



A WATER COMMONS IN CHILE'S NEOLIBERAL DESERT:

**Water Governance, Lithium Mining and
Identity Formation in San Pedro de Atacama**

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ABSTRACT:

An oasis village in the world's driest desert, San Pedro de Atacama's customary system of communitarian irrigation water governance – a highly unique instance of commoning in neoliberal Chile – is a socio-culturally rooted institution that dates back multiple thousands of years. Today however, with the start of the global green energy transition and the subsequent boom of lithium extraction in the Atacama, the water institution is facing entirely new socio-environmental threats to its existence. Under the rationale of corporate social responsibility, and in the neoliberal context of state absence in terms of socio-environmental regulations, lithium company Albemarle engages with local Indigenous communities through an economic benefit-sharing agreement. The controversial, identity-criteria-focused model of resource distribution by which the agreement functions deepens and further problematizes existing social identity boundaries within the San Pedro society. The result is a situation of widespread internal conflict, marked by growing tensions within and among the Indigenous communities as well as between the communities and non-Indigenous identity groups. The implications for the overarching institution of communitarian water governance are detrimental. Induced by mounting disunity and enabled by the sudden influx of Albemarle's lithium money, Indigenous communities increasingly assert their territorial autonomy by appropriating what they have come to see as 'their' part of the San Pedro River and 'their' share of its water. The result is a general de-collectivization of organization and hence the disruption of communitarian water governance. Indeed, San Pedro's current – lithium-money-induced – socio-territorial disintegration implies the gradual un-commoning of its historical water commons. All in all, this research maps the political ecology of water, mining and identity in San Pedro de Atacama, tracking the linkages between a company-community benefit-sharing agreement, the subsequent instigation of socially disruptive processes of identity (re)formation and the resultant disruption of San Pedro de Atacama's institution of communitarian water governance.

Keywords: water commons, local water governance, lithium mining, identity formation, neoliberal environmental governance, green energy transition

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Lastly, I turn to the many people in San Pedro whom I have had the great privilege to meet, listen to and above all learn from. I know very well that you have seen Western researchers come and go, taking their data back home and often leaving behind little more than their water footprints. Throughout this research process, I have questioned whether my presence in San Pedro could be justified in any way. What reason did I – an inexperienced outsider with little proficiency in Spanish – have to be here, demanding your time and effort? All while making use of the water that is so rapidly disappearing, the very water my research is concerned with. I make no pretensions as to the supposed importance of this research. Nonetheless, I sincerely hope that this work is of some value to you and that I did justice to the experiences you entrusted me with. I will make sure that this work – translated to Spanish – reaches you and anyone who has contributed to it. I am open to talk and discuss it with you at any point. Thank you for showing me the Atacama through your eyes, among my interviews and conversations with you are some of the most inspiring encounters I have ever had.

LIST OF ABBREVIATIONS:

ARASPA	Asociación de Regantes y Agricultores del Río San Pedro
CORFO	Corporación de Fomento de la Producción (Chilean Production Development Corporation)
CSR	Corporate Social Responsibility
CPA	Consejo de Pueblos Atacameños (Council of Atacameño People's)
DGA	Dirección General de Aguas (Chilean General Water Directorate)
SdA	Salar de Atacama (Atacama salt flats)

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1. INTRODUCTION:

“Water is not just a formula, h₂O. For us, water is a being. It is a living being which we as a people have communicated with for thousands of years” (Interview respondent 6, San Pedro, April 18th 2023).

1.1 Situation:

San Pedro de Atacama is an oasis village in one of the world’s most arid territories: Chile’s northern Atacama Desert. Traditionally an agricultural and pastoral society, the survival and development of San Pedro and its people is in large part a history of effective management of the desert’s scarce water resources. The most important of these water resources is the San Pedro River: a relatively small stream of water that has its source in the Andean highlands and flows through the desert valley. For thousands of years, the water from the San Pedro River – as well as the irrigation system that makes possible its use for agriculture – has been managed and maintained in collective fashion by the people of San Pedro. The fact that the water of this river, together with its associated system of irrigation canals, has to this day maintained its status as the collective property of the San Pedro farmers and irrigators, constitutes a highly unique situation in Chile, where water rights have been privatized since the 1980s. Indeed, having sustained a system of collective ownership and communitarian governance amidst processes of neoliberalisation and commodification, San Pedro’s customary water governance institution is one of the very few water commons left in all of Chile.

Today, this institution of communitarian water governance is controlled and operated by the *Asociación de Regantes y Agricultores del Río San Pedro* (ARASPA), a non-profit association that is firmly rooted in local history and culture. Consisting of, and representing over 1200 irrigators in San Pedro and surrounding localities, ARASPA possesses collective rights to 1157 litres of water per second from the San Pedro River. Today however, faced with ever-decreasing volumes of irrigation water due to the river’s rapidly declining flow – from the 1157 litres per second that were inscribed in 1997 to an estimated 340 litres today – ARASPA and its members are struggling to sustain and preserve agricultural traditions (interview respondent 7, San Pedro, April 18th 2023; interview respondent 11, San Pedro, May 7th 2023;

Sepúlveda, 2015).¹ Moreover, whereas the institution is historically of fundamental social, economic and cultural significance due to the town's collective dependency on, responsibility over and commitment to the successful management of irrigation water, today ARASPA's social authority as well as its economic power are waning. As a result, the system of communitarian water governance is increasingly impeded in its functioning and indeed, the very existence of San Pedro's water commons is threatened.

The decreasing volumes of water, as well as the increasing severity of ARASPA's economic and organizational struggles, coincide with the unfolding of another, very impactful development: the rise of the lithium mining industry in the Atacama region. San Pedro and its neighbouring localities are located in the surrounding areas of an enormous salt flat called the *Salar de Atacama* (SdA). In the early 1960s, it was discovered that the subterranean brine water located underneath the Salar contains an exceptionally high concentration of lithium. Hereafter, over the course of the past two decades, the light metal has risen to prominence in international markets due to its key importance for the production of electronic batteries. At present, the two lithium mining companies that operate in the Salar de Atacama – SQM and Albemarle – extract vast amounts of lithium-rich brine water from the desert's soil. After it is pumped up, the brine water is stored in large pools where most of the water is evaporated by the sun. The lithium-concentrated brine that is left is transported to the nearby city of Antofagasta where lithium is then manufactured and ultimately shipped overseas (Albemarle, n.d.b).²

Lithium is predominantly used for the production of lithium-ion batteries for electric vehicles. As the countries that lead today's globalised market economy are transitioning from fossil fuels to more sustainable and renewable energy sources, the global lithium market has risen to incredible lucrative prominence in the past decade. Given that international advocates of the lithium industry consider lithium to be a prerequisite to the development of green energy and electromobility, lithium mining is championed as a form of 'green mining': a source of increasing global sustainability and equity. However, the discursive association of lithium extraction with global sustainability hugely obscures the realities of lithium mining on the local level, where lithium extraction – like any form of natural resource extraction – presents extremely menacing impacts to both the natural environment and the people that

¹ The estimated 340 litres per second today concern the River's volume during summertime. During wintertime, the river's volume is greater. Yet, given the cold temperatures, little to no agriculture is possible during wintertime.

² Online source: <https://www.albemarlelithio.cl/materials-applications/plantas-salar-atacama>. Accessed 02-11-2023.

inhabit it. As of 2018, SQM and Albemarle were jointly responsible for the over-extraction of an estimated 2000 litres of brine water per second from the extremely fragile ecosystem that is the Atacama Desert (Jerez et al., 2021). Referring to the mass-scale commodification of their region's natural environment, many San Pedrinos have come to describe the Atacama as “a sacrifice zone” (interview respondent 14 and 15, San Pedro, May 16th 2023). As will be explained later in more detail, the environmental impact of water depletion in what is notably the world's driest desert is becoming increasingly visible and troublesome.

The focus of this research however, is another, equally disruptive lithium-mining-induced development on the local level: the introduction of an identity-criteria-focused ‘mutual benefit agreement’ through which mining company Albemarle supplies very significant economic resources to certain Indigenous people in the SdA region, but not to all.³ In 2016, under the rationale of corporate social responsibility (CSR) and in Chile's neoliberal context of state absence from socio-environmental regulations on the corporate world, US-based lithium company Albemarle signed a controversial agreement with a selective group of only state-recognized Indigenous communities. Aiming to establish a form of partnership based on mutual goals and shared values, the company agreed to share 3.5 per cent of its yearly profits with the 18 communities and their overarching council (CPA), each party receiving a nineteenth part of the total sum (Consejo de Pueblos Atacameños, n.d.).⁴ The sudden influx of very significant amounts of money to only those groups that are legally recognized as Indigenous by the Chilean state has led to unprecedented levels of social tension and internal conflict in San Pedro. In turn, the lithium-mining-induced disruption of San Pedro's social fabric comes with menacing implications for local water governance. All in all, investigating the impact of Albemarle's 2016 benefit-sharing agreement on the functioning of San Pedro's system of communitarian water governance, this research tracks the linkages between the economic conduct of a lithium company and the disruption of a historical institution of communitarian water governance.

³ Given the positive normativity implied in the term ‘mutual benefit agreement’ and the fact that for many this deal was no agreement, nor does it provide benefits, I henceforth employ the term ‘benefit-sharing agreement’ instead.

⁴ As overarching Indigenous council, the CPA represents the 18 Indigenous communities that are included in the 2016 benefit-sharing agreement. The CPA is itself included as the 19th party to the agreement, thus receiving the same economic funds as the communities.

Investigating how certain power relations influence the interrelationship between society and water in the case of San Pedro de Atacama, this research is inspired by and falls within the academic tradition of political ecology. The Atacama Desert has always been extremely rich in natural resources such as saltpetre and copper. As such, there exists a long history of interaction and interrelation between the region's local Indigenous inhabitants and the invasive, water-depleting mining companies. In their struggle to secure access to the region's scarcely available water resources, the people of the Atacama – the *Lickan Antay* as their official name goes – have since long been forced to mobilize socially and politically against mining development and water extraction. In turn, mining companies – in need of at least some level of local social legitimacy – have found themselves forced to respond to the pressures and demands of the region's Indigenous inhabitants. With the recent boom of lithium mining in the Salar de Atacama, a new chapter has started in this long history of water-struggle-mediated interaction between the Atacameño people and the mining industry. I term this new epoch 'the lithium chapter'. Although a continuation of historical processes, this recent lithium chapter is marked by renewed company-community interrelations, distinct socio-economic developments and unprecedented levels of internal conflict. These developments have a profound impact on the organization of local water governance.

All in all, focussed on the concepts of water governance, mining conduct and social identity formation, this study investigates how the benefit-sharing agreement between Albemarle and certain Indigenous communities feeds into and further problematizes ongoing processes of exclusionary identity boundary drawing and how this in turn leads to the impediment of communitarian water governance. Put simply, this research illuminates how the economic conduct of a mining company threatens the very existence of one of Chile's last remaining water commons.

1.2 Problem statement:

As described above – and as will be explained at length in the theory section – the analysis of this research is centred around three key concepts: water governance, mining conduct and social identity formation. There exists a vast body of academic literature on the political ecology of water in the Atacama. Similar to this research, many prominent works deal with the concepts of water struggle, Indigenous identity and mining development, often emphasizing how the interactions between

Indigenous communities and mining companies in their mutual pursuit for access to, and control over water resources, causes the two entities to co-shape each other (Babbidge, 2013; Carrasco, 2016; Cuadra, 2000; Gündermann & Göbel, 2018; Lorca et al., 2022; Lorca et al., 2023; Prieto 2022; Prieto 2023; Romero et al., 2012). Little, however, has been written on the triangular interrelation between water, mining and identity after the introduction of the benefit-sharing agreement in 2016. This research then, delves into the post-2016 political ecology of water in the Atacama: investigating how the benefit-sharing agreement – as a new form of mining conduct – affects the modes of Indigenous social organization and thereby the prevalent structures of local water governance. Hence, by delving into the largely uncharted waters of the lithium chapter, this research contributes to and deepens the existing body of knowledge on the political ecology of water in the Atacama. To do so, this research is guided by the following question:

How does the 2016 benefit-sharing agreement between Albemarle and specific Indigenous communities affect San Pedro de Atacama's system of communitarian water governance?

1.3 Academic relevance:

The first way in which this research contributes to academia, and political ecology studies in particular, lies in the exceptionality of the case researched. As alluded to, San Pedro is one of the very few agricultural localities in Chile that managed to hold on to collective water rights and customary practices of communitarian water governance after the start of the national process of water privatization in the 1980s. This makes ARASPA a highly unique and rebellious instance of commoning and communitarianism in neoliberal contexts. Yet – despite the water commons having survived for multiple centuries and despite the San Pedrinos having successfully defended their customary institution in the face of menacing neoliberal reforms and threats from the mining industry – the recent socially destructive impacts of the 2016 benefit-sharing agreement have, at last, caused cracks to appear within its communitarian structures. By analysing the micro case of ARASPA's struggle to uphold customary principles of collectiveness in the face of new mining encroachments, this research simultaneously deals with the macro development of CSR – which is rapidly becoming the new paradigm for extractive mining companies around the world on how to deal with local communities and environmental issues – showing how it can negatively affect natural environments and disrupt local societies. To put it more clearly, by

illuminating the local realities and practical outcomes of CSR policies, this research adds to broader discussions in the field of political ecology on neoliberal environmental governance, contemporary mining development and the enclosure of locally rooted community-based governance institutions.

One of CSR's practical outcomes then, is a further politicization and problematization of social identity boundaries and Indigeneity. As mentioned, much of current literature on the political ecology of the Atacama covers the topic of Atacameño Indigenous identity. However, one glaring gap in the literature – especially relevant in the context of shifting modes of Indigenous identity politics and organization that have occurred after the 2016 benefit-sharing agreement – is the issue of non-Indigeneity, or rather non-recognition of Indigenous identity. Most of current research – critical and uncritical alike – fails to account for the fact that only a very small percentage of those Atacameños who self-identify as Indigenous are legally recognized as such and that – contrary to dominant representations in media and academia – recognition of Indigenous identity is often not purely a matter of bloodline, but also a matter of local politics. Being member to one of the state-recognized Indigenous communities comes with certain socio-economic benefits. By adding to these benefits, Albemarle's benefit-sharing agreement has enhanced the privileged position of the 'legal Indigenous' over the 'non-recognized Indigenous'. The socially constructed nature of the Indigenous communities and the politics of belonging to an identity group will be explained in detail later on. For here it suffices to state that, when writing about 'the people of the Atacama', too much of current research refers only to the selected and politically charged group of state-recognized Indigenous communities. In doing so, the existence of those individuals that are not recognized as Indigenous is negated and the social exclusion to which they are subjected disregarded. Through these incomplete representations, much of current academia contributes to what could be termed 'the double marginalization of the non-recognized Indigenous'. As such, one pivotal way in which this research adds to the literature and practice of political ecology studies in the Atacama is by addressing the much-neglected issue of non-Indigeneity, the politics of recognition and newly emerged exclusionary identity politics.

1.4 Societal relevance:

Concerning the societal relevance of this research, its primary contribution lies in exposing, criticizing and thereby hopefully counteracting the much-observed ways in which CSR policies and benefit-sharing

agreements can lead to the deterioration of local community-based institutions and the disintegration of local societies in general.

Secondly, this research was carried out in an incredibly turbulent time during which a multitude of important developments – local, national and international in scale – took place in the rapidly expanding world of lithium. In an area termed ‘the lithium triangle’, the neighbouring salt planes of Chile, Bolivia and Argentina together hold more than half of the world’s lithium reserves, with Chile’s Salar de Atacama containing the lion’s share. Due to its ever-increasing demand – and therefore price – international geopolitical interests in the resource have increased rapidly over the past decades. Realizing the current and future geopolitical significance of controlling the global lithium market, the U.S.A and China have engaged in what can be termed ‘the international scramble for the lithium triangle’. During my stay, the U.S. military Chief of Southern Command pleaded for action against the “malign activity of our adversaries” in what she termed “our backyard” (Kawsachun News, 2023).⁵ The fact that international tensions concerning the lithium triangle are currently mounting is closely related to national developments and the announcement of Chilean President Gabriel Boric to nationalize the lithium industry. By 2043, when Albemarle’s pending contract expires, the Chilean state will likely take complete control over the production chain through state-owned mining company CODELCO (Villegas & Scheyder, 2023).⁶ These national and international developments directly translate to increasing insecurities about the future of the Atacama, its inhabitants and its natural environment. This makes it all the more necessary to gain a critical understanding of the current developments of lithium extraction and mining conduct in the Atacama and to illuminate the industry’s impact on local socio-environments.

Thirdly, by analysing the effects of lithium mining on the local level, this research aims to shed a critical light on today’s international lithium economy and its utopian promise of global sustainability. In line with the 2015 Paris climate agreements, the European Union committed to reach a state of climate neutrality by 2050. It is beyond dispute that to accomplish a state of net-zero carbon emission, a sweeping transition from highly pollutive fossil fuel to green and more sustainable energy sources will be required. It is believed by many that the promotion of green electro-mobility – centred around the production of electric vehicles – is key. The growth of the electro-mobility industry currently depends on the extraction

⁵ Online source: <https://www.youtube.com/watch?v=X7ANMbOAhHJ>. Accessed 10-11-2023.

⁶ SQM’s contract with the Chilean state expires in 2030.

Online source: <https://www.reuters.com/markets/commodities/chiles-boric-announces-plan-nationalize-lithium-industry-2023-04-21/>. Accessed 07-11-2023.

of lithium. This goes to show that, whereas the demand side of the international lithium economy is dominated by China, the US and Europe, the supply side is in large part taken care of by countries from the Global South. More often than not, extraction sites are located in territories inhabited by rural communities whose way of life is intrinsically related to and dependent on the natural environments they inhabit. In past years, discourses have emerged promoting the fallacy that brine-based lithium mining – as it is different from the more visibly environmentally devastating method of hard rock lithium mining – must be regarded as a cleaner form of ‘modern mining’. These discourses, endorsing the idea that lithium mining contributes to a more sustainable and socially equitable world, ignore the simple fact that the exploitation of nature’s resources is inherently unsustainable and that the accumulation of lithium in the Global North depends on the dispossession of rural communities in the global south (Jerez et al., 2021; Harvey 2003; Swyngedouw, 2005). As a result of the green electromobility hype among consumers in OECD countries and other dominant economies, lithium has been appointed the status of an ‘internationally strategic resource’ and a product of ‘global importance’. In the characterization of lithium as an international commodity that is subject to the rules and dynamics of the international free market, lies the discursive legitimization of the resource’s detachment from the local sphere and its appropriation into the global capitalist economy (Bonelli et al., 2022). Indeed, its appropriation from the natural environment in which it is stored into the hands of the international consumer. As explained by an Indigenous water activist from San Pedro:

“What moves all this is an economy, an economy also imposed on this territory. We as inhabitants are the ones who are really going to pay the costs of these new technologies. It is not the inhabitant (of lithium consuming countries) who pays for the technology, we are the ones who are going to pay the price of this new energy change that is being talked about on a planetary level” (Interview respondent 6, San Pedro, April 4th 2023).

Indeed, international economy interconnects with local socio-environmental impacts. Analysing the international political economy of lithium and how it has led to water injustices in the Atacama, Jerez et al. explain the following:

“The expansion of lithium demand coming from the Global North has been generating socio-environmental damages and water injustices in the Global South due to the transformation of local hydro-social processes. With this, it has affected both the

ecosystems and communities of native people. [...] these local damages constitute the colonial shadow of green electromobility” (2021, p.2).

