



Green Cars = Green Conflicts?

**Governance, Grievances and Conflict Dimensions of the
Bolivian State Lithium Program**

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List of Abbreviations

AACN	Autoridad Ambiental Competente a Nivel Nacional, Competent Environmental Authority at the National Level
AIOC	Autonomía Indígena Originario Campesina, Indigenous Original People Peasant Autonomy
AJAM	Autoridad Jurisdiccional Administrativa Minera, Judicial Administrative Mining Authority
ALBA	Auditoria de Línea Base Ambiental, Audit of the Environmental Base Line
AMIAC	Actividades Mineras Menores con Impactos Ambientales Conocidos no Significativos, Minor Mining Activities with Known and Non-Significant Environmental Impacts
BCB	Banco Central de Bolivia, Bolivian Central Bank
CAN	Comunidad Andina, Andean Community
CCII-REB	Comité Científico para la Investigación e Industrialización de los Recursos Evaporíticos de Bolivia, Scientific Committee for the Investigation and Industrialization of the Evaporite Resources of Bolivia
CEDIB	Centro de Documentación e Información de Bolivia, Documentation and Information Center of Bolivia
CEDLA	Centro de Estudios para el Desarrollo Laboral y Agrario, Research Center for Labour and Agrarian Development
CEIMM	Centro de Investigaciones Minero Metalúrgicas, Center for Investigations in Mining and Metallurgy
CIRESU	Complejo Industrial de Recursos Evaporíticos del Salar de Uyuni, Industrial Complex for Evaporite Resources of the Salar de Uyuni
CLACSO	Consejo Latinoamericano de Ciencias Sociales, Latin American Social Sciences Council
CNA	Constitución Nacional de la República de Argentina, National Constitution of the Republic of Argentina
COB	Central Obrera de Bolivia, Bolivian Workers' Central (Union Federation)
COMCIPO	Comité Cívico de Potosí, Civic Committee of Potosí
COMIBOL	Cooperación Minera de Bolivia, Mining Cooperation of Bolivia
CONAMAQ	Confederación de Ayllus and Markas de Qullusuyu, Confederation of the Ayllus and Markas of the Qullusuyu
CPE	Constitución Política del Estado, Political Constitution of the State (of Bolivia)
CPI	Corruption Perception Index (Transparency International)
CSUTCB	Confederación Sindical Única de Trabajadores Campesinos de Bolivia, Unique Federation of Farm Workers of Bolivia
DIA	Declaratoria de Impacto Ambiental, Environmental Impact Declaration

DNRE	Dirección Nacional de Recursos Evaporíticos, Bolivian National Directory for Evaporite Resources (preceding institution to the GNRE)
DS	Decreto Supremo, Supreme Decree
EBRE	Empresa Boliviana de Recursos Evaporíticos, Bolivian Company for Evaporite Resources (planned but not installed)
EITI	Extractive Industries Transparency Initiative
EMP	Empresa Productiva Minera, Productive Mining Company
ESM	Empresa Siderúrgica Mutún, Iron-Ore Company Mutún
EV	Electric Vehicle
FENCOMIN	Federación Nacional de Cooperativistas Mineros, National Federation of Cooperative Miners
FMC	FMC Corporation; FMC originally meant Food Machinery Corporation (later changed into Food Machinery and Chemical Corporation). In 1985, FMC took over the Lithium Corporation of America (LITHCO), which was active in Bolivia.
FOBOMADE	Foro Boliviano sobre Medio Ambiente y Desarrollo, Bolivian Forum on Environment and Development
FRUTCAS	Federación Regional Única de Trabajadores Campesinos del Altiplano Sur de Bolivia, Regional Unique Federation of Peasant Workers of the South Altiplano of Bolivia
FSTMB	Federación Sindical de Trabajadores Mineros de Bolivia, Union Federation of Bolivian Mine Workers
GEOBOL	Servicios Geológico de Bolivia, Bolivian Geological Services
GIGA	German Institute of Global and Area Studies
GNI	Gross National Income
GNRE	Gerencia Nacional de Recursos Evaporíticos, Bolivian National Management Committee for Evaporite Resources
Goni	Gonzalo Sánchez de Lozada; Bolivian president from 1993 to 1997 and from 2002 to 2003; widely referred to as Goni
HIK	Heidelberger Institut für internationale Konfliktforschung, Heidelberg Institute for International Conflict Research
IDH	Impuesto Directo a Hidrocarburos, Direct Hydrocarbon Tax
IGM	Instituto Geográfico Militar, Geographic Military Institute
ILO	International Labor Organization
INE	Instituto Nacional de Estadística de Bolivia, National Statistics Institute of Bolivia
INRA	Instituto Nacional de Reforma Agraria, National Institute of Agrarian Reform
ITC	International Tin Council
JEMSE	Jujuy Energía y Minería Sociedad del Estado, Jujuy Energy and Mining Society of the State (Argentina)

