13 Changes to the environmental monitoring institutions for the mining sector in San Juan, Argentina

Julieta Godfrid

Introduction

During the resource boom (2000–2013), mining in Argentina experienced unprecedented growth. In the late 1990s, the regulatory framework was amended to promote foreign investment (Moori Koenig & Bianco, 2003), and the country's first two large-scale metalliferous mines, Bajo Alumbra and Cerro Vanguardia, were established. Between 1998 and 2018, the value of Argentine mining exports rose by 400% (Ministerio de Hacienda, 2019). As of 2021, the country hosts twelve active gold and silver mines, two lithium mines, and one coal mine, as well as another four mines currently in construction (Secretaría de Minería, 2021). Despite the growth in the sector, mineral extraction is still of secondary importance to the Argentine economy, accounting for just 0.57% of gross domestic product in 2020.¹

Argentina's most-exported mineral is gold, which represents almost 4% of the country's total exports (Ministerio de Hacienda, 2019). In 2019, 2.2% of the gold extracted worldwide came from Argentina (US Geological Survey, 2020), primarily Santa Cruz (59.64%) and San Juan (39.18%) (Secretaría de Minería, 2020).

The expansion of mining in Argentina was accompanied by transformations to the sector's institutional framework that remain little analyzed. The present study focuses on changes to the environmental monitoring institutions for the mining sector in the province of San Juan during the period 1993–2020—specifically, those agencies under the auspices of San Juan's Secretariat of Environmental Management and Mining Oversight (*Secretaría de Gestión Ambiental y Control Minero*, SGACM). We selected San Juan as the province with the second-largest volume of gold extracted in Argentina and that which accounts for half of the country's mining potential (Prensa Ministerio de Minería, 2019). Analysis at the subnational level is crucial to the Argentine case, as administration and oversight of natural resources falls upon the provincial governments, as established by the constitutional reform of 1994. In this chapter we ask the following questions: How do environmental monitoring institutions for mining change in the context of sectoral expansion? What factors have driven the changes? What types of institutions result? We argue that the political decision

by the authorities in San Juan to prioritize mining conditioned the institutional change process and limited the capacity for environmental oversight as well as the means by which to respond to public demands for transparency and participation.

Our study draws on analysis of mining and environmental legislation at the levels of Argentina and San Juan province. Moreover, we explore institutional functionality, and the transformations thereto, by way of interviews conducted during our fieldwork in San Juan and in the departments of Iglesia and Jáchal—catalogued as areas of mining influence.²

Next, in the theoretical section, we provide a conceptual definition of our understanding of *institutions* and *institutional change*. Then, we analyze the transformations to environmental monitoring institutions for the mining sector in the province of San Juan, Argentina. In the analytical section we chart the historical development of the institutions starting from their creation in the 1990s, before looking at the factors that drive changes to the institutional framework. In the conclusions, we reflect on what the San Juan case tells us about the importance of the policy dimension for understanding processes of institutional change in extractive contexts.

State institutions, reproduction, and institutional change

Political institutions are rules, procedures, or mechanisms that formally (through organizations, legislation, or administrative bodies) or informally (through shared knowledge and values) curtail or enable political behavior (Levitsky & Murillo, 2009; O'Donnell, 1996; North, 1990). In this chapter, we center on state institutions, understood as those with the authority to subordinate other parties by invoking the public interest, as well as the ability to channel resources in order to tackle public problems (Oszlak, 1984). Brinks et al. (2020), distinguished between strong and weak institutions: the former are those with the capacity to achieve the non-trivial goals they set themselves, while the latter neither propose nor accomplish ambitious goals. Institutional weakness can be witnessed in both the instability of existing rules and the failure to comply with them, whether due to technical inability or to conscious political decisions. The proposal of these authors is crucial in that it foregrounds the political dimension of institutional weakness.

For state institutions to be able to reproduce over time, they must gain social acceptance (Orrù et al., 1991) and adapt to the context (Hall, 2010). This requires either a process of gradual change (Mahoney & Thelen, 2010) or *jolts* defined as “transient perturbations whose occurrences are difficult to foresee and whose impacts on organizations are disruptive and potentially inimical” (Meyer, 1982, p. 515). Institutional change can be recognized in a modification of the rules (Campbell, 2010) or the functions performed by these institutions (Streeck & Thelen, 2005). The literature has identified that internal or external factors can lie behind these institutional changes.

Among the most salient internal changes are the capacity of state agencies and their bureaucracies (Bersch et al., 2017; Evans, 1995), the economic resources that an institution has available (Hill & Hupe, 2002), and surveillance and sanctionary mechanisms (Sabatier, 1986). Also influential is the institutional environment (Meyer & Rowan, 1977; DiMaggio & Powell, 1983), which refers to the shared beliefs and logics that guide an institution's agents.

The external factors that can drive transformations include: a) the socio-economic context in which the institutions and their performance are socially perceived (Sabatier, 1986); b) the number of actors with power of veto that can limit the scope of an institution (Sabatier & Jenkins-Smith, 1999); and c) the actions of social movements or collective actions of protest (Bosi et al., 2016; Giugni, 2007; Kolb, 2007; Silva, 2018; Zald et al., 2005).

The transformations to the mining institutions in Latin America over the last twenty years are of particular interest when analyzing the dynamics of institutional change. Much of the literature has identified contextual elements among the explanatory factors for institutional change; these can be top-down, led by the actors who concentrate power; or bottom-up, stemming from civil society or social organizations (Orihuela et al., 2021). The former includes the role played by international credit rating agencies in the pro-market reconfiguration of state institutions (Kuramoto & Glave, 2007; Damonte, 2016; Svampa, 2019) as well as the influence of international trade agencies in state incorporation of environmental standards (Lanegra, 2018; Orihuela & Paredes, 2017). Notable among the latter are the social conflicts that drive bottom-up change (Arce, 2014; Bebbington et al., 2018; de Echave et al., 2009). To respond to social conflicts, governments have utilized various mechanisms: redistributive (Arellano Yanguas, 2011), environmental (Orihuela & Paredes, 2017), civic participation or consultation (de Echave, 2005; Leifsen et al., 2017; Jaskoski, 2014), and environmental monitoring (Himley, 2014).