This quote neatly reflects the aim of this research: to track the linkages between the conduct of the lithium industry and the transformation of a local hydro-social institution. Yet, in opposite direction of Jerez et al. – who seek to explain a local phenomenon by analysing global dynamics – this research seeks to illuminate the global by analysing the local. That is to say: by investigating the case of ARASPA and demonstrating how mining conduct disrupts San Pedro’s system of communitarian water governance, this research sheds a critical light on the global lithium economy and its surrounding discourses of sustainability. All in all, this research seeks to add to the growing body of literature that reconsiders the utopian promises of (supposedly) ‘green’ electromobility and points out how ‘modern mining’ can in practice amount to ‘green extractivism’.

1.5 Content:

This work consists of five chapters. In the first chapter I explicate my methodology: I explain *how* I have conducted my research and *why* I decided to do it in this particular way. In the second chapter – the theory section – I explain how my overarching theoretical lens (political ecology), my specific analytical frame (waterscape) and my key concepts (water, mining and identity) configure to make up the conceptual framework through which I analyse and interpret my empirical data. Chapter three outlines the general political ecological context of water governance in San Pedro, thereby facilitating the development of my argument in the next chapter. The fourth chapter hammers home the main claim that the 2016 benefit-sharing agreement contributes to the disruption of San Pedro’s system of communitarian water governance. Finally, in the discussion and conclusion chapter, the findings of this research are further theorized and their broader implications outlined.

2. METHODOLOGY:

In this chapter I outline my methodology. Having resided in San Pedro for ten weeks, the most important method employed in this research is that of fieldwork. Within this broader methodology, the specific methods of data generation applied are qualitative interviews, on-the-ground observation and desktop literature research. As such, this research is strongly qualitative in character. Drawing on Jennifer Mason's description of different research strategies and designs in qualitative research, this chapter explains *how* I have conducted my research and *why* I decided to do it in this particular way.

I start by describing my research puzzle and how it informs my ontological and epistemological stances. Hereafter, significant space is reserved to discuss the issue of researcher positionality. Emphasizing the value and necessity of academic self-reflection and transparency, I will clarify my own take on my positionality and discuss how it has impacted both the process and outcome of this research. Next – elaborating on the practical details of the applied research methods – I explain how my methodological choices guided every step of my research: from choosing my topic to finding people to interview to the analysis and interpretation of data. Hereafter, I outline my broad methodological design, elaborating on the methods that I have applied and how I have applied them. Lastly, I acknowledge the limitations of my methodological approach, explicating the ethical considerations that I have faced and how my responses to these have influenced the product that you now read.

2.1 Ontology and epistemology

Exploring how mining activity and processes of social identity formation interact with each other to influence local practices of water governance, this research addresses what Mason terms an ecological intellectual puzzle: focussed on “the layerings and interrelationships of phenomena, and how everything is connected to something else [...] understanding how agents (human and non-human), things and elements are connected with their surroundings (social and otherwise)” (2018, p.12). Approaching my research as an ecological puzzle allowed for a close analysis of nature-society relations in the Atacama, focussing on the conduct of a lithium company and how it transforms the ways in which people relate to water.

Ontological position

This research is a work of political ecology and just like the conceptual framework that will be outlined in the next chapter, the methodological design of this research is informed by the principles and objectives of political ecology studies. That is to say, the methods applied serve to illuminate the ways in which humans and the natural environment in the Atacama co-shape each other and how unequal power relations influence the ways in which nature is governed. As such, my methodological approach reflects an important ontological assumption: namely that the social world can only be understood by taking into account its interrelationship with the natural environment and more specifically, that society must be understood through its interrelationship with water.

Another important ontological stance on which this research rests relates to the fundamental ontological debate of structuralism versus individualism. A middle way between ontological structuralism and individualism, my ontology is inspired by Anthony Giddens' structuration theory. Emphasizing the duality of structures, structuration theory "relates to the fundamentally recursive character of social life and expresses the mutual dependence of structure and agency" (Giddens, 1979, p.69). Giddens maintains that individuals are born into social structures that influence and affect them while they simultaneously change these very structures through their own actions. In short, structure and agency constitute each other as individuals re-shape the social structures that shape them (Demmers, 2017). The macrosocial structures with which this research is concerned are those of neoliberalism, or free-marketism. I recognize the existence and life-structuring impact of neoliberalism on individuals. Yet, I also recognize and take into account the existence of free will – the capacity of individuals to act as active agents – and their power to influence and even re-shape the neoliberal structures that impact them. Recognizing agency is important so as not to fall into a discourse of passive victimhood and negate the social fact of resistance: marginalized individuals are not mere passive victims but rather active agents who can and do respond to the social structures that oppress them. This is neatly reflected in the words of a San Pedrino Indigenous water activist:

"We are not victims. I have never felt like a victim. We are the right people, with the most experience, always looking towards the future of the next generation. If not as Indigenous peoples, we would not exist." (Interview respondent 6, San Pedro, April 18th 2023).

All in all, my application of political ecology – taking into account both structure and agency – corresponds neatly to what Darcy Tetreault terms “the third form of political ecology” (Tetreault, 2017, p.16). In this third, structuration-theory-inspired form of political ecology, the materialist school (structuralism) and post-structuralist school are combined to constitute an eclectic type of political ecology. Hence, to summarize my ontological position: I perceive the social world to be constructed by relationalities and social life to be determined by both macrostructures as well as human action.

Epistemological position

This research adheres to a qualitative epistemology, stressing the need to ‘understand’ rather than ‘explain’ the social world. Criticizing purely quantitative, technocratic studies on the socio-environment, I emphasize that the interrelationship between nature and society is inherently political and must be understood qualitatively rather than explained quantitatively.

Similar to my ontological position, the epistemology applied in this research is not singular but rather a mixture of different epistemological approaches, combining epistemological structuralism with post-structuralism. To start with, I draw on the epistemological assumptions of critical theory. On the ontological level – relating to the structuralist component of my ontological position – critical theory claims that “life is determined through social and historical processes and power relations” (Mason, 2018, p.8). On the epistemological level, critical theory therefore maintains that researchers ought to illuminate those power relations that constitute a social reality as well as the social institutional structures through which they function.

Yet – and relating to the post-structuralist component of my ontology – this research also applies an ethnographic epistemological approach. That is to say, I have resided in my area of research for a longer period of time in order to immerse in the research setting and “generate knowledge through first-hand experience” (Mason, 2018, p.8). My ethnographic epistemological conviction that a researcher must experience a social reality in order to understand it relates back to my ontological focus on the actions and agency of individuals. By focussing solely on the broad political-economic contexts of environmental struggles – thereby overlooking the significance of local individuals’ everyday practices as well as the importance of intra-personal differences – researchers run the risk of “macrostructural bias” and essentializing local communities and individuals (Horowitz 2011, p.1384; Rash & Köhne, 2016). Hence,

rather than investigating the political ecology of water in San Pedro remotely by analysing only the macrostructures that are at work, my epistemological position prompted me to generate knowledge on how these structures take form in real life and how local individuals interact with these structures on a daily basis. This meant going to San Pedro to conduct ethnographic fieldwork, analysing the relevant societal and institutional structures at work and observing the everyday practices of local stakeholders in reaction to them. In other words, the ethnographic aspect of my epistemological position led me to analyse the workings of more local institutional structures as well as the micropolitics of individual action that inform socio-environmental developments at the local level.

In short – directly informed by my ontological assumption that social reality is made up of social structures as well as individual agency – my epistemological position prompted me to investigate both societal power structures as well as the micropolitics of individual action, focussing on how these two components interact to constitute the political ecology of water in San Pedro.

2.2 Context and Sampling:

In December 2022 I established online contact with one of ARASPA's directives who later on became one of my central contacts and gatekeeper in San Pedro. She is one of the coordinators within ARASPA's current project to recover and inform the people of San Pedro about the history of the town's institution of communitarian water governance. Under the name of 'La Memoria de ARASPA', the project concerns a joint academic effort in which different scholars from various disciplines contribute to a rapport that illuminates the social, cultural and biological significance of San Pedro's water commons and the institution of communitarian water governance throughout history. The rationale, or central aim of the project, is to raise popular awareness about the historical and current significance of irrigation water governance in San Pedro, thereby countering a growing lack of social and political commitment to the institution. Personally believing in the value of this socio-cultural institution and sympathizing with the project's cause, I decided to contribute to the project. As such, I have conducted my research in loose cooperation with ARASPA. That is, they supported me in the process of arranging interviews for my research and I will use the data that I have collected to write an additional article, specifically for 'La Memoria de ARASPA'. In this way I came to conduct my fieldwork in San Pedro from March to May 2023. During my stay, I stayed in close contact with three ARASPA directives. These were also the

people who arranged accommodation for me and acted as vital gatekeepers to help me arrange interviews and attend events.

Arranging interviews is not an easy and straightforward task in San Pedro. As a small village, the people of San Pedro have seen a lot of Western researchers come and go, often to hear nothing from them again after they have generated their data. On top of that, the intensity of current social tensions in the town causes some people to be more weary than usual of sharing information with outsiders. As such, the fact that I had three gatekeepers – all three well-respected figures within the town – was of crucial importance to the feasibility of my research. For most of the interviews, my gatekeepers coordinated and communicated the date, time and place. In close coordination, we created a list of interesting people to interview. The choice of interviewees was mainly based on their current or past role within the institution of water governance and the municipality in general. Another important consideration that informed my choice of interviewees was based on identity: I wanted to speak to people who are Indigenous (members to state-recognized Indigenous communities), to people who are not Indigenous and to people who identify as Indigenous but are not legally recognized as such by the Chilean state. Moreover, I actively sought to maintain a balance between male and female respondents.

I conducted a total of fifteen interviews with sixteen people who live in San Pedro. Virtually all of these interviewees were irrigation water users and therefore member to ARASPA. The ones who were not had been irrigation water users in the past. From these sixteen, six were currently working for ARASPA in positions ranging from board directives to group coordinators and gate openers. Apart from being irrigators, all interviewees had different jobs and occupations within the village, some having various. Given that my research revolves around ARASPA and the irrigators of San Pedro, it is only logical that a large part of my interviewees are indeed connected to the institution. Yet, given that my research findings are to a certain extent reflections of, or at least drawn from the narratives presented to me by my interviewees, it is important to note and acknowledge that this selection of interviewees consists mainly of local water users.

A list of all interviews is included in the appendix. For reasons of confidentiality I will not go into full detail about the occupations or characteristics of my interviewees but among them were water activists, Indigenous leaders and people holding important positions within the municipality. Among the sixteen interviewees from San Pedro five were women and eleven were men. Moreover, eleven were member

to a state-recognized Indigenous community. Most, but not all of these Indigenous community members were outspokenly critical of the socio-cultural and political impact of the benefit-sharing agreement and the influx of lithium money into their community. All five interviewees who were not member to an Indigenous community self-identified as Indigenous. The issue of Indigeneity and state-legal recognition of Indigenous identity will be discussed at length in chapter five. The seven interviews not held in San Pedro were conducted online through Microsoft Teams. Three of these comprised interviews with representatives from Albemarle and another three with academic experts on the political ecology of water in the Atacama and Latin America in general: Hugo Romero, Manuel Prieto and Thomas Perrault. The last interview was with bio-chemistry researcher Ingrid Garcés, whose expertise includes the mining-induced environmental damage to the ecosystems of the Atacama.

2.3 Methods and analysis:

As mentioned, my central method of data generation was semi-structured qualitative interviewing. The duration of interviews ranges from half an hour to two hours, with an average of just over one hour. I recorded each interview with an audio recording device to be able to listen back, transcribe and translate interviews. On top of this, I used a physical notebook to write down keywords, keep track of the conversation and describe perceived sentiments and body language. I prepared for each interview individually by making a list of topics, tailored to the position and identity of each specific interviewee and the information I desired to gain from the interview. For the first few interviews I wrote down specific questions under each topic that I would ask during the interview. Given my limitations at this point to express myself freely in Spanish, a detailed set of written questions helped to keep control over the conversation and make sure that crucial themes were addressed. As my Spanish language and interviewing skills improved, I soon stopped holding on to a rigid and pre-determined set of questions. Moving from my initial – more structured – style of interviewing to actual semi-structured interviews allowed for interviewees to bring forward their own topics and stories more comfortably. This in turn made possible a more in-depth and unfeigned analysis of the social reality as experienced by my interviewees.

As my research topic concerns recent developments about which little work has been published so far, I was forced to work with a highly inductive approach. Especially during the first month, I constantly

adapted the focus of my research as well as my conceptual framework according to what I encountered during each new interview. As such, I have modified and refined the focus of my interviews many times throughout the process. Apart from organized interviews, I generated data in the field on a daily basis by visiting sites and attending events. Establishing contacts who were open to talk with me about their knowledge on and experience with socio-political topics, I have had the chance to attend events such as critical discussion groups and Indigenous conferences. Moreover, being immersed in the village for a longer period of time, I have enjoyed countless invaluable informal conversations with either strangers or established contacts. All in all, the ethnographic immersion in my research setting not only provided me with a constant stream of information, it also enabled me to better contextualize and understand received information.

After conducting enough interviews – having collected a satisfactory amount of valuable data – I systematized and categorized the content of all interviews manually to analyse differences and commonalities in my data set. I identified three broad themes that recurred and stood central in all of the interviews that I held in San Pedro: water, mining and identity. These themes correspond neatly to my key concepts and conceptual framework. Concerning my analysis, I focussed on the way in which each interview reflects the respondent's perceptions of the history and current state of the system of communitarian water management, the influence of lithium money on San Pedro's social fabric and the growing social tensions within and among communities as well as the recent developments concerning Indigenous identity formation. As such, the analysis of the generated data enabled me to gain an understanding of the way in which each key concept figures in my case as well as the way in which they interrelate.

2.4 Positionality:

No research is objective, no researcher is neutral. Positionality – who the researcher is and how he or she relates to the investigated social reality – influences the choices made in each step of the research process. In this section I examine my own subjectivity and bias, striving to be as transparent as possible about how my distinct positionality informed specific choices I have made and how these choices have in turn influenced this research.

A first caveat is that I am no Atacameño nor Chilean. I am a white male from Western Europe. The culture and identities about which I write or not my own. Conducting ethnographic research in another country and culture comes with ethical considerations, especially when the research comprises a critical analysis of social identity in a setting of socio-cultural and economic marginalization. Therefore, I wish to make very clear that any statement in this research concerning themes of identity and culture is not to be perceived as me making claim on the essential 'truth' of things. Rather, it is an attempt by me to reflect the expressed experiences of those people I have spoken to and to incorporate them into my own understanding of the case at hand. Moreover, I cannot claim to fully understand the experiences of marginalization I write about. Even if ethnographic research entails the researcher's immersion in the social world under investigation, one can never claim to understand another's experience if not personally lived through. This holds especially true for such deeply personal experiences as marginalization and discrimination. That said, by applying a political ecology approach – contextualizing inequalities in the Atacama against the background of prevalent power structures – one of my aims as a researcher is to enable a deeper and more complete understanding of the mechanisms of marginalization that are at play.

Another important acknowledgement concerns the purpose of this research. As described, this research was conducted in a certain form of cooperation with ARASPA. In my opinion ARASPA is an association of great socio-cultural value that is marginalized and threatened in the face of a hostile neoliberal political system and an economically powerful mining industry. Sympathizing with ARASPA's struggle to preserve customary traditions of communitarian water governance and to preserve collective water rights – and inspired by the ideas of Charles Hale on the benefits of activist research over cultural critique – I consciously decided to conduct my research *with* and not just *about* ARASPA. According to Hale, activist research concerns “a method through which we affirm a political alignment with an organized group of people in struggle and allow dialogue with them to shape each phase of the process, from conception of the research topic, to data collection to verification and dissemination of the results” (Hale, 2008, p.97). This is certainly not to say that the choices I have made concerning my research have been prescribed to me by ARASPA. On the contrary, ARASPA has left me full autonomy and independence over the content and conduct of my research. What it means is that I have strived to be as transparent as possible towards ARASPA about my choices throughout the process, opening myself up to feedback and dialogue.

2.5 Limitations and ethical considerations:

The style of engaged research comes with certain limitations and ethical considerations. Alignment comes with responsibilities and these responsibilities prompt me to make decisions in what I write about and what not. From the onset, I have made a conscious decision to refrain from writing about possible confidential or compromising information on marginalized groups and individuals, especially if this information bears no direct relation to the topic and argument of this research. As reflected by the research question, the aim of this research is to illuminate the impact of the mining industry, not to jeopardize and possibly endanger those who are already marginalized.

Some scholars – those who advocate the strive for scientific objectivity – perceive this form of active political alignment to detract from a researcher’s loyalty to the institutional rules of academia. Strictly taken, this might very well be. Yet – and basing myself on Hale’s theories about the added value and necessity of activist research – I maintain that the activist researcher does not lack academic integrity. Rather, the activist researcher’s commitment is divided between academia and ‘the real world’: “activist anthropologists attempt to be loyal both to the space of critical scholarly production and to the principles and practices of people who struggle outside the academic setting” (Hale, 2008, p.104). Going further than cultural critics – who seek to support marginalized groups only through the critical content of their work – activist researchers seek to make a more direct and on-the-ground impact by aligning themselves with a certain group not only through the content but also in the practice of their research. Consciously choosing to work partly outside of the conventional academic institutional framework, this type of research logically comes with certain difficulties and dilemmas. Yet, as Hale explains, the researcher’s awkward position – split between two worlds – also comes with the possibility of yielding great social as well as academic value:

“Dual loyalties to an organized group in struggle and to rigorous academic analysis often are not fully compatible with one another. They stand in tension, and at times, the tension turns to outright contradiction. At the same time, such tension is often highly productive. It not only yields research outcomes that are potentially useful to the political struggle with which one is aligned; but it can also generate new insight and knowledge that challenge and transform conventional academic wisdom.” (2008, p.105).

All in all, I would not have chosen for this engaged approach if had not believed that the added value (societal as well as academic) of cooperation with ARASPA outweighs the academic challenges and limitations. Indeed, being politically aligned with the group that my research is concerned with came with extremely valuable and otherwise excluded insights into ARASPA as an organization as well as their struggle for the preservation of communitarian water governance.

3. CONCEPTUAL FRAMEWORK

In this chapter, I outline the conceptual framework on which I base my analysis and interpretation of the data collected. Drawing on an extensive body of literature, this conceptual framework consists of three components: a broad theoretical lens (political ecology), an analytical frame (waterscapes) and key concepts (water, mining and identity). First, I briefly describe the most important features and principles of political ecology and I explicate my own take on, and application of political ecology. Hereafter, I explicate how I employ the concept of waterscapes – denoting territories in which water resources and society co-shape each other – as the analytical frame that guides my analysis. Referring to an authoritative body of research on the political ecology of water in the Atacama, I describe how the key concepts of water governance, mining conduct and social identity relate to each other and how – in their triangular interconnectedness – these concepts constitute the waterscape of the Atacama. Lastly, I elaborate on the content and specific application of the three key concepts within this research. Serving as the tools through which I categorize and theorize the social reality which I have observed, these concepts allow for the transformation of raw data into the analytical building blocks through which I eventually construct my argument.

If “research is a dialogue between theory and evidence”, this section serves to clarify my choices and convictions regarding theory in order to explain how I interpret and make sense of my empirical data (Ragin, 2014, p.XXI). All in all, this theoretical framework forms the groundwork on which I built my analysis and argument and it will be referred back to at various points throughout the research.

3.1 Overarching theoretical approach: political ecology

Investigating how a local institution of communitarian water governance is affected by the social conduct of an economically powerful mining company, this research is in all its facets a work of political ecology: the field of studies that aims to shed light on the ways in which humans interrelate with nature and, importantly, how interrelationships between nature and society are permeated by unequal socio-political power relations which often lead to socio-environmental injustices (Paul Robins, 2019). In this section, I discuss several important theoretical works on the essence and application of political ecology studies. By building on and extracting from authoritative works, I situate this research within existing political

ecology debates and I construct my own particular application of political ecology as an overarching theoretical approach through which I conduct my analysis.