JUNAC	Junta del Acuerdo de Cartagena, Board of the Cartagena Agreement
LCE	Lithium Carbonate Equivalent
Li	Lithium
LIDEMA	Liga de Defensa del Medio Ambiente, Bolivian League for the Defense of the Environment
LITHCO	Lithium Corporation of America (now FMC, see above)
LMyM	Ley de Minería y Metalurgia, Law on Mining and Metallurgy
LMA	Ley de Medio Ambiente, Environmental Law
MAS-IPSP	Movimiento al Socialismo – Instrumento Político por la Soberanía de los Pueblos, Movement towards Socialism – Political Instrument for the Sovereignty of the Peoples (Political Party of Evo Morales, often only referred to as MAS)
MEFP	Ministry of the Economy and Public Finances, Ministerio de Economía y Finanzas Públicas de Bolivia
MHE	Ministerio de Hidrocarburos y Energía, Ministry for Hydrocarbons and Energy (as existent until January of 2017, when the Ministry was divided into a Ministry of Hydrocarbons and a Ministry of Energy)
MMAyA	Ministerio de Medio Ambiente y Agua, Ministry for the Environment and Water
MM-PASA	Medidas de Mitigación y Plan de Aplicación y Seguimiento Ambiental – Mitigation Measures and Plan of Application and Environmental Monitoring
MMyM	Ministerio de Minería y Metalurgia, Ministry of Mining and Metallurgy
MNR	Movimiento Nacionalista Revolucionario, Nationalist Revolutionary Movement (Political Party in Bolivia)
NASA	National Aeronautics and Space Administration (of the USA)
NGO	Non-Governmental Organization
ORSTOM	Office de la Recherche Scientifique et Technique Outre-Mer, French Office of Scientific Research in Overseas Territories (now known as Institut de Recherche pour le Développement (IRD))
PND	Plan Nacional de Desarrollo, National Development Plan
ppm	parts per million (the millionth part or 10^{-6} of a unit of weight)
PPP	Purchasing Power Parity
RAAM	Reglamento Ambiental para Actividades Mineras, Environmental Regulations for Mining Activities
SENARECOM	Servicio Nacional de Registro y Control de la Comercialización de Minerales y Metales, National Registry and Control Service for the Commercialization of Minerals and Metals
SERGEOMIN	Servicio Nacional de Geología y Técnico de Minas, Bolivian National Service for Geology and Mine Technology
SGM	Superintendencia General de Minas – General Mining Superintendency

SOPE	Sociedad Potosína de Ecología, Potosí Society of Ecology
SQM	Sociedad Química y Minera de Chile S.A., Chemical and Mining Society of Chile
TCO	Tierra Comunitaria de Origin, Original Communal Lands
TIOC	Territorio Indígena Originario Campesino, Indigenous Original Peoples' Peasant Territory
TIPNIS	Territorio Indígena y Parque Nacional Isiboro Sécore, Indigenous Territory and National Park Isiboro Sécore
UATF	Universidad Autónoma Tomás Frías de Potosí, Autonomous University Tomás Frías of Potosí
UMSA	Universidad Mayor de San Andrés, Higher University of San Andrés (La Paz)
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNDP	United Nations Development Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
USGS	United States Geological Survey
UTO	Universidad Técnica de Oruro, Technical University of Oruro
YLB	Empresa Pública Nacional Estratégica de Yacimientos de Litio Bolivianos, Public Strategic National Company of the Bolivian Lithium Resources
YPFB	Yacimientos Petrolíferos Fiscales Bolivianos, Bolivian State Hydrocarbon Company

