysis, highlights the links between institutions and governance, and offers a clear structure for comparison across cases. It gives researchers a practical and grounded way to study how social licenses are created, sustained, or lost in different settings.

4. Case illustration: revisiting the CPA-Rockwood Lithium SLO

To illustrate the value-added of an institutional view on SLO as well as the analytical framework presented above, we revisit the widely studied case of a Lithium mining project in Chile, which faced several obstacles and took over seven years from application to final approval. Our re-appraisal is based on published research on the CPA-Rockwood Lithium case (Bonilla, 2020; Lorca et al., 2022; O'Faircheallaigh and Babidge, 2023) as well as our own detailed analysis of the legal process by reviewing official government records and reports published by the mining company Albemarle.

4.1. The institutional context of the CPA-Rockwood Lithium social license

After a long time of exclusion from decisions about the allocation of mining projects (Bonilla, 2020; Lorca et al., 2022; O'Faircheallaigh and Babidge, 2023), indigenous communities today are included in consultations and negotiations about agreements with mining companies in the Salar de Atacama (SDA). This inclusion is enforced by indigenous and environmental regulations and Chile's commitment to international standards (Table 2), including the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) and ILO Convention 169 (Bonilla, 2020; O'Faircheallaigh and Babidge, 2023). A key agreement was established in 2016 between Rockwood Lithium (Albemarle Limitada since 2017) and the Consejo de Pueblos Atacameños (CPA). Its origins trace back to 2012, after Chile's Environmental Evaluation Service (SEA) had rejected Rockwood Lithium's project, "EIA Modifications and Improvement of the Solar Evaporation Pond System." To explain how this agreement was reached, we reconstruct both, the evolution of the legal process until final approval in 2016, and its association with the informal deliberations (the governance process) aimed at attaining a social license with indigenous communities. The agreement between the CPA and

Table 2
Pillars of the institutional context at the Salar de Atacama, Chile.

Pillar	**Explanation**
Regulation	**Meaning**
Law 19253	Enacted in 1993, Chile's legal framework recognizes and protects Indigenous rights, promoting development, cultural preservation, and identity.
Law 19300	Enacted in 1994, Chile's environmental law balances economic growth with sustainability. The Environmental Evaluation Service (SEA) enforces Law 19300 through the Environmental Impact Evaluation System (SEIA).
United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)	A non-binding international framework, UNDRIP sets standards for indigenous dignity, survival, and well-being. A key principle, Free, Prior, and Informed Consent (FPIC), mandates Indigenous approval for projects impacting their lands, territories, or rights. Chile endorsed UNDRIP in 2007, signaling alignment with its principles.
ILO Convention 169	A legally binding treaty, which protects indigenous and tribal rights. Chile ratified it in 2008, committing to its provisions.
Institutional actors	**Expectations**
Mining company: Rockwood Lithium	Project approval and operation without conflicts.
Municipality of San Pedro de Atacama	Mining projects should consider the interests and well-being of local communities, promote environmental responsibility, and ensure compliance with local regulations.
Indigenous communities: Consejo de Pueblos Atacameños (CPA)	Recognition of rights, fair compensation, participatory monitoring, and transparent data sharing.
Environmental Evaluation Service (SEA, in Spanish)	Projects should prioritize environmental protection, public health, and resource sustainability, ensuring compliance with Law 19300 and implementing effective mitigation measures.
Regional government entities, incl.: National Geology and Mining Service; General Water Directorate; Regional Secretariat of the Ministry of Public Works, etc.	Each entity expects projects to prioritize environmental protection and resource sustainability over other ends, focusing on the specific resources they manage or the services they provide.
Institutions	**Example**
Pre-existing institutions: Extractive economic institutions, i.e. patterns of interaction that extract wealth from one subset of society to benefit a different subset (Acemoglu and Robinson, 2013, p. 76).	The indigenous community of Toconao argued that the project offered little to no benefit to this part of Chile, referring to the areas neighboring the SDA (SEA, 2011).
Extractive political institutions, i.e. patterns of interactions between companies and communities that concentrate power in the hands of a narrow corporate and government elite (Acemoglu and Robinson, 2013, p. 81).	Indigenous communities in the SDA had been consistently excluded from consultations about new mining projects since the 1980s because they were not recognized as a legitimate group with territorial rights (Lorca et al., 2022; O'Faircheallaigh and Babidge, 2023).
Institutions emerging from the governance process: emergence of a *proto-institution*, i.e. new practices resulting from collaboration, offering the opportunity to become institutionalized when adopted more broadly beyond the initial collaboration (Lawrence et al., 2002, p. 281).	*Agreement CPA- Rockwood Lithium:* After long four years of negotiation, the mining company and indigenous communities reached mutual agreement about how to interact. It determines the compensation percentage to be provided to indigenous communities and establishes permanent working groups and collective monitoring activities for the salt flat (Albemarle, 2019; Bonilla, 2020; Lorca et al., 2022; O'Faircheallaigh and Babidge, 2023).