Far from a rigid scholarly discipline with fixed guidelines and strict theoretical rules, political ecology must be regarded as a relatively young, dynamic and inventive field of studies. Even though the introduction of political ecology to academia dates back some fifty years, this short time has been enough for the field and its scholars to firmly establish themselves within the social and political sciences on socio-environmental issues. An extensive and vastly fragmented field of studies, it is hard to provide a clear-cut and universally applicable definition of political ecology. A practicable definition however, fitting the objectives of this research, can be derived from Paul Robbins' seminal work *'Political Ecology: A Critical Introduction'* (2019). Drawing on Robbins' work, Micheaux and Jenia explain the following: "political ecology is a field that critically interrogates the nature-society relations, particularly looking at the power relations that intersect and affect access to natural resources, in order to reveal disparities and injustices in the distribution of costs and benefits" (Micheaux & Jenia, 2021, p.360). Robbins explains that the study of political ecology rests on the assumption that all issues over environmental and ecological matters are inherently political in character. That is to say that – contrary to positivist, technocratic and hence 'apolitical' approaches to environmental research – environmental issues and injustices cannot be studied apart from the broader context of political economic structures and socio-cultural power relations in which they are situated (Robbins, 2019).

Hence, to take into account the political dimensions of the relationship between humans and the natural environment is an essential characteristic of the field and one of the core tasks of the political ecologist. This is further underscored in *'The Routledge Handbook of Political Ecology'*, in which Perrault, Bridge and McCarthy outline the field's core characteristics and provide a very broad definition of political ecology as "the critical re-thinking of nature and nature-society relations [...] set out to shatter comfortable and simplistic "truths" about the relationship between society and its natural environment" (2015, p.5). The authors furthermore explain that political ecology is a field of studies "characterized by a normative political commitment to social justice and structural political change" and that it has "from its beginning highlighted the struggles, interests, and plight of marginalized populations" (Perrault et al., 2015, p.8). As described in the methodology section, this research was conducted in a form of cooperation with ARASPA. That is to say, it aims to support the water association in its struggle for survival in the face of threats posed by the lithium mining industry. Hence, political ecology's outspoken

normativity in support of marginalized groups fits well within my specific participative methodological strategy described in the previous chapter.

The specific branch of political ecology applied in this research concerns the political ecology of water. Whereas “political ecology studies how the distribution of power determines the use of the natural environment”, political ecology of water – a specific subject area of political ecology – studies how the distribution of power affects prevalent modes of water governance and distribution within a given socio-environmental context (Rodríguez-Labajos & Martínez-Alier, 2015, p.538; Swyngedouw, 2009; Budds, 2004; Johnston, 2003; Bryant, 1998).

3.2 Analytical frame: waterscapes

In this section, I outline the general content as well as my specific application of ‘waterscapes’: the analytical frame that supports and guides my theoretical analysis. In the broadest sense, a waterscape denotes a space or territory in which people interact with water resources. Used within political ecology as a conceptual perspective to map a particular socio-environment, the waterscape frame aims first and foremost to highlight the intricate ways in which nature and society are interwoven by water and how they co-produce each other over time (Flaminio & Rouillé-Kielo, 2022; Karpouzoglou & Vij, 2017; Swyngedouw, 2009). In the following section, I draw on and combine some of the most important studies that deal with the political ecology of water and waterscapes in the Atacama to explain the commonalities in the historical configurations of waterscapes in Atacama localities. Through my specific conceptualization and application of the waterscapes frame, I make clear how – in the context of the San Pedro – water, mining and identity are co-constitutive. That is to say: mediated by the struggles over water, mining conduct and Indigenous identity continuously shape and reshape each other, in turn transforming prevalent modes of water governance.

The triangular interrelationship between water, mining and identity in Atacama waterscapes:

Indigenous peoples have inhabited and organized themselves in the Atacama for over 12.000 years. As “hydro-social societies” that depend on the effective management of irrigation water, the practices and tradition of communitarian water governance too, date back thousands of years (Cuadra, 2000). Starting

in the late 19th century then, Salpeter and copper mining connected the Atacama to the global economy and introduced the socio-environmental marginalization of Indigenous communities by extractive industries (Lorca et al., 2022). From the very beginning of company-community interactions in the Atacama, water has been the central issue of confrontation and interrelation. Just like the rural Atacameño communities, the development and expansion of mining activity is contingent upon the availability and consumption of water. Hence, the introduction of mining activity in the region signified the introduction of an economically powerful competitor for the region's scarce hydraulic resources and a threat to their customary systems of water governance. As pointed out by a significant body of literature: it has always been primarily through water struggles – the shared pursuit for control over water – that Indigenous communities and mining companies have been forced to engage and interrelate with one another (Babbidge, 2013; Carrasco, 2016; Gundermann & Göbel, 2018; Lorca et al., 2022; Lorca et al., 2023; Prieto, 2021). This demonstrates an important point: Indigenous mobilization – the way in which the people of the Atacama organize themselves politically in the face of external actors – has historically developed in large part as a response to the water-depleting conduct of mining companies.

The works of Prieto and Lorca et al. demonstrate that by mobilizing their Indigeneity and claiming water resources as ancestral properties, the Indigenous people of the Atacama have forced mining companies – in need of a minimum level of local legitimacy to continue their extraction – to listen to their demands and modify their conduct accordingly (Lorca et al., 2022, Lorca et al., 2023; Prieto, 2022; Prieto, 2023). As such, Indigenous identity has at many times been employed as a political strategy to influence the conduct of mining companies and preserve customary systems of communitarian water governance. This leads Lorca et al. to state that, mediated by their struggle over water, “mining shapes what ‘Indigenous’ means and who can claim this identity, while Indigenous mobilization in turn shapes how mining is perceived and carried out” (Lorca et al., 2022, p.1). Thus, the development and continuous (re)formation of Atacameño Indigenous identity – and indeed the content of Atacameño Indigeneity itself – is deeply intertwined with the expansion of the mining industry in the region. In the words of Prieto: Atacameño Indigeneity must be understood “not as a preexisting category but as a process constituted through environmental struggles” (Prieto 2022, p.489). Indeed, Atacameño Indigeneity must be

understood as a strongly relational identity that is co-shaped through its interactions with the mining industry in their mutual struggle for control over water resources.⁷

All in all, the works of Lorca et al. and Prieto demonstrate how the waterscapes of Atacama localities historically consist in the dynamic configuration of water governance, mining conduct and identity processes. This leads me to define the waterscape of San Pedro as a hydro-social space – characterized by its system of communitarian water governance – which is shaped and reshaped over time at the hands of mining development and processes of social identity formation. This research applies this frame to map the recent transformations that have occurred to San Pedro's waterscape. By explicating the triangular interrelationship between water, mining and identity in the context of the Atacama, chapter five explains how the 2016 benefit-sharing agreement (mining conduct) transforms prevalent modes of Indigenous political organization (social identity formation) and thereby ultimately leads to a disruption of ARASPA's organizational functioning (communitarian water governance).

3.3 Key concepts: water, mining and identity

This research revolves around three core theoretical concepts: water governance, mining conduct and social identity formation. In the section above, it is explained how these concepts have historically configured to constitute the waterscape of San Pedro. In this section then, I elaborate on the content of these concepts and I explicate their specific application within this research.

Water governance:

Integral not only to all ecosystems but also central to society and culture, water is of the greatest material and symbolic importance. Indeed, water is a pre-condition for life. Hence, as an academic concept it is exceptionally broad and multi-faceted. Even within the more confined domain of the social and political sciences, the different focuses applied within the analysis of water range wide. Narrowing down, the specific application of the concept of water in this research corresponds to the focus and goals of political

⁷ I wish to make clear that I do not want to depict Indigeneity or identity in general to be no more than a response to the mining industry. Too much of contemporary literature conveys a discourse in which the people and everything in the Atacama are portrayed to exist only in relation to the lithium industry and not as entities in themselves. Instead, Atacameño Indigeneity must be understood as an identity that far precedes, but is today forced to respond to mining developments.

ecology studies. Drawing on the vast body of literature on the political ecology of water, this research considers water as a contested resource with “simultaneous natural and social quality” (Budds, 2004, p.325).

Water commons and communitarian water governance:

Central in this research are the concepts of water commons and communitarian water governance. This research deploys Margreet Zwarteveen’s definition of water governance as “the practices of coordination and decision-making between different actors around contested water distributions” (Zwarteveen, 2015, p.18). As Zwarteveen furthermore explains:

“Such practices are thick with politics and culture, are linked to creative processes of imagining and producing collective environmental futures, and combine political problems of scale (spatial, ecological, administrative, temporal), with problems of coherence (the durable alignment of different people and different waters despite problems of incommensurability and political tensions)” (2015, p.18).

Hence, maintaining that power and politics influence the use and distribution of water, this research maintains that water governance is a political issue by nature.

Relating closely to the concept of communitarian water governance, a water commons can be defined as a water resource that is governed not by the state or its vernacular institutions nor by the private sector, but rather by local user groups who preserve and distribute the resource in a collective manner (CEDLA, 2017; Wagner, 2012).⁸ Often drawing on customary practices of water management and local environmental knowledges, these historically and socio-culturally rooted water governance institutions are operated by and for those people who work and live with the resource (Remington, 2018). Concerning a water commons essential features, I distinguish two core components: 1) a common, collectively owned water property and 2) the collective responsibility for, and commitment towards the preservation, management and use of this property.

From the mid-20th century onwards, a whole tradition of academic research has been devoted to study the characteristics, dynamics and possible merits of local institutions of collective irrigation water

⁸ Online source: <https://tinyurl.com/65zu6s8c>.

governance. Investigating what she 'termed common-pool resources' – referring to resources that are “characterised by the difficulty of excluding actors from using them and the fact that the use by one individual or group means that less is available for use by others” – Nobel prize laureate Elinor Ostrom conceptualized eight design principles that she considers to be fundamental to the technical and organizational functioning of a water commons and hence its survival over time (Green Facts, n.d.; Ostrom, 1990; Ostrom, 1993).⁹ These principles – centred around the maintenance of group boundaries and mechanisms of collective action and decision-making – can indeed be regarded important technical institutional facets.¹⁰ However, Ostrom's work has been criticized by other authors within the commons literature for its overreliance on rational choice theory and its negation of the ways in which local socio-cultural contexts and political power relations influence institutions of common-pool resource management (Araral, 2014; Singleton, 2017). Agreeing with these critiques and recognizing the limitations of Ostrom's strict design principle analysis, I nevertheless choose to draw on her fundamental notion that common-pool resources – due to their inherent non-excludability and the issues of user competition and over-exploitation that occur when not centrally governed – are managed most effectively when governed in collective manner by its users (Ostrom, 1990).

I furthermore draw on Daniel Bromley's concept of “common property regimes”, defined by Margaret McKeane as: “a resource rights arrangement in which a group of users share rights and duties toward a resource” (Bromley et al., 1992; McKean, 2000, p.30). Not explicitly a critique of Ostrom's theory but rather a different approach to the study of common property institutions, Bromley's concept places less emphasis on the technical aspects of institution crafting and allows for a closer analysis of the socio-political dynamics of common property governance. As such, the concept is better suited to account for the type of governance analysis that this research is concerned with.

Mining conduct:

Mining is one of the core research themes within political ecology literature. Particularly within Latin American territories, mining development has historically often intersected with ecological damage,

⁹ Online source: <https://www.greenfacts.org/glossary/abc/common-pool-resource.htm>. Accessed 09-11-2023.

¹⁰ Ostrom's design principles are 1) clearly identified identity boundaries, 2) proportional equivalence between benefits and cost, 3) collective choice arrangements, (4 monitoring, (5 graduated sanctions, (6 conflict resolution mechanisms (7 minimal recognition of rights to organize and (8 nested enterprises (Ostrom, 1993).

unequal power relations and socio-environmental injustices inflicted upon rural and agricultural communities (Alimonda, 2011). The mining conduct that this research is primarily concerned with concerns mining companies' strategies of interaction and modes of engagement with local communities, employed to gain the social legitimacy that is needed to sustain their presence and activity in local territories.

Corporate Social Responsibility:

As mining activity requires the use of land and additional resources, mining companies often seek to engage with groups and communities on the local level in a way that grants them a minimum level of social legitimacy – a “social license to operate” – and hence ensures their continued access to mining territories (Collins & Kumral, 2021, p.1). In the extensive and controversial history of mining in Latin America, interactions between mining companies and local communities have traditionally been characterized more in terms of oppression and resistance than in terms of mutual agreement. Yet, prompted by international discourses on more equitable and sustainable development and corporate behaviour, the idea of corporate social responsibility (CSR) has gained traction among extractive companies and governments in recent decades. A renewed ethical logic of corporate conduct – focussed on the creation of more sustainable social value on the local level and the improved participation of local stakeholders in benefit sharing – CSR policies entail new modes of company-community engagement (Kraus & Britzelmaier, 2012; Kytte & Ruggie, 2005; Matten et al., 2003; Mutti et al., 2012). According to Bethany Haalboom, CSR must be regarded as:

“A catch all term for referring to voluntary codes or declarations aimed at sustainable development [...], essentially ‘soft law’ governance instruments that include codes of conduct developed by individual companies or sectors [...] often cited as balancing progress on economic development, environmental quality and social justice” (2012, p.970).

Aiming and claiming to improve environmental sustainability and social equity, CSR might appear to be an entirely positive development. However, critical scholarship on CSR ideology and its related benefit-sharing agreements maintains that the rationale and practice of these corporate strategies cannot be understood without taking into account the power imbalances that underlay relationships between

mining companies and local communities as well as the power imbalances within these communities. Indeed, as Caine and Krogman explain, benefit-sharing agreements can create social friction and aggravate local tensions (Caine & Krogman, 2010; Gündermann & Göbel, 2018; Haalboom, 2012). Hence, the rise of CSR “from ideology to reality” must be analysed within its broader context of companies’ motivation to acquire local legitimacy among (some) local inhabitants and thereby a social license to operate in mining territories (Lindgreen & Swaen, 2010, p.1).

Especially in the context of Chile’s neoliberal environmental governance regime – characterized by a general absence of the state in terms of regulating socio-environmental risks and issues caused by extractive industries – and the concurrent lack of state monitoring on the mining industry’s conduct, it becomes possible for companies to differ accountability over their environmentally destructive actions by ‘sharing’ it with ‘cooperating’ local stakeholders whom they have aligned to their goals and values by means of benefit-sharing agreements (Gentes & Policzer, 2022; Himley, 2008). To put it differently, by making use of the economic power imbalance and the concurrent “unequal bargaining relationships” to establish forms of partnership with economically marginalized rural communities and thereby obstruct local resistance to mining operations as well as avert negative international publicity, CSR policies can suggest forms of socio-environmental greenwashing (Lorca et al., 2023; O’Faircheallaigh, 2013, p.223). Moreover, given the situation of serious power imbalance, the CSR rationality of companies establishing their own ethical guidelines as well as creating ‘mutual benefits’ and ‘shared values’ with local stakeholders, allows companies to decide and define what their responsibilities towards local communities as well as the natural environment are (Babbidge, 2013; Haalboom, 2012).

Hence, rather than taking at face value the philanthropic corporate discourse that is centred around the notions of equal footedness and mutual agreement, it is pivotal to critically analyse the power relations that permeate and are sustained by CSR policies and their related benefit-sharing agreements. All in all, this research adheres to an understanding of CSR-inspired corporate-community benefit-sharing agreements as mechanisms that – despite generating social and economic value for some – can enhance social conflict and enable mining companies to dominate the terms and conditions of their engagement with less powerful local stakeholders, thereby expanding their control over territories and societies.

Identity formation:

The concept of social identity is of central importance for understanding the changing interrelationships between nature and society. Adhering to Social Identity Theory (SIT), I maintain that social identities are in essence social categories, or rather the products of social categorization (Hogg, 2016; Tajfel, 1981; Wimmer, 2008). According to Fearon and Laitin, social categories are:

“sets of people given a label (or labels) and distinguished by two main features: (1) rules of membership that decide who is and is not a member of the category; and (2) content, that is, sets of characteristics (such as beliefs, desires, moral commitments, and physical attributes) thought to be typical of members of the category, or behaviors expected or obliged of members in certain situations (roles)” (2000, p.849).

As such, social identities – rather than biologically determined and fixed – must be considered as constructed and relational phenomena, shaped and reshaped over time through social interaction. Adding to this constructivist approach to social identity, and in line with the principles of political ecology, I maintain that group identity is not only defined by a group’s social relation to other groups but also by its particular interrelation with nature, and in particular water. That is to say: a group’s relationship to its natural environment is formative of its social identity just like a natural environment is shaped and influenced by those social groups that inhabit and cultivate it (Arias-Maldonado, 2015).

Social identity formation:

As reflected in the quote by Fearon and Laitin, SIT maintains that social identity is constituted by identity boundaries - the rules of membership to a social group – on the one hand, and the characteristics that are assigned to this group on the other hand: “together, ‘boundary rules’ and ‘content’ thus form the necessary, and highly interrelated, components of social identities” (Demmers 2017, p.24). Hence, processes of social identity boundary drawing essentially serve as mechanisms of social in- and exclusion and identity formation. Of central importance are two distinct but interrelated forms of boundary drawing: socio-political boundary drawing – the process through which the social rules and requirements for membership to a particular social group or category come to be defined – and spatial boundary drawing, referring to elements of physical or territorial separation that create or maintain division between different social identity groups (Demmers, 2017).

Building on the idea that boundary drawing is essential to social identity formation, Frederic Barth claimed that ethnicity and ethnic categories to, are inherently relational and socially constructed identities (1969). As paraphrased by Demmers:

“What makes an ethnic identity ‘ethnic’ is to be sought in the ‘social processes of maintaining boundaries that the people themselves recognized as ethnic’ (Baumann 1999: 59). The ethnic group thus is an imagined, constructed community, created through social interaction. This means that ethnicity is not a thing in itself but contextual” (2017, p.28).

It follows that social identities – including ethnic, and indeed Indigenous identities – are no biologically pre-determined entities nor are their characteristics fixed: they are continuously shaped and reshaped through processes of boundary drawing in specific socio-political contexts (Barth, 1969; Wimmer, 2008). This research then, illuminates how the processes of socio-political and spatial identity boundary drawing that have emerged in the context of the 2016 benefit-sharing agreement are currently resulting in the socio-territorial disintegration of San Pedro as a society and thereby the impediment of San Pedro’s system of communitarian water governance.

4. NEOLIBERALISM, INDIGENEITY AND LITHIUM: CONTEXTUALIZING SAN PEDRO'S SYSTEM OF COMMUNITARIAN WATER GOVERNANCE

This chapter paints the picture of ARASPA and San Pedro's system of communitarian water governance. It does so by situating it within its larger context of neoliberalism, Indigeneity and lithium mining. The first paragraph outlines the general context of neoliberalism in Chile, zooming in on the country's 1981 water code and how its logic of privatized water rights implied the disruption of customary, community-based water governance institutions in Atacama localities. The second paragraph goes into the 1993 Indigenous Law through which the state came to recognize the Atacameños as an Indigenous people. In making possible the legal assertion of Atacameño Indigeneity, the law presented a legal pathway for the people of San Pedro to resist the privatization of their collective water property and hence to protect their water commons. However, the law also incited the division of San Pedro's Indigenous peoples into separate Indigenous communities, causing ARASPA's operational territory to be fragmented among different organizational entities. The third paragraph then – building on the previous two – describes the emergence, essence and practical functioning of ARASPA as the association in possession of San Pedro's collective water rights and in charge of operating its system of communitarian water governance.

All in all, this chapter describes and contextualizes San Pedro's system of communitarian water governance – which is the central object of research – as a historical institution that is influenced and reshaped over time in the context of water privatization and state-law-induced processes of identity formation. The chapter ends with a description of the lithium industry in the Atacama: describing the profiles of SQM and Albemarle as the two lithium companies at work in the Salar de Atacama, their disputed environmental impact and their respective modes of engagement with the Atacama's local inhabitants. This constitutes a bridge to the next chapter, where it is explicated how, at present, ARASPA and San Pedro's system of communitarian water governance are threatened in the face of Albemarle's 2016 benefit-sharing agreement.