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1 Introduction

1.1 Global-Local Perspectives on Lithium

Electric cars are considered the sustainable transportation alternative of the future. Governments around the world are investing billions into e-mobility. Germany has put forward the National Development Plan for E-Mobility which aims to put one million battery electric vehicles (EV) on German roads by 2020 and six million by 2030 (Bundesregierung 2011, 10). France, China and the USA plan to invest 2.2, 3.3, and 22 billion EUR, striving for two, three, and twelve million EVs by 2020 respectively (Seiwert 2010). E-mobility is promoted around the world as an incentive for growth and a key component of making driving more sustainable by lowering carbon emissions and noise pollution.

A substantial investment into e-mobility calls for the securement of the necessary resources. Long-term access to the alkali metal lithium, the crucial material for energy storage in lithium-ion batteries, is essential for this endeavor. The increasing interest in e-mobility has also supported a global surge in lithium demand. Most lithium, particularly the brine-based lithium used in batteries, is found in Latin America. Yet, lithium producing countries in the Global South such as Chile, Argentina, and Bolivia are not the focus of the political discussions on the strategic element in the Global North. E-mobility is only approached as an interesting strategy to reach global climate goals. The impacts of lithium exploitation and the local perspectives in mining economies in Latin America are neither considered nor understood.¹ The present thesis addresses this gap by following an interest in Bolivian viewpoints on the lithium boom.

As the country with the largest lithium reserves, Bolivia provides an interesting case study of the impacts of “greentech” resources in producer countries and on local communities. Moreover, Bolivia has been considered a prominent example of a country afflicted with what the literature describes as the “resource curse”. Though endowed with abundant natural resources, the Andean country has not been able to use this comparative advantage to stir national development. Rather, Bolivia has undergone multiple crises of economic and political instability as well as social unrest

¹ The German National Development Plan for E-Mobility (Bundesregierung 2011) for example does not mention producer countries.

(Auty 1993; Auty 1995; Lay, Thiele, and Wiebelt 2008; Frankel 2010). The explanation of this “curse” of natural resource endowment has been a long-term focus of research in the social sciences (Atkinson and Hamilton 2003; Auty 1993; Basedau 2005; Collier and Hoeffler 1998; De Soysa 2000; Frankel 2010; Humphreys, Sachs, and Stiglitz 2007; Lujala and Rustad 2011; Ross 1999; Sachs and Warner 2001). Yet, when it comes to the link between resources and conflict, we lack a clear understanding of the conditions that facilitate the emergence of mobilizations and resistance (see Chapter 2.3).

At the same time, dependence on natural resource extraction is growing in Latin America (Gudynas 2015a; Revette 2017; Rodrigues-Silveira 2014). In Bolivia, the progressive Morales government is preparing the industrialization of its lithium resources as the basis for a global switch to e-mobility. The impacts of a resource initiative of this magnitude on local communities in Bolivia remain understudied (compare Chapter 1.4). Studying local perceptions of lithium industrialization before the outlined changes in governance could contribute crucial information to the long-standing research puzzle of why resource extraction supports the development of conflict in some cases but not in others. To support our understanding of this theoretical question in local conflict contexts is a central aim of this study.

1.2 Understanding the Resource-Conflict Link

Social science research has long discussed the question of how natural resource endowment interacts with conflict development. As I will outline in the following short summary and in more detail in Chapter 2, the preexisting theoretical debate focused on macro dynamics provides an insufficient basis to understand the development of resources conflicts. Existing global, often quantitative, theories need to be reexamined to assess a case like the Bolivian lithium initiative because these theoretical perspectives fail to include regional and local dynamics in the context of a continuous extractive development in Latin America.

The interactions of resources and conflict have long only been approached from a global research angle. An important starting point, the “resource curse” theory, initially established a direct link between resource abundance and growth limitations (Sachs and Warner 1997). Out of this, the idea of a “curse” of natural resources (Auty 1993) also known as the “paradox of plenty” (Karl 1997) emerged, positing that valuable natural commodities slow socioeconomic development. By

establishing a simple conditional relationship between resource abundance and growth, the resource curse framework failed to sufficiently account for the complexities of resource extraction (Revette 2017, 151).