Environmental control of mining in the province of San Juan, Argentina

In San Juan, the process of transforming the mining institutions began during the 1990s with the province's accession to Argentina's new regulatory framework around mining and the environment (Moscheni & de la Torre, 2017). Argentina's mining institutions were reformulated under the Assistance Program for the Argentine Mining Sector (*Programa de Asistencia para el Sector Minero Argentina*, PASMA) financed by the World Bank and the International Bank for Reconstruction and Development (Moori Koenig & Bianco, 2003). In a context of crisis for regional economies such as San Juan's, the central government used transfers from the national treasury to press the provinces into adopting the reforms (Favaro et al., 2006). The new mining legislation establishes a series of incentives to attract capital, including legal stability for thirty years and the limitation of royalties to 3% of the pit-head value (Table 13.1). As well as this external coercion, provincial deputies representing San Juan, such as José Luis Gioja,³ promoted legal reforms like amendments to the

Mining Code and the *Mining Investment Law* (Álvarez Huwiler, 2013). Alongside these changes to the mining laws came amendments to the environmental legislation—which also affected the mining sector—as part of an institutional *greening* process at the national level (Gutiérrez & Isuani, 2014). These legislative changes and adaptations to the mining and environmental regulations are outlined in Table 13.1.

In line with the provisions of the *Environmental Protection Law for Mining Activity*, San Juan's first two institutions tasked with the environmental monitoring of mining were created: the *Research Center for the Prevention of Mining and Industrial Pollution* (*Centro de Investigación para la Prevención de la Contaminación Minero-Industrial*, CIPCPAMI, 1996) the product of a technology transfer agreement with the *Japan International Cooperation Agency* (JICA); and the *Provincial Environmental Management Unit for Mining* (*Unidad de Gestión Ambiental Minera Provincial*, UPGAMP, 1998). The purpose of CIPCPAMI was to monitor the water courses in areas where mines had been established. For its part, UGAMP was tasked with assessing the environmental impact reports submitted by mining companies at each operational stage, as well as the corresponding two-yearly updates. Both institutions, as well as the application of environmental protection (No.1426) or assessment (No. 6800) environmental legislation, are dependent on the provincial mining authority (currently the Ministry of Mining). That is, the environmental oversight of mining is left to the sphere of mining itself and not to the Secretariat of the Environment, which is responsible for other activities that might generate an environmental impact (Decree No. 504-L).

Table 13.1 Overview of mining and environmental regulations (1993–2002)⁴

Argentina Law No.	San Juan Law/Decree No.	Year	Description
24,196	459 -M	1993	Mining investment
24,228		1993	Federal Mining Agreement
24,498	7199	1995	Update to Mining Code
	4392	1978	Water Code for the Province
	6872	1998	of San Juan
24,585		1995	Environmental Protection Law
	1426	1996	for Mining Activity
	6800	1997	Environmental Impact Declaration
25,243		1997	Supplementary Treaty on Mining between Argentina and Chile
25,675	513-L	2002	General Environmental Law
25,688		2002	Environmental Management Regimen for Water

Source: Compiled by author

The legal changes in the 1990s were key to the mining boom in San Juan, which began in 2003 with Barrick Gold's construction of Veladero.⁵ Other mines followed: Gualcamayo in 2009, which remained in operation in 2021, and Casposo, active from 2011 to 2019. Another gold and silver mining project was Pascua Lama, located in the border between Argentina and Chile; construction began in 2009 but was put on hold in 2020.⁶ In addition, San Juan has copper deposits that the José María project is looking to exploit. The initiation of new projects has translated into a larger share for mining and quarrying in the province's economy, having gone from 3% of gross geographic product (GGP) in 2004 to 10.4% in 2018 (IIESJ, 2019). In 2018, mining accounted for 72% of exports from San Juan, whose main destination was Canada (Ministerio de Hacienda, 2019).

From 2003, with the arrival to the provincial government of José Luis Gioja (2003–2015), mining became *state policy*, involving the promotion of mining investment and the guarantee of legal stability for companies (Gioja, 2006). José Luis Gioja governed for three terms (2003–2015), adding to his majority on each occasion: in 2003, he won 38.12%; in 2007, 51.81%; and in 2011, 68.16% (Ministerio del Interior, 2003, 2007, 2011). According to Gioja, mining was central to his election as governor: "I campaigned on mining. We opened Veladero on October 15th [2003] and the election was on the 23rd" (La Nación, 2006). Mining was the most promoted activity by the provincial government as well as the local press (Giovannini et al., 2009; Bottaro & Álvarez, 2014). During his three terms, Gioja's vision was to "turn San Juan into a leading mining jurisdiction" (Ministerio de Minería, 2019). The political prioritization of mining over other activities was crystallized in the government slogan *San Juan mining land*, first employed by Gioja (Panorama Minero, 2012) and still in use in 2020, under the governorship of Sergio Uñac⁷ (Mining Press, 2020; Gobierno de San Juan, 2020). For San Juan's political authorities, mining promotion became an *extractive imperative* (Arsel et al., 2016) that conditioned the process of institutional change we analyze here.

Gradual changes driven by social demands, 2003–2014

In San Juan, social conflicts around mining broke out in parallel with the construction of Veladero (Bottaro & Álvarez, 2014; Christel, 2020), and were centered mainly on the departments of Calingasta and Jáchal. Inhabitants deployed a broad *repertoire of collective actions*⁸ aimed at obtaining information, rejecting water concessions for mining, and calling for instances of civic participation and consultation.

Through social mobilization, large-scale mining became a socially problematized issue, and the matter of environmental monitoring of mining gained traction on the provincial political agenda (Henríquez & Nozica, 2010). Thus, the increased visibility of the conflict pressured San Juan's subnational government into introducing institutional changes within this sphere. The province's chief mining institution was gradually afforded greater hierarchical prominence; in

2006 it was promoted from the Subsecretariat to the Secretariat of Mining, and then in 2010 it became the Ministry of Mining. Similarly, in 2006 the Unit for Environmental Management of Mining (UGAM) became the Subsecretariat, and then, in 2010, the Secretariat of Environmental Management and Mining Oversight (*Secretaría de Gestión Ambiental y Control Minero*, SGACM).