4.1 Chilean neoliberalism and the privatization of water

In his seminal work *'The Great Transformation'*, Karl Polanyi – one of political economies founding fathers – wrote: “to allow the market mechanism to be sole director of the fate of human beings and their natural environment, indeed, even of the amount and use of purchasing power, would result in the demolition of society” (Polanyi, 1944, p.76). Writing about the politico-economic developments in mid-20th century England, Polanyi illuminates how capitalism – more than just an economic system – entails the social and political structuration of human life as well as man’s relationship to the natural environment. Twenty-nine years after the publication of the book, a great transformation occurred in Chile, when military general Augusto Pinochet – supported by the CIA – staged a coup d’état to overthrow the democratically elected socialist government of President Salvador Allende. Pinochet’s rule lasted from 1973 to 1990. The overnight change from democracy to military dictatorship was an extremely drastic and violent transformation in itself. Yet, another great transformation – strikingly relevant in the light of Polanyi’s theories – occurred in 1980, when the Pinochet regime imposed a new and reformed legal constitution (Human Rights Library, 1980).¹¹ Inspired and supported by U.S. economists, the Pinochet regime forcefully implemented a legal political system that remains to this day one of the most far-reaching neoliberal systems in the world.¹² Presuming liberal economic principles to be universal and infallible, not only economic but also social and political policies were designed to function according to the logic of the free market. As such, Chile’s neoliberal programme entailed a near-complete “privatization of the public sphere, deregulation of the corporate sector, and the lowering of income and corporate taxes, paid for with cuts to public spending” (Bresnahan, 2003; Budds, 2013; Letelier, 1976; Klein, 2014, p.72-73). All considered, Chile’s great transformation consisted of neoliberal rationality becoming the central and ubiquitous governing principle in all segments of society, shaping the socio-political power structures and nature-society relations that largely persist to this day.

The Privatization of Water:

¹¹ Online source: <http://hrlibrary.umn.edu/research/chile-constitution.pdf>. Accessed 13-10-2023.

¹² In 2020, a year after the popular uprisings, the majority of Chileans voted for the constitution to be rewritten. As the first draft was rejected, the process of constitutional change is still underway.

An emblematic reform that came with the new constitution – constitutive of national environmental policies and their underlying power relations up until this day – was the 1981 neoliberal Water Code. The central principle in this model of water governance is the privatization of water rights. Set out to transform water from a public good into a freely tradable commodity over which one enjoys private ownership, the water code implied a far-reaching commodification of nature (Bauer, 1996; Bauer, 2005; Budds, 2004; Budds, 2013; Budds, 2020; Gentes & Policzer, 2022; Prieto, 2015; Prieto et al., 2022). Budds depicts the neoliberal logic behind the reform as follows:

“a system of private tradable water rights separate from land would promote efficient water use by enabling the allocation of water to higher-value uses [...] this measure was aimed at improving the efficient use of scarce water (especially in arid central and northern Chile) in order to enable the growth of Chile’s export-oriented natural resources industries” (2013, p.306).

In a country already marked by great economic inequality and power asymmetry, an important – and premeditated – outcome of this market rationality was the rapid and vast accumulation of water rights by the mining industry at the expense of agricultural and pastoral communities. A fate which – as will be described in the next paragraph – befell many Atacameño communities (Carrasco, 2016; Prieto, 2015). One way in which mining companies acquired water rights was by using their advantaged legal knowledge to claim water resources over which rights were not yet legally claimed. This included the appropriation of water resources on which local communities depended for their livelihood. Another way to expand control over water resources was by purchasing rights from individuals in agricultural communities after they were left de-collectivized and hence socio-economically powerless due to the privatization of their common property (Cuadra, 2000; Prieto, 2015).

Considering the serious power imbalance that exists between small-scale agrarian communities and the state-supported mining industry, Erik Swyngedouw describes water privatization as a form of “accumulation by dispossession”: a capitalist strategy to relocate water from marginalized communities to extractive industries that are strongly privileged and favoured by the neoliberal reform (Swyngedouw, 2005, p.82). Transforming water into a commodity that is distributed according to the logic of the free market implies the mental and physical separation of water from the land through which it originally flows. This practice runs counter to the ways in which some of my interviewees – referring to traditional Atacameño spiritual knowledge systems – conceive of water as a living being rather than an element,

and therefore as an entity that is inseparable from the land. As explained by an Indigenous irrigator: “the water is not mine, it is from the earth, it is like the blood of the earth. It can't be sold because it's from the earth” (Interview respondent 3, San Pedro, May 10th 2023). Another interviewee, also an Indigenous irrigator, stated the following: “We are a people of water. [...] We have a spiritual perception of the connection between water and human being. She is a sacred element of our territory” (Interview respondent 6, San Pedro, May 18th 2023). In addition to a blatant form of cultural violence, the separation of water from the ecosystems that it sustains has led to many instances of critical ecological damage and the degradation of natural environments on which local livelihoods depend (Carrasco, 2016; Weinberg & Figueroa, 2023).

Dispossessing Atacameño Communities:

The ecologically destructive and socially disruptive impacts of the DGA's water privatization – as well as the concurrent encroachment of mining activity – have been best observable in the mineral-rich but extremely arid and fragile environments of the Atacama region, home to many small-scale agrarian communities whose livelihood and survival has historically depended on the management of the scarcely available water resources (Carrasco, 2016; Romero, 2012; Weinberg & Figueroa, 2023; Babbidge et al., 2019). Disregarding communities' cultural and historical practices of collective water governance and the hydraulic-environmental knowledge embedded in them, Chile's General Water Directorate (DGA) was tasked with the homogenization of water governance in the Atacama region according to the formula of the 1981 water code. In many Atacameño localities, the arrival of the DGA and their imposed water system signified the individualization of their collective water property and the disruption of traditional practices of collective water management. As such, the privatization process implied the enclosure of historical water commons (Heynen & Robbins, 2005).

Among the histories of water privatization in Atacamenean communities, the case of the Chiu-Chiu community is an emblematic and revealing case as it neatly reflects the reform's mechanisms of dispossession. As Prieto describes in his research on the case, the DGA “aimed to transform existing informal and collective systems for managing water into a formal model of private property rights that restricted water users' access to measurable volumes of water per unit of time” (Prieto 2015, p.222). The process of privatization – spurred by a lack of information provided and fear of the military regime

– resulted in the community of Chiu-Chiu losing control over their irrigation water to the copper mining industry and the consequent drying of their pastoral wetlands. This goes to show that – contrary to the neoliberal principle of minimal state interference in market mechanisms – the implementation of Chile's free market water model relied on high levels of top-down state regulation and even military power (Prieto et al., 2022).

Yet, different communities have had – and still have – their own distinct experiences with the state, the mining industry and with water struggles in general.¹³ Maintaining different and often ambivalent or shifting conceptualizations of the value of water as well as its qualitative essence – ranging from a commodity to a sacred spirit – communities have maintained different approaches towards mining companies and the sale of water rights (Babbidge, 2016; Carrasco, 2016; Lorca et al., 2022). Some agreed to sell or lease water, some resisted commodification, and others – like Chiu-Chiu – have been plainly dispossessed (Cuadra, 2000; Prieto, 2015). Referring back to Polanyi, we see that in the case of communities like Chiu-Chiu, allowing “the market mechanism to be sole director of the fate of human beings and their natural environment” indeed did result in “the demolition of society” (1944, p.76).

To sum up the paragraph: as an emblematic part of Chile's far-reaching neoliberal political transformation, the 1981 water code drastically changed prevailing rules on how society ought to relate to nature, and indeed how man must relate to water. Strongly favouring the growth of the mining industry over the survival of agrarian communities, the neoliberal model of water governance disrupted customary traditions of communitarian water governance, thereby reshaping the socio-environmental fabric of many Atacameño communities. Against the backdrop of Chile's menacing privatization process, the third paragraph of this chapter zooms in on the particular case of San Pedro, explaining how the San Pedrinos were conscious of the threats posed by the DGA's water reforms and how they managed to avert the demolition of their customary water governance institution.

¹³ A caveat must be made here as the history of water privatization is for many a dark and traumatic one which should be approached with sensitivity. Hence, I hope to make clear here that the representation of this history presented in this research does not nearly describe all of its features and how they played out for each different community. As mentioned, the histories of marginalization, struggle and resistance vary for each community. This section merely outlines a general context, pointing out those parts which are necessary to facilitate my argument.

4.2 The 1993 Indigenous Law and the ‘emergence’ of Indigenous communities:

Before describing the history, characteristics and current functioning of ARASPA, another neoliberalism-induced development – formative of ARASPA’s current situation – must be explained.¹⁴ This development concerns the Chilean state’s legislation on the country’s native peoples and the subsequent sociological ‘emergence’ – or rather formalization – of Indigenous communities in the Atacama. In and around the Salar de Atacama region, eighteen communities gained legal recognition by the state. As will be described in detail in chapter five, the fact that these eighteen communities were the only parties to later be included in the 2016 benefit-sharing agreement with Albemarle – a controversial decision in the eyes of part of San Pedro’s population – resulted in a situation of mounting social tensions as well as the increasing fragmentation of ARASPA’s operational territory among different organizational units. Hence, more than a mere contextualization of ARASPA’s situation, the history of Indigeneity and Indigenous communities presented here is vital to understanding current processes of social identity formation and socio-territorial disintegration within San Pedro, themes that are at the core of the argument that will be developed in the next chapter.

The Resurgence of Atacameño Indigeneity:

In 1993, after the fall of Pinochet and Chile’s return to democracy, the government of President Patricio Aylwin promulgated a law that granted legal and sociological recognition of Indigenous identity to many of Chile’s native peoples. The official description of Law N° 19.253 – better known as the 1993 Indigenous Law – goes as follows: “establishes rules on the protection, promotion and development of the Indigenous peoples and creates the national corporation of Indigenous development” (Ministerio de planificación y cooperación 1993, p.1). Due to a long history of repression against Chile’s Indigenous peoples, Atacameño Indigeneity was at this point still a rather latent, or hidden identity in San Pedro. As explained by an Indigenous San Pedrino who lived through the socio-political changes of the late 20th century:

¹⁴ By neoliberalism-induced development is meant a state reform that was conceived of in the context of the Chilean state’s particular neoliberal government rationality and that was legitimated on the grounds of neoliberal socio-economic principles.

“In the Atacama we knew we were Indigenous, but we were still a little bit hidden because of the issue of discrimination, of depreciation. So, among us, we felt like Indigenous, but there were many who hid their descent so as not to be discriminated against” (Interview respondent 9, San Pedro, May 28th 2023).

Yet, as the native people of the Atacama were initially not taken aboard as an Indigenous identity group, the Atacameños decided to mobilize themselves and their identity to lobby for state recognition. As Prieto explains, the pursuit of the San Pedrinos to become recognized by the state as Indigenous was intricately related to their endeavour to protect their common water property (Prieto, 2022; Prieto, 2023). This had everything to do with the fact that the 1993 Indigenous Law opened up the legal possibility for Indigenous groups to claim certain water resources as ancestral property. Hence, the San Pedrinos mobilized their Indigenous identity in part as a strategy to obtain ownership over the water from the San Pedro River, thereby preventing the state from disrupting their customary system of communitarian water governance and preventing mining companies from expropriating their collective properties. As explained by the same interviewee:

“We always saw that there was a risk that any third party could come, private companies, the state even, to take the water, to write their names on it so that we would be left without water. So we started to worry. That was something that was already being talked about before it was talked about that we were Indigenous. We talked as farmers that we had to protect the water” (Interview respondent 9, San Pedro, May 28th 2023).

As outlined in the theory section, this process of re-indigenization signified the beginning of what Prieto terms “the resurgence of Atacameño Indigeneity”: the process through which the people of the Atacama returned to openly express their culture and identity, re-claiming their Indigeneity in the face of the nation and the state (Prieto, 2022; Prieto, 2023). As described in the conceptual framework chapter— like any other social identity – is a socially constructed and strongly relational identity: rather than fixed, Atacameño Indigenous identity must be understood as a development: “a process constituted through environmental struggles” (Prieto 2021, p.489). The intersection between the resurgence of Atacameño Indigeneity and the protection of the water commons once more exemplifies how Atacameño Indigeneity is co-shaped by its interrelation with the mining industry in the mutual struggle for water. On the whole, the Atacameños’ successful reclamation of legal Indigenous personality in the face of the state enabled the people of San Pedro to maintain collective ownership over the San Pedro River and their customary

system of communitarian water governance.¹⁵ Yet, by changing the rules on who is considered Indigenous and who is not, the 1993 Indigenous Law simultaneously signified a highly problematic reconfiguration of identity boundaries within the Atacama region. The essence and socio-political impact of this reconfiguration then, will be discussed in the following sections.

Neoliberal multiculturalism:

Introducing certain benefits for Indigenous communities in the form of economic support and greater levels of autonomy, the 1993 Indigenous Law opened up new socio-economic opportunity structures for those groups recognized by the state as Indigenous. Importantly the law provided Indigenous communities with the opportunity to claim tenure over certain territories – together with the water resources located within this territory – as ancestral property (Gundermann & Gobel, 2018). Put as such, the law seems to be utterly supportive and empowering for the Indigenous people of the Atacama. Yet, it must be understood that – even though the foundations of some Indigenous communities were based on the more long-established *Ayllu* entities – the organizational unit of ‘the Indigenous community’ never existed until the state incited its social construction through the Indigenous Law.¹⁶ As Benavides and Sinclair explain: “the ‘community’ is an organizational juridical figure defined by and for the State, which does not necessarily coincide socially and territorially with the traditional community” (2014, p.35 as cited in Lorca et al., 2022, p.6). In other words, the ‘emergence’ of the Indigenous communities – as well as their base structures and possibilities for political organization – were imposed and are thus influenced by Chilean state law. As explained by a self-identified, but not legally recognized Indigenous irrigator and independent journalist:

“The definition of culture that is in the Indigenous Law says that Indigenous culture is a heritage of the Chilean nation. As such, it says that it is a property of the Chilean nation and that the Indigenous people can display their culture as long as it does not go against

¹⁵ It is important to note most Indigenous people from the Atacama refer to themselves not as Atacameños but as ‘Lickan Antay’, which is the more correct historical name. The name “Atacameño peoples” was only assigned to the Lickan Antay by the state through the 1993 Indigenous Law.

¹⁶ The *Ayllus* – “understood as a group of families linked by a common territory and ancestry” – are the older demographic units of the Atacama (Garcés & Maureira, 2018, p.232 as cited in Lorca et. al, 2022, p.7).

the moral, good customs and public order. That is, the state has the right in Chile to teach you how to be Indigenous” (interview respondent 4, San Pedro, May 12th 2023).

Indeed, the law implies that state law – rather than the Indigenous people themselves – determines the legal and sociological requirements for being Indigenous. As the law enables the state to determine who receives economic support and who does not, the Indigenous Law provided the state with the power to influence the content of Indigeneity and direct the organizational formation of Indigenous communities according to its own neoliberal logic. Charles Hale refers to this process of strategic and controlled cultural recognition – common among Latin American government regimes in the late 20th century – as “neoliberal multiculturalism”:

“The emergent regime shapes, delimits, and produces cultural difference rather than suppressing it [...] In so doing, they find that cultural rights, when carefully delimited, not only pose little challenge to the forward march of the neoliberal project but also induce the bearers of these rights to join in the march” (2000, p.12-13).

Hence, in Foucauldian terms, neoliberal multiculturalism – or state-endorsed cultural difference – can be regarded as a disciplinary tool, wielded by the state to produce neoliberal subjects, non-deviant to the national political system and compliant with the state’s vision of modernity and progress (Rocabado, 2015). This is clearly reflected in the words of one – legally recognized – Indigenous interviewee when asked about the perceived rationale behind, and practical outcomes of the 1993 Indigenous Law in the case of San Pedro:

“The State of Chile claims to recognize us through an Indigenous Law [...] but that Indigenous Law, in its essence, tells us how we should function. And therein lies the error: we stop being autonomous in that we can no longer decide, in line with our own roots, how we have to continue functioning in relation to the State of Chile. Now, the State tells us how we must function to be recognized, that is the difference.” (Interview respondent 6, San Pedro, May 18th 2023).

Thus, in practical terms, Chile’s post-dictatorship neoliberal multiculturalism doctrine – as induced by the 1993 Indigenous Law – increased the state’s control over the political organization of Indigenous identity groups. Yet, the consequences of state-sponsored cultural recognition extend further than the imposition of neoliberal – primarily mining-related – development in Indigenous territories. As Hale explains, more than “a deepened state capacity to shape and neutralize political opposition” it also

culminates in “a remaking of racial hierarchies across the region” (Hale, 2000, p.1). Indeed – and as will be further explained in chapter five – the 1993 Indigenous Law introduced new socio-political and spatial identity boundaries within the municipality of San Pedro. Drastically impacting the socio-cultural fabric and politico-organizational constellation of San Pedro, these boundaries would ultimately contribute to the current disruption of San Pedro’s system of communitarian water governance.

Indigenous communities in ARASPA’s operational territory:

In the case of the Salar de Atacama region, the 1993 Indigenous Law indeed did result in “a remaking of racial hierarchies across the region” (Hale, 2000, p.1). A total of 18 communities were appointed state legal recognition, 10 of these communities are located within ARASPA’s operational territory (see Figures 1 and 2). Notwithstanding their short span of existence, the communities quickly developed to become the most important local actors in the interaction with both the state and mining companies (Gündermann & Göbel, 2018).¹⁷ As Gündermann & Göbel explain about the fast and sudden ‘emergence’ of the Indigenous communities:

“Indigenous Communities, on their own initiative and within a framework of institutional opportunities and very favourable policies, quickly settled as principal actors in the formulation of demands and the reclamation and defence of lands, water and other natural resources” (2018, p.476).¹⁸

Initially, the people of San Pedro intended to create one big community that would encompass all Indigenous people living within the municipality: the San Pedro Indigenous community. However, as the law established that each community was to receive the same, fixed amount of economic support – independent of the community’s size – the state presented clear socio-economics incentives for the creation of multiple communities instead of only one and hence for the demographic and spatial

¹⁷ It is important to note that when I use the term ‘Indigenous community’, I do not refer to a homogenous group of politically aligned individuals but rather to the Indigenous community as a socio-organizational entity and to its leadership. It must be understood that many community members – indeed almost all of my state-recognized Indigenous interviewees – strongly disagree with a large part of their community’s leadership’s socio-political visions. Hence, when I refer to ‘the Indigenous community’ and its visions and conduct, this must not be understood as the consensual and agreed-upon vision and conduct of all its individual community members but rather the outcome of internal political decision-making processes. Processes that – as exclaimed by multiple interviewees – are not always entirely democratic.

¹⁸ Quote personally translated from Spanish to English.

disintegration along the lines of the newly created, state-imposed identity boundaries. As explained to me by a state-recognized Indigenous San Pedrino who works within the municipality:

“We could have taken advantage of the creation of the communities in a very good way, but in the end, as the resources came per community, that incentivized the creation of more communities. [...] So, since each community had the opportunity to apply for only a limited amount of money per year – I think it was like 5 million pesos per year in those years - the communities said: “if we create more communities we can get more resources as each of them can have the same 5 million pesos for their territory.”

(Interview respondent 8, San Pedro, May 23rd 2023).