Subsequent research focused on different explanatory angles for growth failures, identifying, to name two examples, a relationship between resource abundance and limited economic diversification (Ross 1999; Sachs and Warner 2001) as well as failures in human capital development and education (Gylfason 2001). The “rentier state” branch of the resource curse debate studied the impacts of resources on political institutions, democracy, and human rights. Authors such as Mahdavy (1970), Karl (1997), Ross (1999), and Basedau (2005) showed that resource rents tend to corrupt politicians and support nepotism, clientelism as well as inefficient institutions which can produce socio-economic failures and authoritarianism.

In the mid-1990s, the focus of scientific engagement shifted to the connection between resources and conflict. Research by Collier and Hoeffler (1998, 2004) established a positive relationship between resource abundance and violent conflict. This triggered a discussion on the factors behind this link, later known as the “greed vs. grievance debate”. The idea of a greed mechanism assigns explanatory value to the opportunities provided by valuable resources. Monetary wealth can fuel social conflicts in a zero-sum-game of rent distribution and looting between different actor groups. Grievances, best described as deeply felt concerns, on the contrary relate to the motives behind resource conflicts. The grievance mechanism was mostly related to the (perceived) scarcities of certain resources. Authors such as Homer-Dixon (1991, 1994), Bächler, Böge and Klötzli (1996), and Ohlsson (1999, 2000) linked conflicts directly to population growth and environmental changes that produced resource scarcities which again mobilized communities. In statistical analysis, the greed mechanism proved more robust than the grievance mechanism (Collier and Hoeffler 2004; Fearon and Laitin 2003).

The premature abandonment of the grievance theory in the study of resource conflicts, however, is the result of leaving out important dimensions in the above outlined debates. The findings of the early discussions show essential gaps, especially regarding subnational and local conflicts. First, to be able to measure causal relationships in quantitative cross-case comparative designs, resources were related directly to conflict. Thereby, important context factors were black-boxed, while consensus emerged among scholars that resources do not possess such an individual quality to drive

conflict (Le Billon 2001; Bannon and Collier 2003; Mildner, Lauster, and Wodni 2011a; Basedau and Richter 2013; Frerks, Dietz, and van der Zaag 2014; Simmons 2016a).

Second, the employed statistical models focused on violent conflicts, defined as a certain number of battle deaths per year. This emphasis on war has limited research interests to certain actor groups such as rebels, omitting the importance of state, economic, and local actors in studies of resource extraction and conflict (Humphreys 2005; Revette 2017, 151; Schure 2007). Consequently, this approach did not capture less violent protest movements or low intensity conflicts (Le Billon 2008; Mähler and Pierskalla 2014; Samset 2009) and underestimated the explanatory power of grievances (Humphreys 2005; Simmons 2016b).

Third, the particularly narrow understanding of grievances in the early debate further limited the relevance of the findings. Grievances are not only a result of scarcities but develop around different aspects of a resource project. The exploitation of resources creates local environmental, social, and cultural impacts and the resulting grievances can create the conditions for conflict to emerge (Barvinck, Pellegrini, and Mostert 2014; Humphreys 2005; Mähler, Shabafrouz, and Basedau 2010; Mildner, Lauster, and Wodni 2011c; Sinnott, Nash, and Torre 2010).

In light of the limitations of existing models, research projects started to concentrate on natural resource governance as an explanatory variable of why resource conflicts develop in some cases but not in others. This research line maintains that a “good” management of commodities supports the containment of conflict while inefficiencies, nepotism, and a focus on short-term gains confine particularly countries in the Global South to resource experiences laden with conflict (Schure 2007; United Nations Environmental Programme 2009; Sinnott, Nash, and Torre 2010; Mildner, Lauster, and Wodni 2011a, 7–8; Frerks, Dietz, and van der Zaag 2014; Acheson 2006, 118).