Note: The information about the actors related to the project was obtained from the official project's documents published by the government of Chile through the SEA platform (https://www.sea.gob.cl).

Rockwood Lithium can be reconstructed from an institutional perspective by characterizing the institutional context: the *regulations* surrounding the project in the SDA, the *institutional actors* involved, and the *institutions* that were in place at the moment of submission as well as the new proto-institutions that emerged during the governance process (Table 2). The vested interests and normative expectations of each actor played a crucial role in driving and shaping the process of governance, which we outline in the next section. An analysis of this governance process illustrates how institutional expectations were aligned – or the consequences when they were not.

The three pillars of the institutional context had been *coherently interrelated* for decades, in which powerful government and profit-seeking business agreed on the terms of resource exploitation in indigenous areas of Chile. Such exclusion facilitated the establishment of extractive institutions in many regions where resources were being exploited. Yet, the institutional context began to be transformed when Michelle Bachelet's administration endorsed UNDRIP in 2007 and ratified ILO Convention 169 in 2008. At the time when the mining project was submitted for application in 2009, the government had begun to be more sensitive to environmental impacts and more inclusive of the interests of indigenous communities. As a result, a period of incoherence emerged: previous corporate practices were no longer sufficient, and companies had to adapt to new requirements to obtain legal approval. This project was submitted during that transitional phase. We believe the company may have assumed that expanding production at an already established mining site would be straightforward. This could have been due to their failure to recognize the extent of the changes introduced by the new legal framework or their limited experience with it. This case illustrates how the interplay between institutional pillars - such as regulations and institutions - shapes the necessity and cost of building a social license to operate. In this instance, companies were required to adopt more inclusive approaches, and the adjustment process ultimately took seven years.

4.2. The governance process of the CPA-Rockwood Lithium social license

Initially, the mining company only pursued the attainment of a legal environmental permit to operate the project and so had overlooked the voice of the local communities. This unilateral approach led to the formal rejection of the application due to the lack of community involvement and inadequate mitigation measures in the Environmental Impact Assessment (EIA). Thereafter, a governance process started (Fig. 1), yet, it took seven years to finally obtain both legal and social licenses for operation. The institutionalization of the social license can be divided into three periods during which multiple institutional actors worked to align their interests for a mutual consensus, thereby