As each newly constituted community made claim to certain territories as their own ancestral property, the emergence of Indigenous communities went hand in hand with the emergence of inter-community territorial disputes (Gundermann & Göbel, 2018; Lorca et al., 2023). Many interviewees believe the introduction of socio-economic incentives for fragmentation to be a premeditated strategy by the state

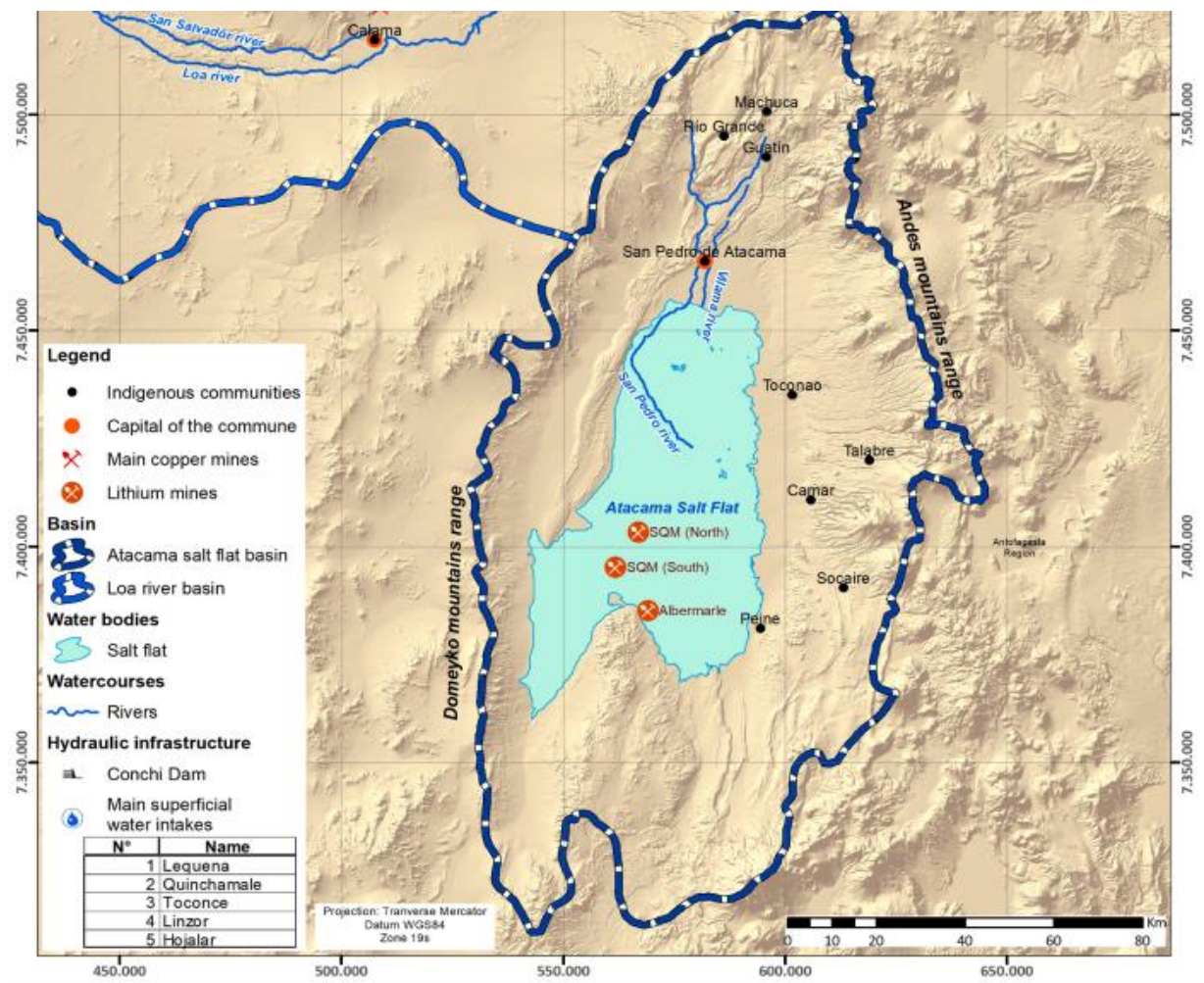


Figure 1: Map of the Salar de Atacama/Atacama salt flat basin (Prieto & Calderón, 2022, p.7).¹⁹



Figure 2: Map of San Pedro, the San Pedro River and surrounding *Ayllus*/communities (Costa et al., 2007, p.30).²⁰

to create internal division and inhibit Indigenous mobilization in opposition to mining development in the Atacama. As explained by an Indigenous water activist in San Pedro:

"I think that what the state is doing to the people is cruel. Because it is dividing a people that was united. Now we are all fighting. In the end, the saying goes, divide the people and conquer: they are doing this here, they have us fighting over a few crumbs of resources while they are going to exploit the territory and take the resources to Santiago. In the end, it's the people who lose"
(Interview respondent 6, San Pedro, May 18th 2023).

Indeed, due to the sharp, state-induced social identity boundaries and the concurrent situation of widespread inter-community conflict within San Pedro, it has become complicated for the Indigenous people of San Pedro to organize themselves collectively and mobilize politically. Whether or not premeditated, state policy has indeed reshaped the socio-political constellation of San Pedro in such a

¹⁹ Note that this map shows only 8 of the state-recognized Indigenous communities. The other 10 communities—coincidentally those that are located in and directly around San Pedro de Atacama and hence within ARASPA's operational territory—are not depicted on this map but on the map in Figure 2.

²⁰ Except for Conde Duque, Tchecar, Tulo, Beter and Poconche, all of the *Ayllus* displayed in this Figure are state-recognized Indigenous communities and hence included in the 2016 benefit-sharing agreement.

way that it has been made increasingly difficult for the San Pedrinos to come to a common political position on the threats they face today and to put forward strong, unilateral demands towards the state and the mining industry to protect the future of their natural environment (Lorca et al., 2023).

On the whole, the impact of the 1993 law on the social fabric and demographic constellation of San Pedro is threefold: it spurred the process of Atacameño Indigenous resurgence, or re-ethnicization, it constituted a situation of state-endorsed Indigenous political organization and it divided San Pedro's Indigenous people into different territories controlled by different, often competing communities. The result of all this is a state of constant inter-community conflict, increasing social and territorial disunification and hence the impediment of unified Indigenous political mobilization against the state and mining industry up until this day. The next chapter will pick up on this threat of the 1993-Law-induced deepening of identity boundaries and internal conflict to explain how the 2016 benefit-sharing agreement aggravates ongoing processes of socio-territorial disintegration, thereby ultimately disrupting San Pedro's system of communitarian water governance.

4.3 San Pedro's system of communitarian water management:

As explained earlier, the survival and development of San Pedro is in large part a history of effective governance of irrigation water. Sustained by collective dependency on, responsibility over and commitment to the water commons, communitarian water governance in San Pedro as an institution dates back thousands of years. Referring back to the history of water privatization in the Atacama, this paragraph describes how the irrigators of San Pedro managed to secure the San Pedro River as collective water property and how ARASPA – the association in charge of governing and operating the water commons – was officially constituted in 1997 for this very purpose. Hereafter, I delve into the characteristics of ARASPA and the practice of communitarian water governance in San Pedro, outlining the association's essence, responsibilities and functioning as well as the threats and pressures that it faces today.

Securing the water common:

As described, different Atacameño communities have experienced different histories with the DGA and the process of water privatization. In San Pedro, this history is one of resistance against the imposed water model and the protection of customary practices of community-based water management. In 1984, the San Pedrinos witnessed how the state's top-down irrigation reforms and the consequent largescale sale of individual water rights to mining companies disrupted socio-cultural fabrics, agricultural practices and whole ecosystems in neighbouring localities (Cuadra, 2000; Sepúlveda, 2015). As explained by a local director in the work of Manuel Cuadra:

“...the very survival of the Atacameño culture is put at risk by incorporating totally unknown concepts, transforming it and starting a race for the accumulation of rights by foreign agents with economic power, offering unmanaged sums of money to farmers, who, dazzled by it, agree to sell their water, solving specific problems but leaving their heirs without the possibility of continuing with agricultural activity, causing them to be forced to emigrate to other population centres” (2000, p.97).²¹

Hence, when the DGA – from 1991 onwards – aimed to expand its reforms throughout the whole Atacama region, a movement had been formed in San Pedro in resistance to the state's interference in their customary water governance institution (Cuadra, 2000). In search of legal pathways to maintain the San Pedro River as a common hydraulic property, the introduction of the 1993 Indigenous Law eventually opened up possibilities for securing collective water rights. The second paragraph of the third transitory article of law N° 19.253 specifies the protected status of water rights for the Atacameño and Aymara peoples of northern Chile. As such, the acquisition of the state's sociological recognition of their Indigeneity presented the people of the Atacama with the opportunity to claim certain water resources in their territories as ancestral property. As Cuadra explains:

“...the law opened a space within each community for the application of Indigenous customs [...]. In effect, the owners of the rights are the communities and not their members. As such, within each of them, the rules of the Water Code, which regulate relations between rights holders, do not apply, and instead the customary rules that the community itself has created and is constantly reworking have full validity” (2000, p.111).²²

²¹ Quote translated personally from Spanish to English

²² Quote personally translated from Spanish to English

Hence, in order not to divide the rights to the San Pedro River among San Pedro's individual irrigators, ARASPA – officially an Indigenous water association – was constituted in 1997 with the purpose of obtaining ownership of collective water rights.²³ Including the upstream village of Río Grande – also historically dependent on the river for its irrigation practices – in the association, ARASPA successfully claimed rights to 1157 litres per second from the San Pedro River (Cuadra 2000, p.108).²⁴ Hence, the creation of ARASPA can be regarded as the formal institutionalisation and regularization of San Pedro's water commons, granting state-legitimacy to an institution that has enjoyed local legitimacy for thousands of years. It is commonly believed that ARASPA's unique situation, defiant of the national water model, has always been a thorn in the flesh of the state and many irrigators feel that the DGA is still seeking to standardize and appropriate the system into their neoliberal model. Nonetheless, to this day the sale of individual water rights to third parties is kept legally impossible, ensuring the protection of collective property and the preservation of the system of communitarian water governance.

ARASPA:

ARASPA is the association in charge of maintaining and operating San Pedro's system of communitarian water governance. On its own societal role, ARASPA states the following: “[ARASPA's] function in society is to administrate and manage the irrigation water of the San Pedro River in a sustainable, empowered and innovative way, according to the needs of its farmers and the Oasis” (ARASPA, n.d.).²⁵ ARASPA's core tasks include the logistic administration, infrastructural maintenance, institutional communication and social organization that is necessary to sustain the common property and ensure the fair distribution of irrigation water among its users. In San Pedro – like in most agrarian communities of the Andes – collective dependency on, and responsibility over a common water property has always been of key importance in generating and sustaining community cohesion. Moreover – and this is a general point of agreement among everyone I have spoken to in San Pedro – water is at the very heart of Atacameño culture, history and identity. The centrality of water within Atacameño societies

²³ ARASPA is in its statutes an Indigenous organization. Yet, Indigeneity is not a requirement for membership and no differentiation is made between Indigenous and non-Indigenous irrigators.

²⁴ As explained, the volume of water that flows from the river has decreased to an estimated 340 litres per second today.

²⁵ Online source: <http://araspa.cl/>. Accessed on 12-09-2023. Quote personally translated from Spanish to English. Brackets personally inserted.

concerns the treatment of water as a sacred artefact, as well as the practice of irrigation water management as a socio-cultural tradition.

Practically, ARASPA consists of a central board of democratically elected directors and eight territorially demarcated irrigation groups. By opening and closing compartments in the vast system of canals, each irrigation group gets its turn to irrigate. Each group has its own coordinator, responsible for the fair distribution of irrigation water among the irrigators. In the end, each irrigator is appointed a certain timeframe to open their gates and lead the irrigation water to their plot of land. Their farmland is then flooded by the water, a traditional agricultural practice that sees to it that the extremely dry soil remains sufficiently humid for the crops to survive until the next irrigation turn. However, the ever-decreasing volume of the San Pedro River poses ever-growing threats to the sustenance of irrigation and agriculture in San Pedro (Sepúlveda, 2015).

Membership to ARASPA is not limited or restricted by social identity and each member enjoys equal rights. That is to say, the association does not discriminate between members from different communities, nor between San Pedro's Indigenous and non-Indigenous inhabitants: the association is open to anyone who irrigates. Logically, equal rights and voice imply equal responsibilities and obligations. These responsibilities include the provision of labor for the monthly and yearly cleaning of the canals. To ensure that the canals remain in good shape and to prevent the inhibition of the water's flow, each irrigator is responsible for the monthly cleaning of the canals on the terrain of their upstream neighbour. The yearly maintenance comprises a collective cleaning of the whole system of irrigation canals, including the dredging of all ponds and aquifers. A practice that dates back thousands of years, this yearly event constitutes an important socio-cultural tradition (Babbidge, 2017).

In its essence, San Pedro's system of communitarian water governance consists of two components: a common hydraulic property and the collective commitment towards this property. As explained in the conceptual framework, all common-pool resource institutions function according to their own "common property regime" (McKean 2000, p.30). ARASPA's common property regime – revolving around the equal rights and responsibilities among the irrigators – is well reflected in Cuadra's explanation of the common statutes of Indigenous water communities and associations in the Atacama:

“All users have the obligation to participate, on equal terms, in the collective construction and maintenance works of common works. Each one of them has the right to a quota of water in proportion to the surface of land they cultivate, which is assigned through a sophisticated system of shifts or ratios. All have the same right to voice and vote in the assemblies, regardless of corresponding volume of water. And finally, everyone democratically elects their leaders in charge of organizing collective work, distributing water, collecting fees and applying sanctions” (2000, p.106).²⁶

Hence, the system of communitarian water governance is run by and for irrigators and herein lies the ‘communitarian’ element: its functioning and existence fully rely on equal participation and shared responsibility. Yet, despite its historical significance and the renowned socio-cultural importance of water governance, ARASPA currently finds itself in a seriously compromised economic position. Apart from the payment of the two gatekeepers – the only employees with a paid contract – ARASPA’s biggest expenses consist of the maintenance of its irrigation infrastructure. At the end of the month, each irrigator pays a small contribution to ARASPA, the amount depending on the amount of land irrigated. Yet, given the vast expenses of maintaining an outdated and rapidly deteriorating system of irrigation canals, ARASPA’s revenues fall short. As explained by a director of ARASPA:

“As we do not have money, our infrastructure dates back to the 60’s. Imagine, it is in operation for more than 60 years already, no less. That means that it is already broken: there are leaks, the water supply is not working, the iron is rusty, the adjustment systems are not working, you close a water supply and there is leakage everywhere. So our irrigation infrastructure is in very bad condition and we have not been able to do anything.”
(Interview respondent 6, San Pedro, May 18th 2023).

Keeping contribution costs low and receiving no stable funds from the state, ARASPA is economically dependent on the financial contributions of each of the ten Indigenous communities located within its operational territory. These Indigenous communities – receiving incomes from the state, tourism and importantly from the benefit-sharing agreement with Albemarle – dispose of profoundly greater economic capacities than ARASPA. Given the fact that ARASPA – working for all people of San Pedro and therefore for all of San Pedro’s Indigenous communities – is not included in the benefit-sharing agreement with Albemarle, a deal was struck between ARASPA and the communities: each community

²⁶ Quote personally translated from Spanish to English

is obliged to reserve a percentage of their lithium revenues as a monthly contribution to ARASPA. The communities are however, completely free to determine what this percentage is. This structure of redistribution, as well as its problematic implications for ARASPA, will be discussed at length in the following chapter. For here, it suffices to state that – for most communities – the amount of money shared with ARASPA is by all standards very little, with multiple communities contributing no more than one per cent of their lithium revenues.

All in all, this paragraph painted the picture of ARASPA: the association that was brought into existence to secure collective water rights and to operate San Pedro's system of communitarian water governance. Today ARASPA is largely dependent on the individual economic contributions of each of the state-recognized Indigenous communities within its territory. With little to no support from the state and its institutions and lacking contributions from the communities, ARASPA currently finds itself in a very fragile economic position that complicates its function and indeed its very survival.²⁷

4.4 Chile's Lithium Boom:

Lithium was first discovered in the Atacama in 1962 (Jerez et al., 2021). Today we know that Chile contains around 35 per cent of global lithium reserves, more than any other country in the world (Statista Research Department, 2023a).²⁸ As the Salar de Atacama contains an estimated 90% of Chile's national lithium reserves, the salt plane is by far the planet's largest known lithium source (Villegas, 2023).²⁹ From 2011 to 2022, Chile's national lithium production rates have increased by more than 350 per cent. Also in 2022, Chile was responsible for 30 per cent of global lithium production, surpassed in the ranks of the world's top-producing countries only by Australia (Statista Research Department, 2023b).³⁰ In our globalised capitalist economy, international demands have local impacts. Hence, if the world is experiencing a lithium boom, it is no understatement to say that over the past decade, a true lithium explosion has taken place in Chile. The epicentre of this explosion being the Salar de Atacama.

²⁷ Given that there is little documentation on the logistical and practical functioning of ARASPA and the irrigation system that is openly available, the information provided in this paragraph is predominantly generated through personal fieldwork observation.

²⁸ Online source: <https://www.statista.com/statistics/1253739/lithium-reserves-worldwide/>. Accessed 07-11-2023.

²⁹ Online source: <https://tinyurl.com/bdefwxd9>. Accessed 07-11-2023.

³⁰ Online source: <https://www.statista.com/statistics/717594/chile-lithium-production/>. Accessed 07-11-2023.

SQM and Albemarle:

Despite its status as world's largest lithium reserve, there are only two mining companies that operate in the Salar de Atacama: Sociedad Quimica y Minera de Chile (SQM) and Albemarle Corporation. This lithium oligopoly – an odd derogation in the context of Chile's radical free market system – came into existence due to the 1976 Organic Law which classified lithium as a resource with potential nuclear capacity and the consequent article 8 of the 1983 mining code which reserved the rights of exploitation exclusively for the state and private parties contracted by the state. Because of this legal exception, all lithium extraction in Chile is – on paper – controlled by the state's Production Development Corporation (CORFO). However, in practice the state started to outsource lithium production to the private sector by granting lease contracts to private mining companies from 1980 onwards. Today, after a history of numerous company acquisitions, fusions and takeovers, SQM and Albemarle are the only two lithium mining companies in possession of a state license to operate on Chilean soil (Gundermann, 2018; Jerez, 2021). After negotiations in 2014, CORFO set out to sign new leasing contracts with both companies, resulting in pending contracts with SQM until 2030 and with Albemarle until 2044. In exchange for authorisation to extract lithium from Chilean territories, the companies pay a significant part of their profit to the state:

“The lease contracts are revenue based and consist of a progressive marginal rate on the price of lithium chemicals that can reach up to 40% for the tranche where the price of lithium carbonate exceeds \$10,000 per tonne” (Fitch Wire, 2023).³¹

Although the mining activities of both companies extend across a multitude of salt planes and mineral-rich territories in Northern Chile and in the case of Albemarle even around the world, the Salar de Atacama remains for both by far the most extensive and lucrative site of extraction.