At the same time, regarding the developing understanding of the importance of local actors in resource conflicts, scholarship also responded with regional perspectives on resource conflicts. For Latin America, neo-extractivism research has focused on emerging trends in resource governance under new left governments, initiating a debate about the nature of resource based development in the region and the connected social conflicts (Bebbington 2009, 2012; Burchardt, Dietz, and Öhlschläger 2013; Gudynas 2012, 2013, 2015a; Svampa 2012, 2013). The neo-extractivism school outlines a greater commitment to publicly-managed resource projects in Latin America starting in

the late 1990s. Thereby, progressive governments use resource revenues to finance social projects and support the government budget. At the same time, the new extraction or neo-extractivism, repeats exploitative economic practices. Literature considers this a primary cause for resistances from local communities which are considered to reject the continuity of this outward capitalist orientation (Burchardt, Dietz, and Öhlschläger 2013; Gudynas 2015a; Svampa 2012). Neoextractivism scholars thus frequently reduce resource conflicts to contestations of extractivism as a development model which has led to criticism (Revette 2017, 151; Wolff 2017). Furthermore, also neo-extractivism research maintains a macro perspective, which fails to capture micro level dynamics of conflict development (Revette 2017, 151) that could explain cases such as lithium exploitation in Bolivia.

This brief outline of the existing literature, discussed in greater detail in Chapter 2, shows that a framework for the study of local dimensions of resource projects – which are of central relevance for an understanding of the Bolivian lithium case – and their impacts on conflict development is lacking. Within the complex research panorama, insights into global dynamics of resource conflicts are tentative at best; studies across the board fail to grasp micro perspectives, local intricacies, and low intensity conflicts. To understand these local dynamics, we need to refocus our attention to local actors and their perceptions of resource projects that result from globally defined resource demands. The grievance concept, when understood from such a local viewpoint, can be an important vantage point to approach sub-national dynamics.

In a necessary reconceptualization of grievances, I orient myself on meaningful grievances using the works of Simmons (2014, 2016b). This research line highlights that conflict emergence depends on the meanings local actors give to grievances in a resource project and how these meanings interact with other contextual factors such as the cultural, economic, and social significance awarded to the resource or the land wherefrom the resource is extracted. By focusing on local interpretations of the lithium boom, we can also gain a more holistic understanding of the impacts of the expansion of e-mobility based on this global commodity. At the same time, I believe that we need to broaden the concept of meaningful grievances to incorporate governance as an important contextual factor to comprehend resource conflict development better. Existing research has outlined the significance of governance to provide conditions for conflict emergence, particularly when focusing on local interpretations of a resource project (Humphreys 2005; Schure 2007; Basedau and Lay 2009; Sinnott, Nash, and Torre 2010; Tänzler and Westerkamp 2010; Mähler, Shabafrouz, and

Strüver 2011; Mildner, Lauster, and Wodni 2011a; Frerks, Dietz, and van der Zaag 2014). Thereby, I do not understand governance normatively, as the viewpoint on what is “good” or “bad” governance is time and context dependent. Rather, I use the concept of governance as an analytical category to understand conditions for conflict emergence in the lithium case (see Chapter 2.4).

I argue that in projects of the magnitude of lithium industrialization in Bolivia, the conditions under which conflicts are likely to surface can only be understood with an in-depth case study that includes interaction with the local communities and their interpretations of the resource initiative. By using a research approach focused both on local meanings connected to grievances and the interaction of these interpretations with the governance of the project, this study provides an important link between two separate discussions in the social sciences. Moreover, by targeting local perceptions and dynamics that have been black-boxed in macro level studies of the resource curse and neo-extractivism, this approach can provide a valuable lens to study micro perspectives in resource conflicts. This can also support a better understanding of contextual conditions for the emergence of conflict over extractive expansion in local Bolivian communities and beyond.

1.3 Research Objectives

The central aim of my case study on the Bolivian lithium program is to understand local actor perspectives on lithium industrialization up to 2016. I will identify resource governance dimensions of the program and analyze their interactions with local grievances, answering the following research question: *Do local meanings awarded to grievances in the present context of the Bolivian lithium program provide sufficient conditions for the emergence of conflict?*

The overall research aim can be broken down into three objectives, separated into three research blocks below. The first objective is to examine the resource governance approach for lithium in the context of a globally rising demand for e-mobility and the changing mining industry in Bolivia under a post-neoliberal government. The different dimensions of resource governance will be discussed in more detail in the following Chapter 2. From a local perspective, particularly the governance dimensions of project planning, stakeholder integration, benefit distribution, and externality management are relevant for grievance development.