In turn, between 2004 and 2006 three new institutions were created: the Consultative Mining Council (*Consejo Consultivo Minero*, CCM; Decree No. 1108); the Interdisciplinary Commission for Environmental Assessment of Mining (*Comisión Interdisciplinaria de Evaluación Ambiental Minera*, CIEAM; Decree No. 1815) and the Multidisciplinary Environmental Assessment Commission for Mining (*Comisión Evaluadora Multidisciplinaria Ambiental Minera*; 1679–2006 M). The recitals in the regulations refer to “justified social concern” and the need for “greater institutional and social oversight” (No. 1815). The aim of CCM was to create a body responsible for “reaching consensus and voicing opinion” (Decree No. 1108). CIEAM was tasked with the environmental assessment of large-scale mining projects, and CEMAM medium- and small-scale projects.

The new bodies called, almost without exception, institutions involved in mining or under the control of the provincial government. For example, CCM was made up of fourteen institutions that the founding decree classed as *qualified* to pass opinion. These included the Secretariat of Mining, the Argentine College of Mining Engineers (*Colegio Argentino de Ingenieros en Minas*), the Professional Council of Geological Sciences (*Consejo Profesional de Ciencias Geológicas*), the Mining Chamber of San Juan (*Cámara Minera de San Juan*), and the Argentine Mine Workers’ Association (*Asociación Obrera Minera Argentina*). The passage of *consultative opinions* required a quorum of at least twelve people, and the vote of half plus one of the representatives. In the case of a tie, the vote of the undersecretary of mining was worth two. Analysis of CCM minutes indicates a lack of critical voices (Ministerio de Minería, n.d.). The body was only active from 2004 to 2008 (Ministerio de Minería, n/d; Borges & Rittner, 2010).

For its part, the CIEAM also proved impervious to social demands for participation and transparency (Henríquez & Nozica, 2010). Pursuant to Decree No. 1815, CIEAM is composed of fifteen institutions;⁹ of these, eleven are directly answerable to the provincial government of San Juan, which appoints the leaders of these institutions. Of the rest, two are institutions that answer to the Argentine state, and the other two are autonomous universities. The exclusion of other independent actors, or those who might offer a broader perspective during the assessment process, attests to the strict political control that the San Juan government exercised over the new environmental oversight institutions, just as it did over other mining institutions (Haslam & Godfrid, 2020).

As had occurred during the 1990s, the institutional changes owed to external factors, but this time it was a bottom-up development arising out of social conflict. However, the demands for civic participation or consultation were not met in the way that the social organizations wanted. The state responded formally to the social demands by creating new rules and agencies, though their

implementation was limited because of restricted civic participation as well as funding shortfalls. Dargent and Urteaga (2016) characterized this type of state response, in which institutions are formally created or symbolic actions taken but hampered by inadequate funding or implementation, as *reactive*. Similarly, Levitsky and Murillo defined the bodies that result from such changes as “window-dressing institutions” that political leaders seek to keep “on the books” (2009, p. 120) in formal terms, but with little interest in actual application.

The outcomes of the changes reflect an institutional framework for environmental oversight of mining that is weak in terms of its failure not only to accomplish the goals it formally sets itself, but also—through the systematic exclusion of critical voices—to address the social concerns around mining. Nor does it succeed in improving the technical capacity for environmental oversight. According to information gathered through the interviews and the secondary sources, the technical capacity of the Secretariat for Environmental Management of Mining, the monitoring capacity of the CIPCAMI, and the assessment capacity of CIEAM present various deficiencies.

After ten years of activity, the Japanese cooperation agency responsible for the initial technology transfer assessed CIPCAMI and passed judgement on its “low sustainability” (JICA, 2007, p. 3). Among other things, JICA highlighted the provincial government’s underfunding of CIPCAMI, outmoded technology, inability to retain trained professionals, and failure to create self-financing mechanisms (JICA, 2007). With the exception of some equipment acquired in 2000 and later in 2010,¹⁰ most of CIPCAMI’s technology was not renewed until 2018 (Irusta, 2018). As well as the funding and staffing shortages, the Iglesia and Jáchal residents we interviewed expressed significant distrust of the data produced by CIPCAMI given its proximity to mining interests. Evidence of this distrust can be seen in the emergence of community water monitoring initiatives in Jáchal as an alternative to CIPCAMI (Ulloa et al., 2021).

According to some of the officials from CIEAM¹¹ interviewed, the body experienced high staff turnover due to unpaid overtime or lack of professional recognition for the work they did. There was no institutional memory that new entrants could draw from, giving rise to a pronounced asymmetry of knowledge between the mining companies (which submitted their reports every two years) and the officials assessing them. Nor was there any delimitation of which section of the environmental impact report that each institution should assess, resulting in overlaps in some cases and under-recording in others. Assessment was primarily conducted on the basis of the extensive corporate reports, with little scope for on-site observation. Finally, the opinions issued by CIEAM were placed before the San Juan’s chief mining authority for consideration, and in practice the decisions concerning the environmental impact declaration were more political than technical. Finally, according to the SGACM officials interviewed, in 2018 and 2019 the body was hindered by insufficient specialized personnel, low pay (which impeded retention), and precarious employment contracts. The previously mentioned capacity, resource, and equipment limitations did nothing to obstruct the passage of any mining projects, all of which

received the necessary approval from SGACM and the Ministry of Mining to proceed with the respective project stages. This is key to understanding that the weakness of the environmental oversight institutions for mining is down to a deliberate political decision on the part of the provincial government, which prefers that they exist on paper rather than assuring their implementation.