Disputed ecological impacts:

In 2022, SQM alone conferred over 5 billion U.S. dollars to the Chilean state treasury (SQM, 2023). This goes to show that lithium has exceeded copper as Chile's most lucrative raw material. Seeking to

³¹ Online source: <https://tinyurl.com/mrsy6cws>. accessed 07-11-2023.

maintain a dominant position in international lithium markets, the Chilean government has a lot of interest vested in the growth of the lithium industry. Moreover, Chile's free-market-based political system has always privileged the economically important mining sector over the interests of the rural communities on whose territories the mining companies operate (Gentes & Policzer, 2022). This privileged position is reflected in the Chilean state's practical absence in terms of regulating and monitoring the environmental risks caused by mining projects. As a result of this neoliberal environmental governance regime, SQM and Albemarle are appointed the responsibility to carry out the environmental impact assessment of their own mining activities in the Salar de Atacama. In other words, the duty of monitoring risks and preventing ecological damage associated with water extraction in the Salar de Atacama befalls the very companies that do the extraction and hence cause the risks. As explained in the introduction, the over-extraction of water in the Salar de Atacama is estimated at more than 2000 litres of brine water per second, amounting to 63 billion Litres per year (Jerez et al., 2021). Yet, the data generated by the companies' environmental monitoring system proclaims that there is no serious ecological damage nor hazard to speak of. These figures, as well as the methods, measurements and chosen sites of monitoring, are highly contested by both local inhabitants and independent scientists who claim that lithium mining-induced water depletion does indeed cause serious ecological damage to the Atacama's extremely fragile, but living ecosystems (Garcés & Alvarez, 2020; Jerez et al., 2021; Liu et al., 2019; Marconi et al., 2022; Romero et al., 2012). Moreover – and of specific impact to ARASPA and the availability of irrigation water in San Pedro – many inhabitants are convinced that there exists a causal relationship between increasing lithium extraction and the decreasing superficial water levels in the region surrounding the Salar. This includes the San Pedro River's decreasing flow. Indeed, the river's volume has dropped drastically over the past decades. However – as for most of the environmental hazards that the Atacama is facing today – empirical research on the relationship between lithium mining and the diminution of superficial water flows is still lacking.

Company-community interrelations:

As described in the introduction section, mining companies seek to engage with local groups and communities in a way that grants them a 'social license to operate'. Logically, SQM and Albemarle's water-depleting and ecologically damaging conduct in the region does not improve their local social

legitimacy. Moreover, inscribed in the contracts that the companies signed with CORFO in 2014, both SQM and Albemarle are legally obliged to engage in policies to redistribute part of their economic surplus among the Indigenous communities of the Atacama (García Bernal, 2021). Hence, to secure the continuation of their presence and enable their possible expansion in the region, both companies engage with local communities in a strategic manner. Their modes of engagement however, are qualitatively different.

As for SQM – the larger and more pollutive company among the two – its mode of interaction with the Atacama’s inhabitants can be characterized as adhering to a top-down logic relative to Albemarle’s. Its local investments are largely of temporary nature, channelled through specific developmental projects, incidental events and foundations. As attested by many interviewees, rather than striving towards actual sustainable social development, SQM’s engagement strategy is locally perceived to pursue an inhibition of local resistance to the company by means of forthright economic appeasement and dependency creation with specific groups and individuals. Contrary to SQM’s rationale, whose top-down policies imply a form of “paternalistic assistance”, Albemarle proclaims to be concerned with aiding more sustainable and equitable local development (Gündermann & Göbel, 2018, p.483).³² Its CSR-inspired benefit-sharing agreement is focussed on establishing ‘shared values’ and ‘mutual benefits’ (Albemarle, n.d.a; Albemarle, n.d.c; Gündermann & Göbel, 2018).³³ When asked about the current state of relationship between the Indigenous communities/CPA and the respective mining companies, an important coordinator within the CPA stated the following:

“Currently with Albemarle, it is relatively good because agreements have been signed that go to the benefit of the communities. And that agreement makes that at a certain moment resources are given.” “Currently, we have little communication with the SQM [...] because we don’t have the same agreement as with Albemarle (Interview respondent 5, San Pedro, May 17th 2023).

It is important to note that – despite providing certain social and economic benefits for the Atacameño population outside of the communities through projects and public investments – the companies’ resource allocation schemes are designed primarily to benefit the state-recognized Indigenous

³² Quote personally translated from Spanish to English.

³³ Online source: <https://www.albemarlelitio.cl/Sostenibilidad/social/comunidade>. Accessed 26-10-2023.
Online source: <https://tinyurl.com/2zyhpkpk>. Accessed 02-11-2023.

communities. Moreover, despite the companies maintaining different approaches towards local development and resource redistribution, the motivations behind their policies are ultimately the same in that they aim to avert local resistance to environmental deterioration rather than the deterioration itself (Lorca et al., 2023). As Lorca explains about the rationale behind Albemarle's benefit-sharing agreement:

"This new form of relationship is inscribed within the business conception of shared values that includes the participation of Indigenous peoples' organizations in economic benefits as a way to reduce confrontations between both actors from a logic of adversaries. From this perspective, communities and companies would become "partners" in local social and economic development" (Lorca et al., 2023, p.16).³⁴

In the end, although not singular and often strongly ambivalent in character, local opinions on the lithium companies' presence are predominantly critical. No San Pedrino I have spoken to – community members and non-members alike – is particularly fond of the lithium companies' extractive conduct in the Atacama. Nonetheless, the lithium industry does provide clear economic benefits, especially for the state-recognized Indigenous communities. Not least due to the growing interdependency between lithium companies and the Indigenous communities, critical accounts vary in tone and are often characterized by ambivalences: from outright rejection of the lithium industry to the idea that – as the industry is yet installed and its presence is irreversible – a fair redistribution of profits should be achieved (Lorca et al., 2023; Gündermann & Göbel, 2018; Liu & Agusdinata, 2019). As Lorca et al. explain:

How Indigenous peoples relate with lithium mining, then, is marked by a deep ambivalence, or "functional dualism" (de Janvry, 1981), about the role of mining in local development. On one hand, Indigenous identity is instrumentally used to resist mining, as well as to capture economic benefits from mining companies. While these are presented by some as fair compensation or participatory measures to prevent and mitigate adverse impacts, others understand them as corporate strategies to co-opt Indigenous organizations and divide communities. On the other hand, people recur to nostalgic discourses about the past, voicing a traditional awareness for the environment and corresponding anti-mining sentiments. Some interviewees express apparently competing sentiments within a single interview (2022, p.9).

³⁴ Quote personally translated from Spanish to English.

All in all, local dissatisfaction with the companies over (alleged) environmentally destructive activities attests to the following: although lithium is appropriated by the global capitalist economy as an internationally strategic resource, the price for its extraction is paid locally (Harvey, 2003).

Chapter Conclusion:

Threatened by the DGA's process of national water privatization, the people of San Pedro utilized the legal possibilities presented by the 1993 Indigenous Law to reclaim their Indigenous identity in the face of the state. By doing so, they were able to claim the San Pedro River as collective ancestral property and hence preserve their water commons in the face of mining companies' increasing appropriation of local water resources. Through the same law however, the state presented the Indigenous people of the Atacama with the socio-economic incentives to divide themselves into different Indigenous communities and hence different identity groups. This state-induced remaking of social identity boundaries in San Pedro has set in motion a process of increasing social division and territorial separation. On top of the implied fragmentation of ARASPA's territory among different organizational units, this situation of internal division causes ARASPA – not receiving any stable income from the state or the mining industry – to be economically dependent upon each of the Indigenous communities within its territory and their individual financial contributions. In short, against the backdrop of Chile's 1981 neoliberal water model and the 1993 Indigenous Law's state-induced social construction of Indigenous communities, this chapter has described and contextualized the unique situation of San Pedro's system of communitarian water governance and of ARASPA as the association managing it. Lastly, the chapter outlines the current state of the lithium industry in the Atacama, describing the alleged and increasingly evidenced environmental damage caused by its extractive operations as well as the growing interdependency between company and Indigenous community as a result of local social investments.

On a theoretical level, the chapter described the recent, pre-2016 developments that have occurred to San Pedro's waterscape, explicating how the protection of water against water privatization and the concurrent encroachment of mining companies (mining conduct) as well as the state-induced emergence of different Indigenous communities (social identity formation) shaped ARASPA and its current situation (communitarian water governance). Building on this context, the next chapter describes how today, the introduction of another, entirely new form of mining conduct – namely Albemarle's 2016

benefit-sharing agreement – deepens and further problematizes the social identity boundaries that were instigated by the 1993 Indigenous Law and how this, in turn, leads to the disruption of San Pedro's system of communitarian water governance.

5. LITHIUM MONEY AND THE DISINTEGRATION OF THE WATER COMMONS

So far, the context of San Pedro's system of communitarian water governance has been outlined. This chapter then, describes how the system is currently affected by the 2016 benefit-sharing agreement. Drawing primarily on empirical data collected during my stay in San Pedro, it is explained how the controversial model of resource distribution by which the agreement operates entrenches the socio-political and spatial identity boundaries that were introduced by the 1993 Indigenous Law. In consequence, new forms of internal conflict have emerged that further enhance the ongoing process of San Pedro's socio-territorial disintegration. Moreover, as a continuation of the socio-territorially disintegrative processes instigated by the 1993 Indigenous Law, the 2016 benefit-sharing agreement presents the recently formed Indigenous communities with the economic incentives to further enclose themselves socially and to pursue autonomous visions of territorial development. As a result, some Indigenous communities start assuming sovereignty over the waters that flow through their own territory, thereby gradually appropriating ARASPA's responsibilities of managing and maintaining the irrigation system. Hence, as the river is mentally cut into separate pieces, with certain communities claiming 'their' part of the river as private property, the authority of ARASPA is left impeded and the system of communitarian water governance disrupted. By way of conclusion, it is argued that, whereas historically the collective dependency on and commitment to the water commons provided the San Pedrinos with a collective water-related social identity, the current process of socio-territorial disintegration – triggered by the 1993 Indigenous Law and later catalysed by the 2016 benefit-sharing agreement – resulted in the loss of this (water)common identity and hence the further de-collectivization of the water common. All in all, this chapter brings home the main argument of this research: that the 2016 benefit-sharing agreement contributes to the disruption of San Pedro's system of communitarian water governance.

5.1 The 2016 benefit-sharing agreement:

The 2016 Cooperation, Sustainability and Mutual Benefit Agreement is a product of negotiations between Albemarle and Indigenous communities. As Lorca et al. explain: "for the last two decades, Atacameño communities have negotiated with mining companies for consultation processes, binding

economic compensations and support of community development plans” (Lorca et al., 2022, p.7). In 2012, Albemarle – back then still Rockwood Lithium – came to a profit-sharing agreement with Peine, the Atacameño community located closest to the Salar and hence to the mining plants. The agreement was revenue-based, implying that the community of Peine received a certain percentage of Albemarle’s yearly profit. In 2016, years of negotiation between Albemarle and the CPA resulted in this scheme being extended to include a total of 18 communities and the CPA itself (Albemarle, n.d.a; Lorca et al., 2022).³⁵ Through the agreement, it is established that Albemarle shares 3.5 per cent of its yearly profits with the 18 communities and the CPA, each of the 19 recipient parties receiving an equal part. As Albemarle’s revenues keep growing, the amount of lithium money received by each community is predicted to increase steadily over the coming years. All in all, Albemarle’s CSR policy is globally unmatched in its monetary ‘generosity’. Other than a means of compensating for environmental damage – which is rendered non-existent by the company – Albemarle claims that the motivation behind the benefit-sharing agreement is to have the Indigenous communities of the Atacama share in the profits made on their territories while also promoting the protection of tradition: “as a company we have the responsibility not only to preserve its traditions, but also to generate value and conserve the habitat of the Atacama salt flat and the territorial space that the Communities share” (Albemarle, n.d.a).³⁶ Yet, when asked about the perceived impact of the benefit-sharing agreement on San Pedro’s social fabric, virtually all interviewees – this includes those who are members to communities and those who are not – attested that the agreement has plunged San Pedro into a state of unprecedented and ever-growing social conflict and division.

The 1993 Indigenous Law: incentivizing disintegration:

When talking about what San Pedro was like in the past, many San Pedrinos – especially the elderly – convey narratives of social unity, integrity and tranquillity. In these nostalgic discourses of pre-lithium times, San Pedro is often portrayed as a society characterized by neighbourly cooperation, shared moral values and mutual trust. Of course, bearing in mind the socially turbulent history of San Pedro – the tremendously socially destructive and polarizing Pinochet regime having ended only thirty years ago –

³⁵ Online source: <https://www.albemarlelitio.cl/Sostenibilidad/social/comunidades>. Accessed 26-10-2023.

³⁶ Online source: <https://www.albemarlelitio.cl/Sostenibilidad/social/comunidades>. Accessed 26-10-2023.

most of these nostalgic discourses must be understood in their tendency to strongly romanticize past realities (Hobsbawm & Ranger, 1983). Yet – and without romanticizing pre-lithium San Pedro as a place of perfect social harmony – it should be recognized that in the past three decades, the people of San Pedro have witnessed entirely new forms of social conflict and internal division. To trace back the origins of current social fragmentation and to understand the exacerbating role of the 2016 benefit-sharing agreement on internal conflict and disunion, we need to have another look at the 1993 Indigenous Law.

As explained in the previous chapter, with the 1993 Indigenous Law, the state shaped the rules on who can claim Indigenous identity, reserving legal personality only for those Atacameños that are member to one of the state-recognized Indigenous communities. Hence, as an endeavour to formalize Chile's Indigenous peoples into organizational units consistent with the state's neoliberal political-economic rationale, the Indigenous Law introduced both social and economic incentives for the people of San Pedro to organize and divide this municipal territory that has – despite comprising different *Ayllus* – always been a politico-organizational whole, into separate Indigenous communities. Moreover, as the state appointed each of the newly formed Indigenous communities with certain administrative rights over claimed ancestral territories, the social fragmentation of San Pedro's population simultaneously prompted the disintegration of its territory. Hence, the 1993 Indigenous Law introduced the socio-economic incentives for the newly formed Indigenous communities to divide San Pedro in both demographical and spatial terms. Legally San Pedro is still one single town and the municipality of San Pedro is on paper still the overarching local authority. Yet, after 1993, the communities' increasing level of politico-organizational autonomy – as well as their enlarged economic capacities – implied the increasing fragmentation of San Pedro's centralized organization.

All in all, the 1993 Indigenous Law – by instigating a process of socio-political and spatial boundary drawing that transformed San Pedro from a collective into different communities and from a unified organizational space into different territories – heralded the beginning of San Pedro's current lithium chapter. Later then, after 2016, these processes of social identity boundary drawing were to be seriously intensified.

The discriminatory model of resource distribution:

Indeed, if San Pedro's lithium chapter – characterised by socio-territorial disintegration and internal conflict – started in 1993, it only came to full maturity after the ratification of Albemarle's benefit-sharing agreement in 2016. As explained, the agreement has led to unprecedented levels of socio-political tension across all of San Pedro. The source of these polarizing developments then, can be identified in the agreement's specific model of resource redistribution. Included in the agreement are only those 18 communities that were appointed legal-sociological recognition by the Chilean state through the 1993 Indigenous Law and the CPA as the central representative association of these 18 communities. Hence, drawing on the problematic categorization of identity groups that was stipulated by the Indigenous Law, the agreement works by an identity-criteria-focused, indeed discriminatory model of distribution that excludes from the onset not only San Pedro's non-Indigenous population but also the very significant part of the population that identifies as Indigenous but is not legally recognized as such by the Chilean state. As a result, the agreement feeds into, engraves and further problematizes the social identity boundaries that were introduced by the Indigenous Law. One interviewee – an important municipality official, active member of an Indigenous community and former ARASPA coordinator – used the term 'the Indigenous world' to refer combinedly to those Indigenous people who are part of communities and those who are not. Talking about the social impact of the benefit-sharing agreement and its model of resource redistribution, he explained the following:

"I think what is questionable is the model, the model of resource distribution. [...] The model does not consider the Indigenous world but only the Indigenous communities: the Indigenous communities are not the whole Indigenous world. If all Indigenous people would benefit, no one would fight. There would be no disputes between one territory and another because everyone would benefit. [...] The model generates division (1) within the community, (2) between communities, (3) between communities and those that are not in communities, and (4) between the Indigenous world and the non-Indigenous world"
(interview respondent 8, San Pedro, April 23rd 2023).

This quote neatly sums up the four different societal fault lines that have emerged as a result of – or rather, were radically emphasized and problematized by – the 2016 benefit-sharing agreement. These fault lines – or 'lines of internal conflict' as I term them – constitute the social polarization that is so characteristic of San Pedro's current lithium chapter.

*Internal conflict in San Pedro:*³⁷

The first line of conflict – division within the communities, or intra-community conflict – concerns growing tensions and disunion between members of the same Indigenous community.³⁸ This conflict comprises several factors, the most predominant of which are: disagreement over how the received lithium money is spent and distributed, accusations of corruption against certain people within community leaderships and importantly, disagreement over whether or not the community should accept economic funding from a mining company in the first place. This last category touches upon the larger debate on how communities should relate to the lithium companies and how they should respond to their presence and activity in the Atacama. There are those who outright oppose any form of monetary support from the mining industry, many of whom feel that by signing an agreement with Albemarle, the community aligned its own values too much with the contradictory goals of the mining industry. The conviction that the agreement implies a status of ‘partnership’ through which the community approves of and validates the mining industry’s destructive environmental conduct as well as the expansion of its activities leads some to claim that “the community has sold itself” or that “we exchanged the humanity of the community for the material” (fieldnotes; interview respondent 6, San Pedro, April 18th 2023). At the same time, realism prompts other community members – aware of their marginalized and vulnerable position in the face of both the state and the mining companies – to recognize that the refusal of compensatory resources is not going to remove the mining industry from the Atacama, nor is it going to reverse the environmental damage already done. As one interviewee explained: “most people approved that, yes, we had to receive support because the damage is already done. And even if we didn’t accept it, they were going to hurt us anyway, with or without permission” (Interview respondent 2, San Pedro, April 10th 2023).³⁹ In the end, the current lithium-money-induced intra-community conflicts are in effect debates over the very

³⁷ The conflict implied here does not concern armed or violent conflict.

³⁸ A wide range of opinions exists on the matter and to divide the debate into a camp ‘for’ and ‘against’ the agreement would be a dramatic and harmful oversimplification which negates the restricted bargaining position that the Atacameños have historically always found themselves in due to their economic and social marginalization in the face of both the state and the mining industry. It must be well understood that no single community member, whether ‘for’ or ‘against’, approves of the environmental destruction caused by lithium mining.

³⁹ As explained in the previous chapter, the acceptance of economic benefits from the mining industry by community members does not translate into the acceptance or endorsement of their extractive conduct. Rather, it reflects the opinion that the extraction should be fairly compensated for.

identity of the Indigenous community. I have ascertained ample accounts of friends parting and even families falling apart because of these high-stakes debates.

The second form of division, inter-community conflict, primarily concerns territorial disputes between communities. As explained, the 1993 Indigenous Law implied the possibility for newly established Indigenous communities to claim higher levels of authority and autonomy over certain ancestral territories. Concurrent inter-community tensions over overlapping territorial claims have been exacerbated by the influx of lithium money and inter-community disagreements over its distribution (Lorca et al., 2023). Even though diplomatic and non-violent in character, inter-community territorial disputes lead communities to further assert their social and territorial separateness. As a result, emergent social identity boundaries are deepened and disunity enhanced. In the following paragraph, it will be discussed how – in part due to these inter-community territorial conflicts – Indigenous communities start to conceptualize development and progress in terms of individual community development instead of the collective development of San Pedro as an organizational-political unity.

The third line refers to growing tensions between the Indigenous communities and the non-recognized Indigenous: those who identify as Indigenous but are not allowed into or do not want to be part of a community and hence do not partake in the benefit sharing. An already existing source of tension, this conflict has been exacerbated by the benefit-sharing agreement and the consequential increase in socio-economic benefits for the recognized Indigenous. On paper, an individual's membership to an Indigenous community – and hence the state-legal recognition of one's Indigenous identity – is granted by descent and bloodline. As explained by an Indigenous authority when asked about the requirements for entry into an Indigenous community:

"One is recognized [as Indigenous] because of one's descent: it goes from father to son, from grandparents, great-grandparents, great-great-grandparents, from generation to generation. That gives recognition, it is in the blood" (interview respondent 11, San Pedro, May 7th 2023).