Research Block 1

- *How is lithium mining and processing governed in Bolivia?*
- *How does the lithium governance approach integrate into the more general Bolivian mining panorama?*

On a theoretical level, this research is especially interested in the interaction of resource governance and local grievances. In particular, I believe that the effects of resource exploitation on livelihoods impact local viewpoints of the project. At the same time, political decisions and power plays can further support the formation of grievances. Thus, it is crucial to understand and consider the specific governance context in which grievances are locally interpreted. I hypothesize that resource governance substantially shapes local meanings awarded to grievances and impacts the conditions for conflict emergence in the Bolivian lithium program.

Research Block 2:

- *What impacts does lithium governance have on the development of grievances and on the local meanings awarded to these grievances?*

However, investigating resource governance alone is not sufficient to understand case-specific grievance emergence and local meaning-making. Grievances that mobilize a community are often connected to additional factors such as group perceptions of their own economic situation, threats to subsistence, or to deeply felt sentiments of historic exclusion and injustice. Understanding these contextual factors can help us grasp why certain grievances resonate more with local communities. This could further support our comprehension of conditions for mobilizations and the emergence of resource conflicts. At the same time, local interpretations interact with the way a project is presented (or framed). In recent social movements in Bolivia, governance interpretations were strongly linked to a rejection of privatizations of resource programs while protest organizers successfully framed emerging conflicts as resistance against neoliberalism.² This provided

² The buzzword neoliberalism has many different connotations. Economists define it as a set of economic policies. By critical scholars such as Harvey (2004) and in the Latin American context, neoliberalism is understood as an ideology (with mostly negative connotations). In its economic understanding, neoliberal policies seek to deregulate and liberalize economies following a free-market laissez faire ideal (thus building on the classic idea of enlightenment liberalism of the self-regulating market) (Steger and Roy 2010). In the 1980s and 1990s, Latin America served as a laboratory for neoliberal policy sets, which were later implemented across the Global South (ibid). While these structural reforms brought some economic recovery, they also had dramatic social effects, resulting in increasing unemployment and poverty. In Latin America, these social effects of neoliberal politics are interpreted as a major

conditions for alliances to span existing cleavages and to consolidate (compare Farthing and Kohl 2014; Simmons 2016b).

Research Block 3

- *Which other context conditions and frames are important for the local interpretation of the lithium project?*
- *How do these context factors interact with grievances and resource governance dimensions in the program?*

The resource conflict debate has abandoned the pursuit of global theories; a greater understanding of the conditions for conflict arise when research engages with the particularities of different project set-ups and the needs of different actor groups (Barvinck, Pellegrini, and Mostert 2014; Mähler, Shabafrouz, and Basedau 2010; Mildner, Lauster, and Wodni 2011c). In this mind-frame, I support the development of a case-based approach and concentrate my analytical interest on the interaction of governance and local grievances in the publicly managed Bolivian lithium project. Such a local case focus can serve as a building block for a better general understanding of resource conflicts.

To assess the research objectives, this study relies on different methodological tools explained in detail in Chapter 3. A core theoretical contribution is the development of an analytical model based on the findings of the different research branches on resource governance and grievances. In a congruence analysis, the theoretical model is contrasted with case knowledge from different sources. First, problem-centered interviews capture local perceptions of lithium governance, existing grievances, and grievance meanings in an actor-centered micro analysis. Second, the interview material is contrasted with primary documents and secondary literature. Third, two control cases, namely, the Argentinean lithium programs and the first lithium project that was initiated in Bolivia in the late 1980s are analyzed to allow for some comparability of the findings.

cause for massive social mobilizations and the rise of “new left” regimes (Farthing and Kohl 2014; Spronk and Webber 2007). Neoliberalism is often understood as an ideology which goes beyond economic policy prescriptions (Steger and Roy 2010); as a mode of production that supports the consolidation of the economic interests of the industrialized countries in opposition to the needs of the Latin American populations. For Tapia (2008), neoliberalism seeks a deconstruction of resource-nationalistic political structures that impede capitalist and transnational expansions based on cheap raw materials from the periphery. When the term is used by critical scholars and the Bolivian government, it is in this latter ideological sense.