Changes due to jolts caused by environmental accidents, 2015–2019

On September 13, 2015, an environmental accident occurred at Veladero in which almost one million liters of “cyanide-bearing process solution” was discharged into the Jáchal basin (Barrick Gold Corporation, 2020, p. 108). The Ministry of Mining and the company delayed in informing the public of the fact, and the social conflict in Jáchal was stirred up again (Casas & Carelli, 2018; Godfrid & Damonte, 2020). The government of San Juan fined Barrick Gold (Redacción Perfil, 2015), and the Ministry of Mining announced it will modernize environmental oversight (Pastor, 2016). In 2016, the secretary of environmental management and mining oversight was replaced by the hitherto manager of the Casposo mine. Upon assuming office, the new secretary said: “This role is something totally different, but I feel good because I wasn’t a stranger to these people. . . . Here [at SGACM] he who wasn’t a student, was a colleague” (Tiempo de San Juan, 2016). The change represented a *closed-shop* solution that again involved actors who were invested in assuring the endurance of large-scale mining in the province.

In May 2016, the Ministry of Mining announced that it would increase the salaries of its mine inspectors, though this measure was not implemented at that time. From September to November that same year, the inspectors only conducted office-based tasks and disrupted mine oversight in protest at the unrealized salary rise (Huella Minera, 2016). In September 2016, there was another operational accident at Veladero, this time, a mineralized material spill (Barrick Gold, 2018). The courts in San Juan suspended the project from September 16 to October 3 (Télam, 2016), and the provincial government imposed a new financial penalty. Once the suspension was lifted, residents of Jáchal took the municipality building, demanding the mine’s permanent closure as well as environmental remediation (Larreta et al., 2018). Several of our interviewees from Iglesia and Jáchal felt that the government abandoned them in the immediate aftermath of the 2016 accident, pointing to a “lack of controls” and to “corrupt,” “deplorable” officials who were co-opted by corporate might. Residents of Jáchal engaged in demonstrations to demand a plebiscite on mining, but the provincial legislature did not approve one (Casas & Carelli, 2018). That same year the residents teamed up with environmental organizations for a protest in Buenos Aires over non-compliance with the National Law on Glaciers (No. 26,639).¹² In addition to the demonstrations, San Juan inhabitants filed two criminal complaints against the company for its part in the accident, and against the provincial government as well as national-level officials for non-compliance with environmental regulations (Mira, 2016).

As with the accident in 2015, the government's response was reactive, seeking to tackle the problem by announcing more funding: "more investment, more oversight" (Prensa Ministerio de Minería, 2018). The Ministry of Mining announced the acquisition of new vehicles for on-site inspections, as well as the expansion of its workforce (Tiempo de San Juan, 2016).

In March 2017, there was a third accident, a spill of mineralized material and chemical substances (Barrick Gold Corporation, 2018). The pattern that followed was the same as the previous two cases: temporary suspension, fine, social protests, and the announcement of a battery of measures to improve environmental oversight. In 2018, the number of mine inspections increased (Prensa Ministerio de Minería, 2019); cameras were installed to observe Veladero in real time as part of a program called *Mining Big Brother* (Prensa Ministerio de Minería, 2018); and CIPCAMI's cyanide-detection equipment was renewed (Irusta, 2018). The following year, SGACM opened its new headquarters after a two-year construction effort that cost 100 million pesos (Mining Press, 2019).

In addition, a whole new series of measures were announced that, after the social pressure abated, were not ultimately implemented. For example, in 2017 a new law (No. 1600-P) stipulated that municipalities in which mining was practiced could appoint an environmental prosecutor. But as of 2021, none of San Juan's municipalities had appointed anyone to such a role. Also in 2018, the Ministry of Mining signed an agreement with the Universidad Nacional de San Juan to produce an *information system for environmental monitoring of mining*. On this, the Minister of Mining noted: "In this way we will have transparent, agile, and truthful management of all information" (Aguirre, 2018). However, the necessary software was not implemented due to "political decisions" (interview with official from the San Juan Ministry of Mining, 12/4/2019).

As our analysis shows, at this stage the new measures that the government incorporated into the institutional framework for the environmental oversight of mining were also reactive, in the face of social conflict and environmental accidents. The pre-existing formal rules and bodies (CIPCAMI, CIEAM, CEMAM) were kept, and at this stage the changes were focused on a series of measures and announcements related to the renewal of the institutional leadership, as well as additional staff members, equipment, and funding. That most of the measures were announced on the government's news portal right after the disruptive events attests to their symbolic and political nature. The result of the changes introduced was a reactive institutional framework with neither the adequate technical capacity for environmental monitoring nor the requisite levels of public confidence in mining oversight. Consequently, San Juan is still blighted by civic mistrust regarding the government's environmental oversight of mining. In the words of one member of a Jáchal citizen assembly, "It is the attitude, not the building, that has to change; it is not an infrastructure problem" (Interview in Jáchal, 12/7/2019).

Conclusion

This Argentine case shows, as with other regional examples (Dargent & Urteaga, 2016), that the mining boom was accompanied by reactive institutional change. In San Juan, the transformation of environmental monitoring of mining has primarily been a reaction to external factors: coercion by international agencies (1993–2002), socio-environmental conflicts (2003–2014), and mining accidents (2015–2019).

The first stage of these changes was marked by the reformulation of the regulatory framework and the development of new sectoral institutions. In the 1990s, the legislative foundations were laid to position San Juan as one of the main destinations for foreign mining investment in Argentina, and they remain intact to this day. The second and third stages were characterized by the effects of social conflict and mining accidents. As a result of social protests, environmental control of mining became an issue of public interest that the San Juan government could not overlook. This public pressure prompted the creation of regulations, bodies, laws, and bureaucratic departments for the environmental oversight of mining that did not previously exist at the subnational level. However, the social demands were only met in formal terms, on paper.

Unlike the study by Dargent and Urteaga (2016), in our analysis we find that the changes introduced did not bring about an institutional strengthening process. On the contrary, in San Juan there is evidence that the institutional framework for environmental oversight of mining is weak, insofar as it does not meet the statutory goals proposed, the measures it implements are of limited long-term sustainability, and it has failed to gain public trust.