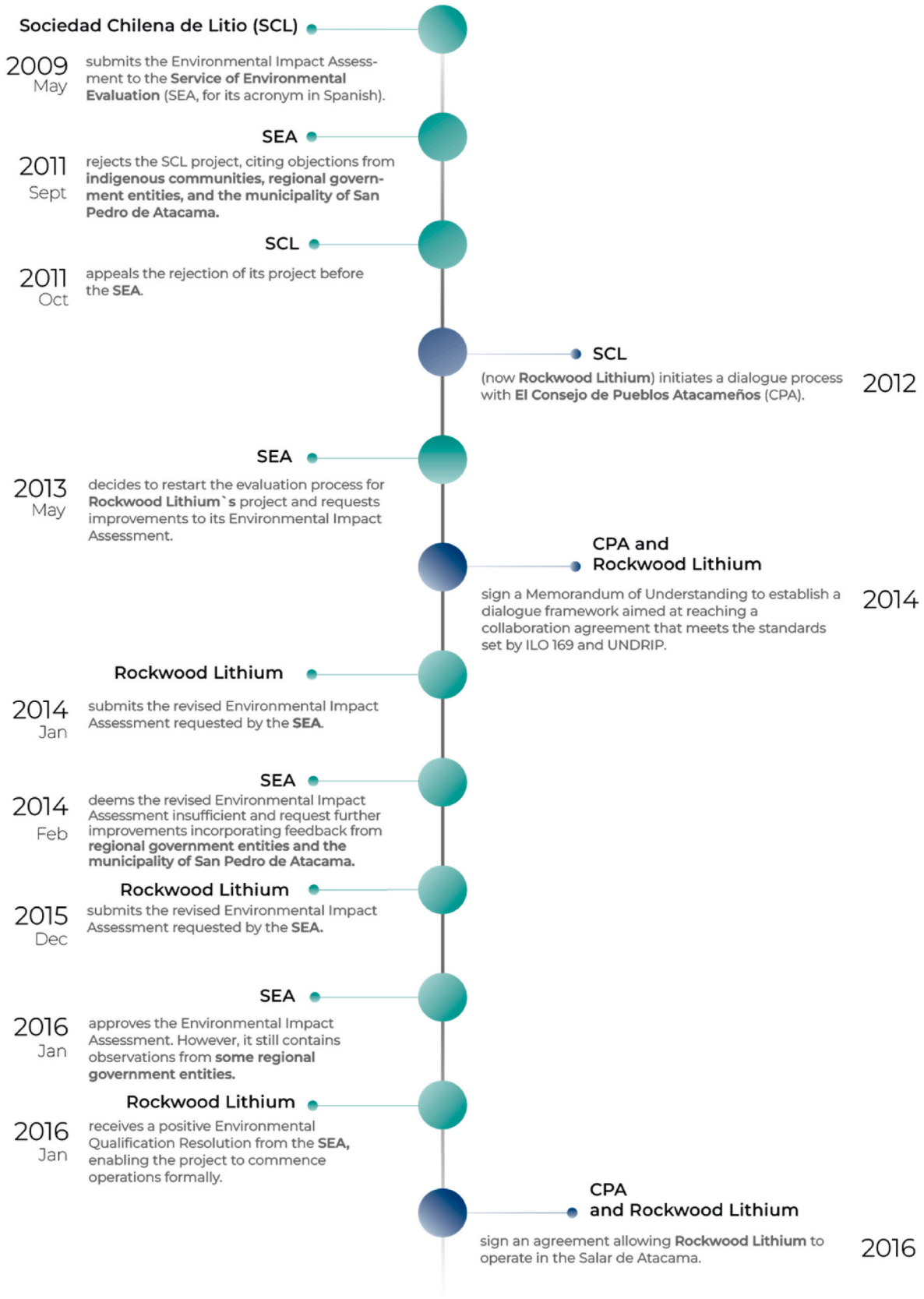

Fig. 1. Timeline of the project "EIA Modifications and Improvement of the Solar Evaporation Pond System," illustrating formal (green) and informal (blue) events leading up to its approval. The green represents interactions between the company and governmental entities, while the blue represents the informal process, particularly the agreement between the company and the CPA. The first blue marker indicates the start of the governance process. (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

institutionalizing the SLO.

Period 1: Project application and legal rejection (2009–2011). The mining company overlooked the *institutional context* by focusing merely on the legal license from the government. However, the misalignment of expectations was reflected in the SEA's rejection of the project application in 2011. SEA deemed the company's mitigation, restoration, and compensation measures inadequate under Article 11 (b, d, e) of Law 19.300, citing negative impacts on natural resources, local communities, and the area's scenic value. The regional government and the Municipality of San Pedro de Atacama also opposed the Environmental Impact Assessment, as detailed in the rejection resolution. For instance, the National Geology and Mining Service requested a more thorough study, new salt flat profiles, a refined analysis of freshwater-saline water interactions, adjustments to the pumping impact model, and enhanced water quality data. It also called for revised control and mitigation measures. The indigenous community of Toconao (CPA) criticized that the project provided little benefit to the region and raised concerns over their exclusion from brine and freshwater monitoring and limited access to bathymetric data. Legal as well as social denial of the project served as sanctions for violating governmental as well as indigenous expectations.

Period 2: Dialogue with indigenous communities (2012–2016). In October 2011, the company appealed the resolution halting its project and, in 2012, initiated dialogue with the CPA to address concerns and develop relations with the civil society. In 2013, SEA restarted the evaluation process, requiring significant improvements to the EIA to meet regulatory standards. In 2014, the company and the CPA implemented a tangible *governance mechanism* by signing a Memorandum of Understanding, which established a collaborative framework in line with ILO Convention 169 and UNDRIP. Although, in retrospect, there is no information on the *governance agency* and how the parties reached consensus, the agreement provided a structure for negotiation. Later that year, the company submitted a revised EIA incorporating prior feedback. However, after consulting regional entities and the Municipality of San Pedro de Atacama, SEA found the revisions insufficient and mandated further changes. Again, the project was sanctioned because the improved EIA did not meet governmental expectations.