1.4 A Case Study on Lithium in Bolivia

Bolivia is a particularly interesting case to study the dynamics of resource abundance, governance, and the development of local grievances and conflict. The Andean country has a long history of extractive development and is on the brink of exploiting the largest lithium resources in the world. The high-value metal revives the dream of a better future amongst some Bolivians, while others fear that this project is just an addition to the long list of Bolivian resource nightmares. Resources have been the economic backbone of the country for 500 years. Despite having large amounts of silver, tin, and gas, Bolivia has not industrialized and has been confined to the position of a raw material producer. Resource abundance has supported the consolidation of export-oriented economic institutions that impede the development of other trades and reinforce a rentier state mentality fueled by corruption and nepotism (Auty 1995; Lay, Thiele, and Wiebelt 2008; Frankel 2010). While in recent years cash transfer programs financed by money from natural gas had the potential to reduce extreme poverty, mineral-rich Bolivia still is one of the poorest countries in South America (Bertelsmann Stiftung 2016, 3). Bolivia is thus an exemplary case to study the resource curse (Auty 1993, 1995; Lay, Thiele, and Wiebelt 2008; Frankel 2010) and the impacts different governance approaches have on regional and local interpretations of resource projects.

Bolivia provides a good case to study and understand conditions for the emergence of resource conflicts. Questions of revenue distribution, resource ownership, employment, and working conditions for miners have fueled violent conflict in Bolivia since colonial times (Quiroga Trigo and Avejera Udaeta 2014). Between 2003 and 2005, the country fought intensively over the control of natural gas, also known as the Gas Wars. Tens of thousands protested the neoliberal privatization of the resource. The Gas Wars supported the rise to power of a new political actor, the indigenous union leader Evo Morales and his Movement towards Socialism (MAS). The MAS is considered to be part of the “pink tide”, the general (and somewhat problematic) term for the governments with a “left”, “progressive”, or “socialist” agenda that took power in Latin America after 2000 (compare Enríquez 2013; Farthing and Kohl 2014). Bolivia is also part of the changing political landscape in the region connected to the deprivatization of natural resources.

A central election promise of President Morales was to separate from the open market policies imposed by the World Bank, to nationalize the country’s natural resources, to regain sovereignty,

and to direct revenues from mining to the public. Bolivia has initiated steps towards developing publicly owned resource projects and to refine and process resources in the country instead of simply exporting raw materials. Lithium is a flagship initiative of this new approach; the agency responsible for the project asserts that “real development for our country will come by industrialization in the hands of the state, this way we can guarantee the sovereign control over our primary commodities” (Gerencia Nacional de Recursos Evaporíticos 2012, 7).³ Since 2008, the Bolivian government has assigned over 900 million dollars to lithium industrialization (Echazú Alvarado 2015) .

I am interested in the local impacts of the decision to exploit and industrialize lithium in Bolivia. Governance of lithium is an important contextual factor for the local interpretation of the resource. As the governance of lithium under the MAS administration exhibits major differences compared to past programs, how governance and conflict interact reemerges as a relevant question. Will lithium extraction support mobilizations in Bolivia or does the altered governance approach significantly impact the meanings awarded to local grievances and thus, the conditions for conflict emergence? Bolivia can thereby serve as a crucial case to understand the relevance of governance as a factor for conflict development.

To allow for the comparison of governance approaches, I will contrast the Bolivian case with other lithium projects. The current initiative is not the first attempt to exploit valuable lithium in Bolivia. In the late 1980s, the US-American company LITHCO entered contractual negotiations with the then neoliberal Bolivian government. This historic comparison is valuable, as “every case is always far more similar to itself at a different time than it is to any other case” (Coppedge 1999, 472). Due to local protests, LITHCO decided to move operations to Argentina in 1992. Argentina, where neoliberal institutions are widespread and private multinational corporations manage nearly all mines, serves as another contrasting example. The country has started multiple lithium projects in the last decade. Contrasting findings and observations from Bolivian history and Argentina’s drastically different mining environment are critical to understanding the impacts of governance on grievance development and interpretations also beyond the individual case.