However, the validity of this primordialist narrative is contested by many San Pedrinos, community members and non-community members alike. Contesters claim that Atacameño descent does not always guarantee inclusion as there are many people who fulfil all requirements of Indigeneity but are

nonetheless denied entrance into a community. As explained by an interviewee who self-identifies as Indigenous but is not legally recognized as such:

“There are people who are Atacameño, who have all their things in order but do not become represented by a community. So what happens here is that of all Atacameños, there is a part of it which is taken into account and the other part is not respected.”

(interview respondent 15, San Pedro, May 16th 2023).

Indeed, I have heard ample accounts of individuals who claim to fulfil all requirements of Indigeneity but are nonetheless denied entry into one of the Indigenous communities. The proclaimed motive behind the communities' conduct of exclusion is directly induced by the benefit-sharing agreement's model of resource redistribution. Each of the communities included in the deal receives a fixed and equal percentage of money from Albemarle, independent of the amount of community members. As such, each new individual entering the community increases the amount of partitioners and thus lowers the share per person. As a result, the model of redistribution by which the 2016 benefit-sharing agreement functions creates the rational economic incentive for Indigenous communities not to accept new members, leading them to close off and encapsulate socially. The rebuttal from the side of the community members who endorse these exclusionary policies is that most of the post-2016 applicants became interested in being Indigenous only after economic benefits were introduced. As explained by the aforementioned Indigenous figure of authority:

Yes, there are communities in which people are not permitted to enter. Because recently, in the year 2016, these 18 communities [...] signed an agreement with Albemarle. [...] There are some who never wanted to be part, never wanted to help, never wanted to come here before. I come from here. Nowadays, as there are economic resources, they want to enter. And we say, it has cost us a lot of effort, a lot of work. We stayed here, we lived here, we faced things here. [...] This is where the difference comes from, and that has led us to conflict” (Interview respondent 11, San Pedro, May 7th 2023).

It is important to note that I explicitly refrain from taking sides in this debate and only reflect here the discourses that have been conveyed to me by interviewees from and in the Atacama. Yet, it is clear to see that the incentive for the alleged “foreign” and “fake Atacameños” to seek entry into a community as well as the rational economic incentive for the communities to not let anyone in, are both direct products of the sudden availability of lithium money and the way in which Albemarle distributes it

(Interview respondent 11, San Pedro, May 7th 2023; Interview respondent 16, San Pedro, May 17th 2023). In other words, the social tension between the Indigenous communities and San Pedro's non-recognized Indigenous population is directly induced by the inherently problematic way in which the benefit-sharing agreement selectively distributes economic resources among different identity groups in San Pedro.

Lastly, the fourth line of conflict – between the Indigenous world and the non-Indigenous world – concerns frustration on the side of those inhabitants of San Pedro who do not identify as Indigenous but are nonetheless affected by the actions and decisions of the Indigenous communities and the CPA. Just like in the conflict between the communities and the (non-recognized) Indigenous population outside the communities, what occurs here is a problem of representation: given their state-recognized status, the Indigenous communities largely came to be perceived – in national media as well as in academia – as the representative ambassadors of all people living in the Atacama. As explained by a self-identified but not legally recognized Indigenous irrigator:

“What the State of Chile does when they say, “let's do an Indigenous consultation”, is ask the leaders (of the communities) and then say: “well, the Atacameño people spoke”. But the Atacameño people did not speak, only the leaders spoke. So there is a problem of representativeness that is very difficult to overcome, because ultimately, we are not represented by these organizations” (interview respondent 4, San Pedro, April 12th 2023).

At the same time, there is much criticism from the side of communities on the non-Indigenous “imported” part of the population as some are accused of not complying with local customary norms, values and rules, thereby deteriorating Atacameño culture and social fabric.

In sum, by including only those Indigenous communities that were legally recognized by the state in 1993, the 2016 benefit-sharing agreement draws upon the same exclusionary logic of identity differentiation that was introduced by the Indigenous Law. Herein then, lies the processual relationship between the 1993 Indigenous Law and the 2016 benefit-sharing agreement: whereas the Indigenous Law implied the state-imposed reconfiguration of identity boundaries, the agreement reproduced and further aggravated these problematic boundaries by providing economic benefits only to those Atacameños whose Indigeneity is recognized by the state. When asked about the benefit-sharing agreement and the current situation of widespread internal conflict in San Pedro, the aforementioned Indigenous municipality official explained to me the following:

“I think there are two origins here. One has to do with the creation of communities, because we could have taken advantage of the creation of the communities in a very good way, but in the end, since the resources came per community, the creation of more communities was incentivized. [...] That's how it started. Then, with time, funding from the mining companies arrived, making internal social processes much more complex. Because upon arrival of the mining resources, the communities closed and didn't want to receive new members and there are many people who are outside, who are not part of a community. It also caused each community, now having resources, to plan actions for their own territory without talking to the community next door. So each attained a different perspective of development, instead of a single perspective of territory. So that – the combination of the Indigenous Law, the creation of communities and the availability of the resources later on through mining financing – has caused division to be only more emphasized” (Interview respondent 8, San Pedro, April 23rd 2023).

This quote neatly sums up how the benefit-sharing agreement – as a continuation and catalysation of the processes instigated by the 1993 Indigenous Law – has led to the proliferation of social tension among different, newly constructed identity groups within San Pedro. The implications of this lithium-money-induced situation of internal conflict and division on the functioning of San Pedro's system of communitarian water governance then, is the subject of the following paragraph.

5.2 De-collectivizing the system of communitarian water governance:

Tasked with the governance of San Pedro's common hydraulic property, ARASPA functions by an organizational logic of socio-territorial integration instead of separation. ARASPA's infrastructural system of irrigation canals – and thus its operational territory – stretches across the territories of different Indigenous communities. Hence, despite the spatial division that was caused by the 1993 Indigenous Law and is currently aggravated by the 2016 benefit-sharing agreement, ARASPA – being an overarching communal organization – continues to function by the logic of a singular, undivided territory. In the exact same way, rather than differentiating between people from different communities or social identity groups, ARASPA – open to anyone who irrigates – works by the organizational logic of social integration and non-discrimination. As ARASPA states on its own website: “ARASPA unites all the irrigating inhabitants of the Valley-Oasis of San Pedro de Atacama. We are united by the channels that

give life to our agricultural activities and the ecosystems present in the oasis. ARASPA unites us all, makes us a community” (Asociación de Regantes y Agricultores del Río San Pedro, n.d.).⁴⁰

Cutting the river into pieces:

The social polarization and fragmentation of San Pedro described in the previous paragraph logically goes hand in hand with the increasing disintegration of the municipality in spatial terms. As mentioned in a preceding quote: the 2016 benefit-sharing agreement “also caused each community, now having resources, to plan actions for their own territory without talking to the community next door. So each attained a different perspective of development, instead of a single perspective of territory” (Interview respondent 8, San Pedro, April 23rd 2023). Indeed, soon after the 1993 Indigenous Law implied the state-led construction of new socio-political and territorial identity boundaries, some communities began acting on them. That is to say, some community leaderships used their increased economic capacities, their sudden sociological recognition and increased levels of territorial autonomy to conceive plans for the individual development of ‘their own’ population and ‘their own’ territory. In the interview with the aforementioned influential Indigenous municipality official and former ARASPA leader, I asked about the Indigenous Law, the benefit-sharing agreement and whether it bore any relation to the spatial disintegration of San Pedro that I had begun observing. The following was explained:

“In the beginning, there were no Indigenous communities, there was only the neighbourhood board and the neighbourhood board represented the whole town of San Pedro de Atacama, with all its ayllus. So the level of organization and the vision was of a (singular) territory. [...] When that (the formation of individual communities under the Indigenous Law) happened, and when the possibility of receiving resources from the mining industry arrived, little by little the communities encapsulated and stopped having this perception of territory. That’s why I talk about the disintegration of governance, because this unified view of territory was lost and each community began to look out for its own space” (Interview respondent 8, San Pedro, April 23rd 2023).

⁴⁰ Online source: <http://araspa.cl/>. Accessed on 12-09-2023. Quote personally translated from Spanish to English.

Hence, as Indigenous communities started creating autonomous visions of community development, the perspective of San Pedro as a unified territory, or a singular spatial unity, was gradually replaced by a conception of territorial separateness. This development to, must be seen in the light of the continuum between the 1993 Indigenous Law and the 2016 benefit-sharing agreement. First, the 1993 law – causing the emergence of different Indigenous communities as independent and self-contained territorial units – prompted the communities to conceptualize independent visions of territorial development. Hereafter the 2016 agreement provided the communities with the economic means to act upon and realize these visions, thereby enhancing the demise of San Pedro as a spatial-organizational unity. In the end, as formulated by the municipality official: “the logic of a single territory is lost” (Interview respondent 8, San Pedro, April 23rd 2023). When asked whether this ongoing process of increasing community individualization and territorial disintegration had any observable impact on the work of ARASPA and hence the functioning of San Pedro’s system of communitarian water governance, he stated the following:

“Of course, it harms in the sense that ARASPA – an organization that has to protect the management of all the waters – does not have recourse. [...] Each community claims that it is an independent unit with its own territory, making it very difficult within ARASPA’s logic to think of the entire system because they have to ask for authorization one by one” (Interview respondent 8, San Pedro, April 23rd 2023).

What is important about this quote is that it reflects how the current – lithium-money-induced – mental and legal fragmentation of San Pedro’s territory is at odds with, and hence subverts ARASPA’s organizational logic. What happens is that, as the Indigenous communities assume increasing organizational autonomy over their territories, they simultaneously assume increasing control over the resources located within it and hence over the water of the San Pedro River. When asked to exemplify the problematic impacts of these territorially and organizationally disunifying developments for ARASPA and the water commons, the same interviewee responded as follows:

“Today each community postulates separately – for its own canals – for financial resources to the CNR (the National Water Commission) and the DOH (the Hydraulic Works Division). They postulate it separately, without the knowledge of the irrigation association. Given that the irrigation association is the one that manages the waters, this leads to distancing between the community and the association. So when the association has the obligation

to oversee the entire water distribution network, it is made very difficult for it because each one (each community) looks out for its own solutions” (Interview respondent 8, San Pedro, April 23rd 2023).

In short, certain Indigenous communities are taking matters into their own hands by applying independently for economic funds from state institutions and by using their own economic resources to modify the irrigation infrastructure within their territories without the knowledge and authorisation of ARASPA. Assuming control and ownership over what they have come to see as ‘their’ part of the San Pedro River and ‘their’ part of the irrigation infrastructure, these communities bypass ARASPA as the centralized, overarching water organization, thereby impeding its socio-organizational ability to govern. As explained by an irrigator and ARASPA coordinator:

“ARASPA is not a community, it encompasses the entire Basin because it is the organization that manages water. What happened to this great water organization? They fragmented it by legally establishing individual communities. Everyone (the communities) said: “we already have resources, we can make our pond for our community.” As such, the greater water organization that compasses the whole basin was forgotten” (interview respondent 14, San Pedro, May 16th 2023).

The emergent situation of parallel water governance – characterized by communities gradually appropriating ARASPA's rights, duties and institutional power – not only impedes ARASPA's practical ability to govern, it also disrupts the very communitarian principles on which San Pedro's system of water governance is built. The negative influences posed by the current organizational fragmentation of water governance are best exemplified by the case of one particular community that – having applied for and received funds from the state for its own hydraulic project – constructed a large concrete pond within its territory. Connected to the irrigation system, the aquifer was supposed to store water from the river within the community's territory and reserve its use exclusively for the irrigators of said community. ARASPA was not asked permission, nor did the community in question inform ARASPA about its illegitimate construction plans. The authority to decide over the construction of an infrastructural element that influences the flow and distribution of water belongs solely to ARASPA, which in turn allocates this right to all irrigators equally by means of votes and assemblies. Moreover, by favouring a certain group of irrigators over others and impeding the fair distribution of irrigation water, the construction of the pond

stands in stark contrast with the principles of equal rights and obligations that form the core of ARASPA's common property regime.⁴¹

In the interview with the aforementioned leader of an Indigenous community (not the above-described community), I inquired about the water commons' organizational fragmentation due to the communities' gradual appropriation of institutional authority. The following situation was outlined:

“The canal is destroyed, it can't be watered. So what did the communities do? We have problems with the canals: we put resources to it, we invest in canalization, gates, intake... And this we continue to do: today, we allocate (X) million pesos to start a project of improving the canals in (name of community intentionally left out) (interview respondent 11, San Pedro May, 7th 2023).

Later in the interview, I asked the following question: *“So I understand correctly that the management of the water is not so collective at the moment but rather a little individualized between the communities?”*. The answer:

“Yes... yes actually, ARASPA continues to function as a water distributor. What does the community do? They have the infrastructure, the canals, so that the water can flow. So, there is no major inconvenience in that. I mean, ARASPA still has its control, the communities do not have control (interview respondent 11, San Pedro, May 7th 2023).

The answer to my follow-up question “so ARASPA has the control, but less power?” was affirmative.

As explained in the previous chapter, ARASPA's common property regime establishes the shared “rights and duties” of San Pedro's irrigators towards the water commons, the rights predominantly concerning a voice in collective-action and decision-making processes and the fair distribution of irrigation water, the duties referring to participation in collective action and compliance with institutional authority. What we currently see is that – as a result of the lithium-money-induced socio-territorial disintegration and organizational disunification in San Pedro – the Indigenous communities reconceptualize their “rights

⁴¹ It is important to add that the pond in question has, in the end, never commenced operation, not in the least due to the fact that its construction was never coordinated with the irrigators within the community's territory. The pond – once finished – turned out not to improve irrigation and agricultural practices is therefore not used. As such, this case exemplifies the dangers to water management that are posed by the decentralization of water governance.

and duties” toward ARASPA and the water commons in general by illegitimately claiming ownership over what they have come to see as ‘their’ part of the river.

The above-described interviewee’s presumption that the fragmentation of water governance is of “no major inconvenience” to ARASPA and to the management of irrigation water in general, stands in stark contrast to the accounts of ARASPA’s coordinators and many San Pedrino irrigators who have – throughout the past decades – continuously fought to *prevent* the very fragmentation of their common property and to *preserve* its communitarian governance structures. Referring back to Ostrom, the act of mentally and organizationally cutting the river and its channel system into separate parts that are governed by different organizational entities comes down to the fragmentation and de-centralization of common-pool resource management, causing the water of the San Pedro river to be prone to inter-community competition and possibly to over-exploitation. Hence, the de-collectivization of San Pedro’s collective water property – indeed implying the un-commoning of the water commons – jeopardizes the efficient management of irrigation water as well as its equitable, non-discriminatory distribution among all of San Pedro’s irrigators. As explained by a former ARASPA coördinator: “It’s a matter of seeing the river as it really is, but they (the Indigenous communities) have cut it into pieces” (Interview respondent 13, San Pedro, May 3rd 2023).

ARASPA’s economic exclusion:

As mentioned in the previous chapter, ARASPA is no direct participant to the benefit-sharing agreement. Rather, an agreement was made through which all ten Indigenous communities that are located within ARASPA’s operational territory pledged to reserve a certain percentage of the money that they receive from Albemarle as a contribution to the association. On paper, this financial arrangement provides ARASPA with sufficient economic resources to sustain the governance, management and maintenance of the collective irrigation system without ARASPA becoming directly economically dependent upon the mining industry. In practice however, given that multiple communities contribute the minimum of one per cent and no community contributes more than 4 per cent, the contributions to ARASPA fall short in comparison to the association’s growing expenses. When asked why the communities contribute so little economic resources to ARASPA and the proper functioning of the system of communitarian water governance, the municipality official answered as follows:

“That’s why I talk about the disintegration of governance, because this unified view of territory is lost and each community begins to look out for its own space [...] So when the opportunity comes, when these resources [from the benefit-sharing agreement] arrived, and ARASPA asks the communities to support them with their resources – given that we are all the same – it has become difficult to visualize it that way because ARASPA is another organization: “it is not mine, and I am only preoccupied with projects for my community” (Interview respondent 8, San Pedro, April 23rd 2023).

Hence, the communities’ reluctance to have ARASPA share in their funds directly relates back to the processes of increasing socio-territorial disintegration, community detachment and organizational disunification described above. That is to say: the formation of autonomous and independent visions of development among different Indigenous communities causes them to no longer consider ARASPA – the socially rooted association that governs the water for the sake of all people and the oasis – as an integral part of San Pedro and hence a part of themselves. Rather, ARASPA is increasingly regarded and treated as an external party. On top of this, the fact that some communities are gradually appropriating ARASPA’s responsibilities – using their own economic resources to tackle water management issues exclusively on their territories – creates a state of organizational confusion and disarray over who is in charge of water governance. This in turn renders some communities even less willing to contribute resources to ARASPA:

“In one case, a community says: “I am already investing in water, in canals, why should I give resources to ARASPA?” [...] And another (community), maybe not investing much, says: “ARASPA alone will have to look for how to solve it.” So something is provoked that is very difficult to understand, because – being ourselves part of ARASPA and part of a community – we think and separate things” (Interview respondent 8, San Pedro, April 23rd 2023).

As such, ARASPA currently finds itself in a cyclical and contradictory situation in which it is repudiated by some communities for not fulfilling its duties while at the same time not receiving sufficient economic funds from the communities to keep up with the increasing expanses of its outdated and rapidly deteriorating irrigation infrastructure.

As the association in charge of governing the irrigation water for all of San Pedro, ARASPA functions by the logic of a singular people and unfractured space. Hence, the current process of increasing socio-

territorial disintegration not only negatively affects ARASPA's ability to carry out its practical water management responsibilities, it also causes the increasingly autonomous and organizationally detached communities to disregard ARASPA's role as overarching association. Instead of the historically and socio-culturally important community-based institution that it is, ARASPA comes to be perceived as "another organization". To cede large sums of money to this external organization does not fit within the communities' socio-territorially autonomous visions of development. All in all, ARASPA falls prey to the changes of a socio-territorially disintegrating and organizationally de-centralizing environment, leaving the association weakened in terms of economic resources as well as socio-organizational power.

The loss of a (water)common identity:

As explained, in the previous chapter, water is at the very heart of Atacameño history, culture and religious spirituality. Similarly, as a tradition that has sustained life in the desert for thousands of years, the system and practice of communitarian irrigation water governance comprises an institution of great socio-cultural significance. Given the collective dependency on, responsibility over and commitment to the effective management of their common hydraulic property, the San Pedrinos' collective interrelationship with the San Pedro River has historically been highly constitutive of the town's socio-cultural fabric. Asked about the social, cultural and spiritual centrality of water in San Pedro, an elderly woman stated the following: "we as a people, we are a people of water, culturally speaking" (interview respondent 6, San Pedro, April 18th 2023). In the end, the collective ownership over and the concurrent devotion to the socio-cultural institution that is communitarian water governance, has historically generated and sustained a common, water-related social identity. Inherently related to, and revolving around collective involvement in irrigation water management, I refer to this shared identity as San Pedro's (water)common identity.

This (water)common identity is a product of San Pedro's system of communitarian water governance and yet, it is no less a prerequisite to the system's proper functioning. To put it more clearly: the collective identity that is derived from the water commons is at once a crucial component to the sustainment of collective commitment to it. It is thus that the current processes of socio-territorial disintegration and the concurrent deterioration of this historical institution simultaneously entail the decomposition of an important part of the San Pedrinos' socio-cultural identity. The present-day deterioration of this collective

identity in turn leads to further corrosion of local solidarity and decreasing levels of social cohesion. The following quote from an Indigenous water activist and community member neatly reflects the way in which the benefit-sharing agreement and its consequential sequence of disintegrative developments has ultimately led to the deterioration of collective identity:

“So, these communities did not have a broader vision of what could happen to the territory, thus we divided ourselves even more. We should have worked for unity as a people. [...] The money should have reached everyone, through projects that benefit us all, whether or not we are in those communities. That vision did not exist. Each community transformed this agreement into individual benefits [...] but they forgot that we are a people, we are not some communities” (interview respondent 6, San Pedro, April 18th 2023).