Following the proposals of Levitsky and Murillo (2009) and Brinks et al. (2020), we understand that institutional weakness corresponds to a political decision and a strategy to introduce formal amendments (place them *on the books*) that do not fundamentally alter the status quo. In the case of San Juan, institutions are created that in statutory terms are aimed at improving environmental oversight mining, but which, because of political decisions, are starved of the financial or technical resources they need to assure compliance. The statutory objectives of the institutions also include the implementation of mechanisms for addressing social concerns or promoting consensus, but actors with views that are critical of mining have been systematically excluded or denied the opportunity to participate in civic consultations. Thus, political authorities use different tactics in order not to fully implement the institutional changes incorporated. In line with the analysis of Maillet and Carrasco (this volume), we observe an *apparent change* in the institutions that entails transformations to the formal rules, but not substantive modifications that challenge extractive policies.

And while these institutional changes remain strictly formal, they still play a key role in legitimizing institutions in order to adapt to the wider context (Levitsky & Murillo, 2009). That is, the incorporation of institutional changes into the sphere of environmental oversight of mining in San Juan can be

understood as a strategy to legitimize the subnational government. In this regard, Brinks et al. (2020) have highlighted that changes to the institutional facade allow governments to legitimize their actions before international audiences that demand the incorporation of global standards, whether in terms of human rights, the environment, or other areas. This strategy of legitimation for international audiences can be observed in the overtures that the San Juan government makes to global investors, in which environmental management, mining oversight, transparency, and communication are cited as fundamental pillars of mining policy. But in addition to this purpose, in federal systems such as Argentina's in which the stewardship of natural resources depends on the subnational levels, the incorporation of institutional changes—however superficial—can also be central to ensuring governance.

For subnational administrations, the cost of not responding to social issues can be high, as evidenced by other studies on mining conflict in Argentina (Christel, 2020). However, as a final reflection, we believe that it is important to continue exploring the extent to which these changes, or *apparent changes*, to the institutional facade actually contribute to legitimizing institutions, or, conversely, whether they only make their limitations more apparent.

Notes

- 1 Compiled by author based on Instituto Nacional de Estadísticas y Censos (2021a, b), “Series por sector de actividad económica: valor bruto de producción y valor agregado bruto. Años 2004–2020, por trimestre” and “Series trimestrales de oferta y demanda globales. Años 2004–2020”, www.indec.gob.ar/indec/web/Nivel4-Tema-3-9-47 (Accessed 20/04/2021).
- 2 We carried out a total of 140 semi-structured interviews with subnational government officials, lawyers, and representatives of NGOs, foundations, socio-environmental assemblies, agricultural producers' associations, irrigation boards, neighbors' unions, chambers of commerce, and mining companies. The interviews took place in September 2016; September, November, and December 2018; and December 2019. The fieldwork was carried out in collaboration with Dr. Lautaro Clemenceau and with funding from the Argentine National Council of Scientific and Technical Research (Consejo Nacional de Investigaciones Científicas y Técnicas de la Argentina) and the Ford Foundation.
- 3 José Luis Gioja was deputy for the province of San Juan (1987–1991); deputy in the Argentine Chamber of Deputies (1991–1995); governor of the province of San Juan (2003–2015) and president of the Partido Justicialista, Argentina's biggest political party (2016–2021).
- 4 This table presents some of the most representative mining and environmental laws.
- 5 In 2017, 50% of Veladero was acquired by Shandong Gold Group.
- 6 In 2020, a Chilean court ordered the permanent closure of Pascua—Lama for breaches of its environment qualification resolution (Primer Tribunal Ambiental, 2020).
- 7 Sergio Uñac served as vice-governor of San Juan from 2011 to 2015, then as governor for two terms (2015–2019 and 2019–2023).
- 8 Repertoires of collective action are defined as a set of cultural practices learned during the process of social struggle that allow forms of protest to be expanded in a creative way (Tilly, 2002).
- 9 Each institution is required to appoint a named representative and an alternate.
- 10 In 2000, CIPCAMI acquired a device to check for the presence of chloride, and another for cyanide.

- 11 We interviewed representatives of seven different member institutions of CIEAM in 2016, 2018, and 2019.
- 12 Law No. 26,639, sanctioned in 2010, establishes the Minimum Budgets Regime for the Preservation of Glaciers and the Periglacial Environment.

References

- Aguirre, C. (2018, November 5). *La Provincia contará con software propio para el monitoreo ambiental minero*. Servicio informativo Gobierno de San Juan. <https://bit.ly/3xop3Sn>
- Álvarez Huwiler, L. (2013). *Políticas públicas y movimientos de capital: Un análisis a partir de las políticas de promoción de inversiones extranjeras en el sector minero metalífero argentino entre 1992 y 2007* [Doctoral thesis]. Universidad de Buenos Aires.
- Arce, M. (2014). *Resource extraction and protest in Peru*. University of Pittsburgh Press.
- Arellano Yanguas, J. (2011). Aggravating the resource curse: Decentralization, mining and conflict in Peru. *Journal of Development Studies*, 47(4), 617–638. <https://doi.org/10.1080/00220381003706478>
- Arsel, M., Hogenboom, B., & Pellegrini, L. (2016). The extractive imperative and the boom in environmental conflicts at the end of the progressive cycle in Latin America. *Extractive Industries and Society*, 3(4), 877–879. hdl.handle.net/11245.1/8d0bd84f-002b-4fe0-bb92-98741f98c79b
- Barrick Gold Corporation. (2018). *The new value champion: Annual report 2018*. Barrick Gold Corporation. <http://q4live.s22.clientfiles.s3-website-us-east-1.amazonaws.com/788666289/files/annual-report/Barrick-Annual-Report-2018.pdf>
- Barrick Gold Corporation. (2020). *Annual information form*. Barrick Gold Corp. q4live.s22.clientfiles.s3-website-us-east-1.amazonaws.com/788666289/files/annual-report/Barrick-Annual-Information-Form-2019.pdf
- Bebbington, A., Fash, B., & Rogan, J. (2018). Socio-environmental conflict, political settlements, and mining governance: A cross-border comparison, El Salvador and Honduras. *Latin American Perspectives*, 46(2), 84–106. <https://doi.org/10.1177/001418011770094582X18813567>
- Bersch, K., Praça, S., & Taylor, M. M. (2017). State capacity, bureaucratic politicization, and corruption in the Brazilian State. *Governance*, 30(1), 105–124. <https://doi.org/10.1111/gove.12196>
- Borges, A., & Rittner, D. (2010, April 21). San Juan: Consejo consultivo tiende a desaparecer. *Mining Press*. <http://miningpress.com/nota/47176/san-juan-consejo-consultivo-minero-tiende-a-desaparecer->
- Bosi, L., Giugni, M., & Uba, K. (Eds.). (2016). *The consequences of social movements*. Cambridge University Press. <https://doi.org/10.1017/CBO9781316337790>
- Bottaro, L., & Álvarez, M. (2014). La promoción del modelo minero en contextos subnacionales. Un recorrido analítico por las provincias de La Rioja y San Juan, Argentina. *OSAL*, 36. portal.amelica.org/ameli/jatsRepo/68/6823015/html/index.html
- Brinks, D., Levitsky, S., & Murillo, M. V. (2020). The political origins of institutional weakness. In D. Brinks, S. Levitsky, & M. V. Murillo (Eds.), *The politics of institutional weakness in Latin America* (pp. 1–40). Cambridge University Press.
- Campbell, J. L. (2010). Institutional reproduction and change. In G. Morgan, J. Campell, C. Crouch, O. Pedersen, & R. Whitley (Eds.), *The Oxford handbook of comparative institutional analysis* (pp. 87–117). Oxford University Press. <https://doi.org/10.1093/oxfordhdb/9780199233762.003.0005>
- Casas, J., & Carelli, J. M. (2018). La Asamblea Jáchal no se toca y la correlación de fuerzas en la lucha contra el extractivismo. *RevIISE- Revista de Ciencias Sociales y Humanas*, 10(10), 287–298. www.ojs.unsj.edu.ar/index.php/reviise/article/view/177