Period 3: Attainment of legal and social license (2015–2016). In 2015, the company re-submitted a revised EIA, which was approved despite minor objections from within the region. In 2016, the company received a positive environmental qualification resolution and signed an agreement with the CPA. While the agreement's role in securing approval cannot be confirmed, government agencies viewed it favorably, referencing it in their final comments and requiring the company to uphold it. The Municipality of San Pedro de Atacama emphasized the need to honor compensatory agreements with ADI Atacama la Grande communities, while the SEREMI of Agriculture expressed satisfaction with the cooperation agreements supporting indigenous livelihoods. This process resulted in two contracts: the positive environmental qualification resolution granting *legal agreement* to operate the project while ruling the conditions for compliance, and the *social agreement* with the CPA, reflecting indigenous expectations in the SDA. The social agreement represents another *governance mechanism*, which determined how the company and Indigenous communities would collaborate within the SDA. This agreement was the outcome of four years of negotiations and was ruled to remain in effect as long as the company continue operations in the SDA. This open-ended agreement is uncommon compared to fixed-term agreements that are often linked to the term of a mining lease (O'Faircheallaigh and Babidge, 2023). Both the MoU and the social agreement with CPA established new practices and rules as a result of collaborative efforts, thus representing a proto-institution: This *social license* included several mutual commitments, including: annual compensations at the upper end of payments made to Indigenous peoples worldwide (O'Faircheallaigh and Babidge, 2023); a *Permanent Working Table Council* with the communities to report on operational activities (Albemarle, 2019; O'Faircheallaigh and Babidge, 2023); a *Participatory Monitoring Protocol* and an *Environmental Committee*; and a *Technical Secretariat*, consisting of environmental professionals to support the participatory environmental oversight carried out by the communities in relation to the company (Albemarle, 2019).

Because we did not conduct own fieldwork on the illustrative case of the CPA-Rockwood Lithium SLO, this reconstruction lacks complementary primary data and original voices by the distinct stakeholders about how negotiations and deliberations occurred and how they reached consensus. Hence, the application of the analytical framework outlined in section 4 remains partly incomplete with respect to the social process underlying the legal and social agreements as well as the relational nature of collective agency (e.g. intra community deliberations and community-government relations). Yet, to our knowledge, no prior research has applied an institutional lens to assess the institutions in place at the time of project submission.

5. Conclusions

The origin of the notion of social license to operate lies in the effort to seek mutual agreement regarding the interactions between governments, civil society, and private actors within a geographical context of resource development. This state of agreement is particularly important for countries rich in natural resources that often struggle with sustainable growth compared to countries with fewer resources —a phenomenon commonly referred to as the resource curse (Mikesell, 1997). To understand these disparities, it is necessary to move beyond purely economic factors and examine decision-making processes, the individuals involved, and their underlying motivations (Acemoglu and Robinson, 2013).

We have posited that conceptualizing SLO from a managerial view of appeasement risks falling short of the collective and multi-stakeholder nature of the phenomenon. We have further argued that despite the difficulties of empirical observation of a social license, it would be mistaken to conflate the absence of conflict with the actual presence of SLO. Instead, we have argued that for grasping the phenomenon underlying the notion of SLO, it is necessary to adopt an institutional approach and to conceptualize SLO as an institution. Hence, we have proposed a definition and detailed operationalization of SLO as a social institution. In addition, we have introduced a heuristic analytical framework that integrates institutional and governance concepts. Ideally, this framework informs (A) comprehensive empirical assessment of the (mis-)alignment of an *institutional context* at the beginning of a resource venture in a geographical location, (B) and the dynamic tracing of the *governance process* as collective coordination of social and legal deliberations for consensus among multiple stakeholders, (C) which together help analyze as well proactively build an SLO in accordance with the specific context of a geographical place.

Our empirical reconstruction of the CPA-Rockwood Lithium SLO helped illustrate the muti-faceted and collective nature of reaching legal and social consensus surrounding a mining project. A-priori institutional research designs promise to overcome the limits of a managerial view; first, by including multi-stakeholder and collective dynamics; second, by understanding underlying institutional expectations; third, by analyzing the (mis-)alignment of regulations, actor constellations and social institutions in their particular institutional context, and, finally, by discerning the object, agency and mechanism in the process of governance. Such a framework focuses no longer on the resource company as the single change agent but on collective agency and each stakeholder's involvement in developing mutual understanding and creating common consensus. Such an institution of social license merits support and credibility by multiple parties and offers the opportunity for sustainable and inclusive resource development.

CRediT authorship contribution statement

Johannes Glückler: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Resources, Project

administration, Methodology, Investigation, Funding acquisition, Conceptualization. **Denise Gutiérrez:** Writing – review & editing, Writing – original draft, Visualization, Validation, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

No data was used for the research described in the article.

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