Given that the sense of collective identity is diminishing and people no longer perceive themselves to belong to the same social group, the current situation of proliferating internal conflict and polarization is logically exacerbated. As such, the loss of this (water)common identity is in the end not only an outcome of the before-mentioned process of San Pedro’s socio-territorial disintegration and organizational disunification, it is at the same time highly conducive of it.

Conclusion to chapter:

Benefitting only those Indigenous communities that were recognized by the Chilean state in 1993, the 2016 benefit-sharing agreement’s model of resource distribution draws on and entrenches the social and spatial identity boundaries that were introduced by the Indigenous Law. The result is a situation of proliferating internal conflict and division between San Pedro’s recently differentiated social identity groups. Prompted by internal division and enabled by the agreement’s economic resources, San Pedro’s state-recognized Indigenous communities then started to assert their recently acquired legal sociological distinctiveness and enhanced territorial autonomy by forming autonomous visions of community development, independent from ‘the rest’ of San Pedro and the other Indigenous communities. All in all, the benefit-sharing agreement has intensified San Pedro’s fragmentation, or rather disintegration, in both social and territorial terms. In turn, enabled by the economic resources received from the benefit-sharing agreement, the increasingly autonomised and organizationally detached Indigenous communities assume authority over what they perceive to be ‘their part’ of the San Pedro River and its

associated irrigation infrastructure. More than a breach of the common property regime and its principles of equal rights and obligations, the act of mentally cutting the river into pieces – that is, the fragmentation of water governance among different organizational entities – entails the general de-collectivization of common-pool resource management, putting at risk the effective management of the San Pedro river and threatening the equitable distribution of its water among irrigators from different social groups and territories. A direct result of the disruption of the system of communitarian water governance then, is the loss of the common, water-based identity that the people of San Pedro have historically derived from their collective involvement in the institution. If, as explained, the system of communitarian water governance essentially consists of two components - a common hydraulic property and the collective commitment towards this property – then it is clear to see that in the current situation both components are threatened: the common property is cut into different pieces and commitment is shattered to the point where the water commons is no longer truly a common property and indeed, the system of communitarian water governance is no longer truly communitarian.

All things considered, the form of cooperative engagement between Albemarle and the Indigenous communities that is implied by the benefit-sharing agreement, constitutes a major shift in the way the two entities relate to each other. In fact, the transformation of company-community interrelations – from “a logic of adversaries” to a logic of ambivalent partnership – implies a transformation of the long-standing conflict between the mining industry and the Atacama’s Indigenous peoples (Lorca et al., 2023, p.16). That is to say, whereas traditionally the Atacama’s Indigenous peoples were pitted against the mining companies in protection of their water resources, the benefit-sharing agreement has changed the locus of conflict: instead of the traditional struggle between community and mining company, today conflict is predominantly located internally, within and among communities. As Lorca et al. frame it:

“The recent agreements, as a business strategy to obtain a social license, have transformed the modes interrelating in the territory, displacing the usual confrontation between communities and companies and resituating them inside the Indigenous organizations” (2023, p.16).⁴²

A direct result of this mining conduct-induced situation of internal conflict, San Pedro’s ongoing socio-territorial disintegration negatively affects ARASPA’s functioning and disrupts the communitarian

⁴² Quote personally translated from Spanish to English.

structures of the town's historical water governance institution. As such, on a conceptual level, this chapter described the impactful transformations that have occurred to San Pedro's waterscape as a result of the 2016 benefit-sharing agreement, depicting how the introduction of the 2016 benefit-sharing agreement (as a new form of mining conduct) aggravates existing social identity boundaries and enhances San Pedro's socio-territorial disintegration (social identity formation), which ultimately causes the Indigenous communities to fragment and hence disrupt the system of communitarian water governance.

6. CONCLUSION

This research aimed to illuminate how a CSR-inspired benefit-sharing agreement between a lithium mining company and certain local Indigenous communities – by instigating disruptive processes of social identity boundary drawing – impacted the functioning of a locally rooted and long-established water governance institution. Applying a political ecology-inspired theoretical framework – centred around the concepts of water governance, mining conduct and social identity formation – and a methodological strategy comprising fieldwork as well as desk-based literature analysis, this research set out to answer the following question:

How does the 2016 benefit-sharing agreement between Albemarle and specific Indigenous communities affect San Pedro de Atacama's system of communitarian water governance?

In answering this question, this chapter will simultaneously provide a recap of this research's content and analysis, integrating theory and empirical evidence to reflect on the most important results of this research. Next, specific contributions are outlined and suggestions for further research made. At last, a final reflection wraps up the research.

Summary of argument:

Chile's neoliberal political-economic transformation in the late 20th century and its forthcoming model of privatized water rights created a hostile environment for customary institutions of communitarian water governance among Atacameño localities. A case of rebellious protection of collective water property, the people of San Pedro managed to avert the privatization and commodification of the San Pedro River. The legal pathway to obtain collective water rights was laid out by the 1993 Indigenous Law, which the San Pedrinos used to first claim Indigenous identity and then claim the water of the San Pedro River as ancestral Indigenous property. It is thus that in 1997, ARASPA was established as the overarching water association in possession of the San Pedro irrigators' collective water rights and in charge of operating San Pedro's system of communitarian water governance. Upholding a common property regime that capitalizes on the equal rights and obligations of all water users ARASPA adheres to an organizational logic of social and territorial integration.

As it turned out, the 1993 Indigenous Law – the very law that made possible the creation of ARASPA and hence the legal protection of the water commons – in turn implied the state-induced creation of Indigenous communities as the most important politico-organizational entities in San Pedro. Introducing the socio-economic incentives for Indigenous people to organize and divide themselves into multiple different communities instead of one, the 1993 Indigenous Law led to the creation of 18 different Indigenous communities in the Atacama, 10 of which are located in ARASPA's operational territory. Given that the state depicted membership to an Indigenous community as the primary requirement for one's legal recognition as an Indigenous person, many San Pedrinos – those who identify as Indigenous but did not become represented by a community – are not legally acknowledged in their Indigeneity. All in all, the 1993 Indigenous Law and the concurrent emergence of different Indigenous communities led to the creation of new, exclusionary socio-political and spatial identity boundaries in San Pedro. At the hand of these identity boundaries, a process was instigated that would lead to the increasing social and territorial disintegration of San Pedro as a society.

In 2016 then, abiding by the logic of Corporate Social Responsibility, lithium mining company Albemarle signed a benefit-sharing agreement with the 18 Indigenous communities and their overarching council. In the agreement it is established that the company shares 3.5 per cent of its yearly profits, each of the 19 participants receiving an equal share. As only those Indigenous communities that were recognized by the state under the 1993 Indigenous Law were included in the agreement, Albemarle's controversial model of economic resource distribution reinforces and further problematizes the processes of social and spatial identity boundary drawing that were introduced by the Indigenous Law. These processes have constituted what I term San Pedro's lithium chapter: a period in time marked by lithium-money-induced inter- and intra-community conflict, the increasing organizational detachment of Indigenous communities from the politico-organizational whole that San Pedro used to be and the town's overall socio-territorial disintegration.

Having survived and shown resilient in the face of menacing water privatization and the encroachment of the mining industry in the past decades, today's socially disruptive processes – as induced by the benefit-sharing agreement and the influx of economic resources to selective identity groups – have far-reaching implications for the functioning and continued existence of San Pedro's institution of communitarian water governance. As the Indigenous communities are becoming increasingly autonomous and detached politico-organizational units, some claim ownership over what they have

come to perceive as ‘their part’ of the river, thereby sidelining ARASPA as the overarching water association and appropriating its authority. In the end – and by way of answering the research question – the division of the river and its system of channels into separate parts, governed by different organizational units translates into the de-collectivization of the water commons and hence the disruption of San Pedro’s system of communitarian water governance. This puts at risk the effective management of the increasingly scarce quantity of irrigation water yielded by the San Pedro River and pressures its fair distribution among all of San Pedro’s irrigators, irrespective of the social group or community one belongs to and of the territory one resides in.

Referring back to the conceptual framework, the waterscape of San Pedro must be considered a hydro-social space that is characterized by a system of communitarian water governance that is in turn influenced and reshaped over time at the hand of mining conduct and processes of social identity formation. Hence, on a more abstract, theoretical level this research illuminates the recent transformation that the waterscape of San Pedro has undergone: it has tracked the linkages between the introduction of the 2016 benefit-sharing agreement between Albemarle and certain Indigenous communities (renewed mining conduct), the consequential instigation of socio-political and spatial identity boundary drawing (social identity formation) to show how these developments ultimately culminate in the disruption of ARASPA’s functioning (communitarian water governance).

In fact, it can be stated that the introduction of the benefit-sharing agreement has contributed to a general reconfiguration of traditional nature-society interrelations in San Pedro, or more precisely: a reconfiguration of water-society relations. In pre-lithium times, the San Pedro society was – in all its diversity – bound together by the collective dependency on, responsibility over and commitment to their water commons. Today, the state of proliferating internal conflict and socio-territorial disintegration that is the result of benefit-sharing agreement and its discriminatory model of distribution, has weakened and called into question this collective, water-based commitment. Indeed, the deterioration of the socio-culturally foundational tradition that is communitarian water governance constitutes a deterioration of the collective, water-based identity that the people of San Pedro have historically derived from collective involvement in this institution. Given that the loss of this (water)common identity in turn exacerbates the current situation of widespread internal conflict and socio-territorial disintegration, the impediment of ARASPA’s functioning implies far more than the decay of a centuries-old water institution: it implies the increasing decomposition of a society, the disbandment of a people.

Contributions and suggestions for further research:

By illuminating the way in which Albemarle's benefit-sharing agreement has led to a general transformation of San Pedro's waterscape and hence to the disruption of its historical system of communitarian water governance, this research shed light on the as-of-yet largely uncharted waters of the post-2016 political ecology of water in the Atacama. More broadly, this research has shown how modern-day corporate developments – in the form of mining companies' adoption of CSR policies – can lead to the further enclosure of historical commons and how benefit-sharing agreements – if not sufficiently sensitive to local socio-political contexts – can contribute to the transformation and deterioration of socio-culturally rooted community-based governance institutions. As such, this study adds to contemporary academic discussions within the field of political ecology on the topics of local (water) governance, modern mining development and contemporary neoliberalism.

During my stay in San Pedro, Chile's current leftist-socialist government made an impactful decision concerning the future of the country's lithium production and hence the future of the Atacama. On the 20th of April 2023, President Gabriel Boric addressed the nation to announce that as of 2043, when state contracts with both SQM and Albemarle have expired, the Chilean state will nationalize the lithium industry. It is expected that SQM and Albemarle's operations will be incorporated in the framework of state-owned mining company CODELCO, the company that has thus far been responsible for Chile's national copper production. Given widespread local frustration with SQM and Albemarle over their socio-environmentally damaging conduct, one might think that the expected incorporation of the companies' operations into the framework of CODELCO – and hence the submission of the private sector to the state – is welcomed by the people of San Pedro with open arms. As reflected by my interviewees however, the opposite is true: in general, people expect more marginalization to be inflicted upon them by the neoliberal Chilean state – fixated on profit maximization and accountable only to itself – than by private mining companies who at least have to keep up a good image for their international shareholders. Moreover, CODELCO – established in 1976 under the Pinochet regime – is in all likelihood the country's most infamous and distrusted company as it has been responsible for the mass-scale depletion of water, the destruction of ecosystems and a legacy of social injustices, especially in Chile's Northern regions. In any case, the upcoming nationalization of the lithium industry will imply drastic changes to

environmental governance and mining conduct in the Atacama and it generates great insecurity among the people of San Pedro as to what their future will look like. Important knowledge could be generated if future research were to investigate the prospects of CODELCO's modes of engagement with the inhabitants of the Atacama, this includes the recognized Indigenous communities as well as those social groups that are not legally recognized as Indigenous. Of special interest are questions surrounding possible plans of the state to adopt part of Albemarle's CSR rationale and whether the 2016 benefit-sharing agreement will be terminated, prolonged or modified. Above all, and in line with the goals of this research, it is important to gain academic insight into the ways in which future mining conduct and processes of social identity formation – given that these are bound to take on new dynamics – might further affect the functioning and continued existence of San Pedro's system of communitarian water governance.

I started this research by stating that “the history and development of San Pedro de Atacama is in large part a history of successful and effective management of irrigation water.” However, if the socio-territorially disintegrative processes that are described in this research do not stop, it appears that the future might not be. What then, does this mean for the future of San Pedro, its people and its natural environment? When asked this question, one interviewee responded as follows:

“This system makes us more and more dependent on itself and we don't realize it. If agriculture dies here in this territory, in this oasis and in the towns, we become totally dependent on the neoliberal system and that is extremely dangerous. Why do I say that? Calama is home to all Indigenous people who have been uprooted by lack of water. But that city is an appendage to the mining industry: it depends on mining. It only has mining services, there was never an intention for it to have its own development. If mining dies, Calama dies. And it was a precious oasis, more precious than this one, [...] And exactly the same thing is going to happen to us: an economy dependent on a totally neoliberal system, where they tell us what we have to do” (interview respondent 6, San Pedro, April 18th 2023).

Indeed, a common anxiety among many Atacameños concerns the fact that, as lithium is finite, the economic resources from the mining industry are finite as well. At some point in the future the influx of lithium money will stop. Once the Salar's lithium reserves are exhausted, the lithium companies will – just like the Saltpetre industry did in the mid-20th century – leave the Atacama. The question is *how* the

Atacama will be left behind, or rather, *what* will be left of it. Many foresee a San Pedro without money, without collective identity and importantly, without water. This research painted the picture of San Pedro's political ecology during the current lithium chapter. Future studies could yield crucial insights by looking beyond the current lithium chapter and into the post-lithium chapter. By analysing the different ways in which the state, private mining companies, Indigenous communities and other local inhabitants visualize and anticipate the moment when either lithium mining is stopped or the resource is exhausted, future studies could contribute to negotiations and conceptualizations of pathways for more just and sustainable development of the Atacama region.

Final reflections:

San Pedro – and the Salar de Atacama in general – is an absolutely magnificent place. The outstretched desert valley is as rich in history and culture as it is in astonishing landscapes. To have been able to reside here for an extended period of time and to have had San Pedro shown to me by the people that embody it has been a privilege for which I am utterly thankful. Nonetheless, as I was proceeding in my research, for me the gradual discovery of the place's cultural and ecological beauty went hand in hand with the discovery of its current social and environmental deterioration.

Prompted by electro-mobility hypes in countries overseas, the green energy transition might be global in discourse, its unsustainable impacts remain thoroughly local. Despite possible good intentions, lithium companies' current community engagement policies leave San Pedro socially shattered in cycles of internal conflict. Officially termed the '2016 mutual benefit agreement', it must be understood that many San Pedro's do not perceive to reap any 'benefits' from it, neither did they 'agree' with anything. The agreement has fuelled local grudge and social mistrust, making collective action increasingly hard to reach. It renders virtually impossible the unification of all Atacameños under a common, unilateral movement and thereby obstructs their imposition of powerful statements and demands that would oblige the state and the mining industry to take more seriously the protection of the Atacama's natural environment and the prevention of it drying out.

Conversations with a prominent Albemarle employee – notably a sustainability manager – left me shocked by the company's apparent lack of knowledge and sensitivity towards local contexts and their stubborn misconceptions of the on-the-ground impacts of their paper-based social policies. The denial

of any environmental risk was to be expected, but the unawareness of the ever-increasing state of social conflict caused by the benefit-sharing agreement and the complete obliviousness to the fact that there are Indigenous people who are – for whatever reason – not recognized as Indigenous and hence further neglected and socio-economically marginalized by the agreement, was downright disconcerting.

However distressing and dispiriting the current social situation in San Pedro might be, hopeful and encouraging are the many instances of cohesive initiative and resistance to polarization by different groups and individuals that I have encountered. One of these instances then, is ARASPA. In a town marked by increasing social division and territorial fragmentation, the water association is one of the few organizations whose organizational logic works against the grain of ongoing division: striving towards the socio-territorial (re)integration and (re)unification of San Pedro. Rather than isolated territories, ARASPA thinks in terms of unified space; and rather than separated social groups, ARASPA reasons in terms of a people. In other words, just like the river doesn't bend its flow to comply with socially constructed borders, ARASPA cuts right through the ever-expanding identity boundaries and societal fault lines that have emerged at the hand of the 2016 benefit-sharing agreement. All in all, this makes for a paradoxical situation: the more ARASPA's functioning is affected by current processes of socio-territorial disintegration, the greater the need for ARASPA's proper functioning to counter San Pedro's increasing socio-territorial disintegration.

As has been explained to me over and over again: "water is life" and "water unites". Indeed, it has been this little bit of water – that blood that gives life to the Atacama – that enabled ecosystems to flourish in extreme environments. Similarly, it has been the collective governance of this water that enabled societies to cooperate and survive. In a real sense then, this is the mission that ARASPA carries out to this day: the sustenance of life and the preservation of human coexistence in the world's driest desert.

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APPENDICES

List of fieldwork interviews (in-person, San Pedro de Atacama):

Interview number	Date	Gender	Ethnic status	Role	Platform
1	06-04-2023	Woman	Recognized Indigenous/ community member	Former ARASPA coordinator and warden	In-person
2	10-04-2023	Woman	Recognized Indigenous/ community member	ARASPA coordinator and warden	In-person
3	10-04-2023	Man	Recognized Indigenous/ community member	Has been involved in the construction of San Pedro channel system in 1960's	In-person
4	12-04-2023	Man	Self-identified Indigenous/ not member to community	Owens and runs a local news and opinion magazine	In-person
5	17-04-2023	Man	Recognized Indigenous/ community member	CPA coordinator	In-person
6	18-04-2023	Woman	Recognized Indigenous/ community member	water activist & local flora and medicine specialist	In-person
7	18-04-2023	Man	Self-identified Indigenous/ not member to community	ARASPA coordinator	In-person
8	23-04-2023	Man	Recognized Indigenous/ community member	Municipality official & former ARASPA coordinator & former Indigenous community coordinator	In-person
9	28-04-2023	Man	Recognized Indigenous/ community member	Municipality secretariat official	In-person
10	30-04-2023	Man	Recognized Indigenous/ community member	ARASPA <i>tomero</i> (responsible for daily opening and closing of water gates)	In-person
11	07-05-2023	Woman	Recognized Indigenous/ community member	Indigenous community coordinator & ARASPA coordinator	In-person
12	08-05-2023	Man	Recognized Indigenous/ community member	Farmer	In-person

13	13-05-2023	Woman	Self-identified Indigenous/ not member to community	Water activist & former ARASPA coordinator	In-person
14 & 15	16-05-2023	Woman & Man	Both Self-identified Indigenous / not member to community	Both ARASPA coordinators	In-person
16	17-05-2023	Woman	Recognized Indigenous/ community member	Municipality official & former ARASPA coordinator	In-person
17	19-05-2023	Man	Recognized Indigenous/ community member	ARASPA coordinator	In-person

List of interviews with academics (online):

Name	Date	Gender	Occupation	Platform
Dr. Hugo Romero	13-03-2023	Man	Head of geography department Universidad de Chile, Chile.	In-person
Prof. Tom Perrault	28-04-2023	Man	Professor in the department of geography and environment at university of Syracuse, USA.	Online
Prof. Manuel Prieto	05-05-2023	Man	Professor in the department of historical and geographical sciences at Universidad de Tarapacá, Chile.	Online
Dr. Ingrid Garces	12-05-2023	Woman	Department of chemical engineering Universidad de Antofagasta	Online

Interviews with Albemarle employees (online):

Occasion	Date	Gender	Occupation	
Joint interview with UVA ENLENS project	10-02-2023	Man	Sustainability manager Albemarle	Online
Joint interview with UVA ENLENS project	24-02-2023	Men and Women	Albemarle representatives	Online
Personal interview	11-05-2023	Man	Sustainability manger Albemarle	Online