- Christel, L. (2020). Resistencias sociales y legislaciones mineras en las provincias argentinas. Los casos de Mendoza, Córdoba, Catamarca y San Juan (2003–2009). *Política y Gobierno*, 27(1), 3–24.
- Damonte, G. (2016). Minería, estado y comunidades: Cambios institucionales en el último ciclo de expansión extractiva en el Perú. Un balance de investigación. In Grupo de Análisis para el Desarrollo (GRADE) (Ed.), *Investigación para el desarrollo en el Perú: Once balances* (pp. 403–444). GRADE. www.grade.org.pe/wp-content/uploads/LIBROGRADE_DESARROLLO35.pdf
- Dargent, E., & Urteaga, M. (2016). Respuesta estatal por presiones externas: Los determinantes del fortalecimiento estatal frente al boom del oro en el Perú (2004–2015). *Revista de Ciencia Política*, 36(3), 655–677. <https://doi.org/10.4067/S0718-090X2016000300003>
- De Echave, C. J. (2005). *Los procesos de diálogo y la administración de conflictos en territorios de comunidades: El caso de la mina Tintaya en el Perú*. CooperAcción.
- De Echave, C. J., Diez, A., Huber, L., Revesz, B., Ricard Lanata, X., & Tanaka, M. (2009). *Minería y conflicto social*. CBC, CIPCA, CIES, IEP. repositorio.iep.org.pe/bitstream/handle/IEP/639/huber_mineriyayconflictosocial.pdf?sessionid=B68C015A42D0FBC7400563D4BDA6893C?sequence=2
- DiMaggio, P., & Powell, W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48(2), 147–160. <https://doi.org/10.2307/2095101>
- Evans, P. (1995). *Embedded autonomy: States and industrial transformation*. Princeton University Press.
- Favaro, O., Iuorno, G., & Cao, H. (2006). Política y protesta social en las provincias argentinas. In G. Caetano (Ed.), *Sujetos sociales y nuevas formas de protesta en la historia reciente de América Latina* (pp. 93–141). CLACSO. ISBN 987-1183-64-1
- Gioja, J. L. (2006). *Política minera provincial: “Nos espera un futuro venturoso”*. Ministerio de Minería. <http://serviciosmineria.sanjuan.gob.ar/politica/politica.php>
- Giovannini, S., Orellana, M., Rocchietti, D., & Vega, A. (2009). La construcción de San Juan como capital nacional de la minería: El concierto de voces entre el Estado y los medios de comunicación. In M. Svampa & M. Antonelli (Eds.), *Minería transnacional, narrativas del desarrollo y resistencias* (pp. 255–275). Biblos.
- Giugni, M. (2007). Useless protest? A time-series analysis of the policy outcomes of ecology, antinuclear, and peace movements in the United States, 1977–1995. *Mobilization*, 12(1), 53–77. <https://doi.org/10.17813/mai.12.1.b05j1087v7pxg382>
- Gobierno de San Juan. (2020). *San Juan, Mining Land*. <https://miningland.sanjuan.gob.ar/en/>
- Godfrid, J., & Damonte, G. (2020). La Provincia de San Juan entre la promoción minera y la defensa del agua: “Narrativas territoriales” en disputa. *Quid*, 16(13), 85–112.
- Gutiérrez, R., & Isuani, F. (2014). La emergencia del ambientalismo estatal y social en Argentina. *Revista de Administração Pública*, 48(2), 295–322. <https://doi.org/10.1590/0034-76121700>
- Hall, P. (2010). Historical institutionalism in rationalist and sociological perspective. In J. Mahoney & K. Thelen (Eds.), *Explaining institutional change: Ambiguity, agency, and power* (pp. 204–223). Cambridge University Press. <https://doi.org/10.1017/cbo9780511806414.009>
- Haslam, P., & Godfrid, J. (2020). Activists and regulatory politics: Institutional opportunities, information, and the activation of environmental regulation. *Extractive Industries and Society*, 7, 1077–1085. <https://doi.org/10.1016/j.exis.2020.06.019>
- Henríquez, M., & Nozica, G. N. (2010). Participación ciudadana y actividad minera. La experiencia en la provincia de San Juan, Argentina. *RevIISE—Revista de Ciencias Sociales y Humanas*, 1(1), 115–122. www.ojs.unsj.edu.ar/index.php/reviise/article/view/11

- Hill, M., & Hupe, P. (2002). *Implementing public policy*. Sage Publications. <https://doi.org/10.1017/S0047279403227288>
- Himley, M. (2014). Monitoring the impacts of extraction: Science and participation in the governance of mining in Peru. *Environment and Planning A: Economy and Space*, 46(5), 1069–1087. <https://doi.org/10.1068/a45631>
- Huella Minera. (2016, November 21). *Políada minera no sale a inspeccionar*. <https://bit.ly/3gFDKur>
- Instituto de Investigaciones Económicas y Estadísticas San Juan. (2019). *Producto geográfico bruto de la provincia de San Juan*. Gobierno de San Juan. https://drive.google.com/drive/folders/1ekAWmgMZVbjzoHQLCRUGDcSB_Jp7_Yw7
- Instituto Nacional de Estadísticas y Censos. (2021a). *Series por sector de actividad económica: Valor bruto de producción y valor agregado bruto. 2004–2020, by quarter*. www.indec.gob.ar/indec/web/Nivel4-Tema-3-9-47
- Instituto Nacional de Estadísticas y Censos. (2021b). *Series trimestrales de oferta y demanda globales. 2004–2020*. www.indec.gob.ar/indec/web/Nivel4-Tema-3-9-47
- Irusta, Á. (2018, July 19). *Suman tecnología que logra acelerar el análisis ambiental*. Diario de Cuyo. <https://bit.ly/3vodJE6>
- Japan International Cooperation Agency–JICA. (2007). *Ex-post evaluation of the Project “Mine Pollution Control Research Center (CIPCAMI) in the Republic of Argentina”*. JICA. <https://bit.ly/3gNTPg1>
- Jaskoski, M. (2014). Environmental licensing and conflict in Peru’s mining sector: A path-dependent analysis. *World Development*, 64(C), 873–883. <https://doi.org/10.1016/j.worlddev.2014.07.010>
- Kolb, F. (2007). *Protest and opportunities: The political outcomes of social movements*. Campus.
- Kuramoto, J., & Glave, M. (2007). La minería peruana: Lo que sabemos y lo que aún nos falta por saber. In GRADE (Ed.), *Investigación, políticas y desarrollo en el Perú* (pp. 135–181). GRADE.
- La Nación. (2006, February 26). *Gioja: “Es imposible que se pueda contaminar”*. www.lanacion.com.ar/politica/gioja-es-imposible-que-se-pueda-contaminar-nid784018/
- Lanegra, I. (2018). *El camino ambiental hacia la OCDE—El Perú y la implementación de las recomendaciones en materia ambiental*. Oxfam, Cooperación, Propuesta Ciudadana. cooperacion.org.pe/wp-content/uploads/2018/10/17070-El-camino-ambiental-hacia-la-OCDE-CORR-web.pdf
- Larreta, G., Sánchez, V., Donoso Ríos, M., & Rodríguez, R. (2018). La Asamblea Jáchal no se toca: Crónica de una catástrofe. *RevIISE- Revista de Ciencias Sociales y Humanas*, 10(10), 257–270. hdl.handle.net/11336/102962
- Leifsen, E., Vázquez, L. S., & Reyes, M. (2017). Claiming prior consultation, monitoring environmental impact: Counterwork by the use of formal instruments of participatory governance in Ecuador’s emerging mining sector. *Third World Quarterly*, 38(5), 1098–1109. <https://doi.org/10.1080/01436597.2017.1294980>
- Levitsky, S., & Murillo, M. V. (2009). Variation in institutional strength. *Annual Review of Political Science*, 12, 115–133. <https://doi.org/10.1146/annurev.polisci.11.091106.121756>
- Mahoney, J., & Thelen, K. (Eds.). (2010). *Explaining institutional change: Ambiguity, agency and power*. Cambridge University Press.
- Meyer, A. D. (1982). Adapting to environmental jolts. *Administrative Science Quarterly*, 27(4), 515–537. <https://doi.org/10.2307/2392528>
- Meyer, J., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 83(2), 340–363. www.jstor.org/stable/2778293
- Mining Press. (2019, October 2). *Control en tiempo real: el objetivo del nuevo edificio de Minería*. <https://bit.ly/3vkRsaa>

- Mining Press. (2020, December 17). *San Juan tierra minera, negocios reales*. <https://bit.ly/3gUFwX7>
- Ministerio de Hacienda. (2019). *Informes de cadenas de valor. Minerales metalíferos: oro*. Presidencia de la Nación Argentina. www.argentina.gob.ar/sites/default/files/sspmicro_cadenas_de_valor_mineria_metalifera_oro.pdf
- Ministerio del Interior. (2003). *Elecciones Generales escrutinio definitivo San Juan*. <https://bit.ly/3m87QI3>
- Ministerio del Interior. (2007). *Elecciones provinciales escrutinio definitivo San Juan*. <https://bit.ly/3AME3uH>
- Ministerio del Interior. (2011). *Elecciones nacionales distrito San Juan*. <https://bit.ly/3zPvMoe>
- Ministerio de Minería (n.d.). *Actas del consejo consultivo minero (Nº 1—Nº 32)*. <http://serviciosmineria.sanjuan.gob.ar/consejo/ccm.php>
- Ministerio de Minería de San Juan. (2019). *San Juan destino de inversiones mineras* [Conference presentation]. Prospectors and Developers Association of Canada Convention. http://enernews.com/media/briefs/pdac-2019-la-presentacion-de-san-juan-argentina_2911.pdf
- Mira, J. (2016). Controversias de competencia judicial ambiental en un sistema federal: Reflexiones a favor del “federalismo ambiental”. *Actualidad Jurídica Ambiental*, 63, 3–26. www.actualidadjuridicaambiental.com/wp-content/uploads/2012/01/2016_12_Recompilatorio_63_AJA_Diciembre.pdf
- Moori Koenig, V., & Bianco, C. (2003). *Estudios sectoriales 1 EG.33.6. Componente: Industria minera*. CEPAL-ONU. www.funcex.org.br/material/redemercosul_bibliografia/biblioteca/ESTUDOS_ARGENTINA/ARG_97.pdf
- Moscheni, M. del C., & de la Torre, D. (2017). Tres décadas de políticas estatales mineras en Argentina: La continuidad de la omisión. *RevIISE-Revista de Ciencias Sociales y Humanas*, 10(10), 243–257. www.ojs.unsj.edu.ar/index.php/reviise/article/view/181/pdf
- North, D. (1990). *Instituciones, cambio institucional y desempeño económico*. Fondo de Cultura Económica.
- O'Donnell, G. (1996). Otra institucionalización. *Revista Ágora*, 5, 5–28.
- Orihuela, J. C., Mendieta, A., Pérez, C., Ramírez, T. (2021). From paper institutions to bureaucratic autonomy: Institutional change as a resource curse remedy. *World Development*, 143, 105463. <https://doi.org/10.1016/j.worlddev.2021.105463>
- Orihuela, J. C., & Paredes, M. (2017). Fragmented layering: Building a green state for mining in Peru. In E. Dargent, J. C. Orihuela, & M. Paredes (Eds.), *Resource booms and institutional pathways: The case of the extractive industry in Peru* (pp. 97–117). Palgrave Macmillan.
- Orrù, M., Biggart, N., & Hamilton, G. (1991). Organizational isomorphism in East Asia. In W. Powell & P. DiMaggio (Eds.), *The new institutionalism in organizational analysis* (pp. 361–389). University of Chicago Press.
- Oszlak, O. (1984). *Teoría de la burocracia estatal: Enfoques críticos*. Paidós.
- Panorama Minero. (2012). *Revista panorama minero*, 394–398. <https://panorama-minero.com/>
- Pastor, V. (2016, February 2). Minería refuerza el control con inspectores y tecnología. *Mining Press*. <https://bit.ly/3dQ14nl>
- Prensa Ministerio de Minería. (2018, August 29). *El gran hermano minero para control ambiental a distancia y en tiempo real*. Servicio informativo Gobierno de San Juan. <https://bit.ly/3gGrJF8>
- Prensa Ministerio de Minería. (2019, December 20). *Minería realizó 538 inspecciones durante 2019*. Servicio informativo Gobierno de San Juan. <https://bit.ly/32MBflf>
- Primer Tribunal Ambiental. (2020). *Cuenta pública 2020. Antofagasta: Primer Tribunal Ambiental- República de Chile*. www.1ta.cl/wp-content/uploads/REPORTE-1TA-EXTENDIDO-1.pdf

- Redacción Perfil. (2015, March 12). *Millonaria multa a Barrick por el derrame de cianuro en Veladero*. <https://bit.ly/2QntM2s>
- Sabatier, P. (1986). Top-down and bottom-up approaches to implementation research: A critical analysis and suggested synthesis. *Journal of Public Policy*, 6(1), 21–48. <https://doi.org/10.1017/S0143814X00003846>
- Sabatier, P., & Jenkins-Smith, H. (1999). The advocacy coalition framework: An assessment. In P. A. Sabatier (Ed.), *Theories of the policy process* (pp. 117–166). Westview Press.
- Secretaría de Minería. (2021, January 18). *Informe mensual coyuntura minera*. Ministerio de Desarrollo Productivo de Argentina. www.argentina.gob.ar/sites/default/files/informe_mensual_coyuntura_minera_-_diciembre_2020.pdf
- Secretaría de Minería. (2020a). *Minería Argentina 2020. Primer semestre*. Ministerio de Desarrollo Productivo de Argentina. <https://bit.ly/3dQG9Ao>
- Secretaría de Minería. (2020b). *Producción argentina de principales metales; oro, plata, litio, cobre, cinc y plomo*. Ministerio de Desarrollo Productivo de Argentina. www.argentina.gob.ar/sites/default/files/informe_de_producciones_metaliferas_principales_final_2018_1.pdf
- Silva, E. (2018). Mega-projects, contentious politics, and institutional and policy change: Chile, 1994–2017. *European Review of Latin American and Caribbean Studies*, 106, 133–156. <https://doi.org/10.32992/erlacs.10391>
- Streeck, W., & Thelen, K. (2005). Introduction: Institutional change in advanced political economies. In W. Streeck & K. Thelen (Eds.), *Beyond continuity: Institutional change in advanced political economies* (pp. 1–39). Oxford University Press.
- Swampa, M. (2019). *Las fronteras del neoextractivismo en América Latina. Conflictos socioambientales, giro ecoterritorial y nuevas dependencias*. Bielefeld University Press. <https://doi.org/10.14361/9783839445266>
- Télam. (2016, October 4). *La justicia sanjuanina levantó la suspensión a la mina Veladero*. <https://bit.ly/3gG6rYc>
- Tiempo de San Juan. (2016, November 7). *Policia minera sumó inspectores y cámaras de vigilancia propias*. <https://bit.ly/3wKrJck>
- Tilly, C. (2002). Repertorios de acción contestataria en Gran Bretaña 1758–1834. In M. Traugott (Ed.), *Protesta social, repertorios y ciclos de la acción colectiva* (pp. 1–17). Edit. Hacer.
- Ulloa, A., Godfrid, J., Damonte, G., Quiroga, C., & López, A. P. (2021). Monitoreos hídricos comunitarios: Conocimientos locales como defensa territorial y ambiental en Argentina, Perú y Colombia. *ICONOS- Revista de Ciencias Sociales*, 25(69), 77–97. <https://doi.org/10.17141/iconos.69.2021.4489>
- US Geological Survey. (2020). *Mineral commodity summaries 2020: U.S. Geological Survey*. USGS. <https://doi.org/10.3133/mcs2020>
- Zald, M., Morrill, C., & Rao, H. (2005). The impact of social movements on organizations. In G. Davis, A. Arbor, D. McAdam, R. Scott, & M. Zald (Eds.), *Social movement and organizations theory* (pp. 253–279). Cambridge University Press. <https://doi.org/10.1017/CBO9780511791000.014>