³ Original quote by the head of the GNRE, Alberto Echazú: “*El verdadero desarrollo de nuestro país vendrá de la mano de la industrialización a cargo del estado, de esta manera vamos a poder garantizar el control soberano sobre nuestras materias primas.*”

Beyond the theoretical shortcomings in the literature and the need to approach conflicts through the lens of local interpretations and grievances, an important empirical gap exists in the study of resource conflict cases in Latin America and of Bolivia as a resource curse example. As Hindery (2013, 17) establishes: “Despite the extractive boom sweeping across Latin America, until recently, research on conflicts related to extractive industries, social conflict, and the environment has been surprisingly sparse.” Similarly Bebbington (2012, 3) outlines that “the literature hardly reflects the relative extent of the political economy and environmental transformation that has been the fruit of the extractive economy.” While investigations on resource conflicts in Latin America and Bolivia are limited, a concrete gap exists regarding a comprehensive, empirical-based social science engagement with lithium.⁴ The existing case studies that analyze conflicts related to natural resources in Bolivia predominately focus on the exploitation of gas (Humphreys Bebbington and Bebbington 2010; 2012, 2013). Individual studies have zeroed in on conflicts over petrol (Pellegrini and Ribera Arismendi 2012), water (Simmons 2016a, 2016b) and other traditional mining resources such as gold or tin (Andreucci and Radhuber 2017; Quiroga Trigo and Avejera Udaeta 2014).

Studies on lithium are descriptive, mostly based on secondary data or limited empirical grounding, while a conflict focus is nearly completely absent. Social, political, and environmental impacts of mining for lithium in Bolivia as well as the potential benefits have been a concern in short papers by Mares (2010), Hollender and Shultz (2010), Rüttinger and Feil (2010), and Ripley and Roe (2012). A more extensive work has been conducted by the German anthropologist Juliana Ströbele-Gregor (2012, 2014, 2015); her focus is on socio-ecological dimensions of the project and existing inequalities in relation to knowledge transfer, while her studies are based on secondary data and individual expert interviews.⁵ The research by Rüttinger and Feil (2010) is the only study that analyzes lithium conflict risks in Bolivia. The report is, however, confined to secondary data, focuses on the macro level, and concentrates on the Bolivian integration in the lithium market. Thereby, it uses the tool of scenario development to describe possible conflict outcomes. In Bolivia, the NGO CEDLA (Centro de Estudios para el Desarrollo Laboral y Agrario – Study Center for Labor and Agrarian Development) published a widely debated critical report on the lithium program (Guzmán

⁴ There is, however, a notable engagement with the Bolivian case in the natural sciences. Studies by e. g. Ballivián and Risacher (1981), Tahlil (2008) and Sieland (2014) have provided an important background for understanding potential environmental risks of lithium exploitation (see Chapter 6.5).

⁵ While the studies by Ströbele-Gregor give an important account of the lithium project, I challenge the selection of interview subjects. Known critics make up an unequal proportion of the voices, which biases the findings towards a negative evaluation. I found that many of these experts did not have access to information on the state lithium program; this knowledge gap should be taken into account in their evaluation of the program.

Salinas 2014b), which describes project planning as well as the potential environmental and social impacts. The CEDLA study gives an important account of existing knowledge on the initiative, but it is also confined to secondary data. Moreover, it has been criticized based on its scientific value (Montenegro Bravo 2015) and on political grounds (Echazú Alvarado 2014).

Other studies include unpublished seminar papers (Aguilar-Fernandez 2009; Propfe 2012) and short reports by NGOs. Different articles on the lithium project were published in the journal “PetroPress” by the NGO CEDIB (Centro de Documentación e Información de Bolivia, Documentation and Information Center of Bolivia). These include a short study on the future of lithium exploitation in Bolivia by Augstburger (2013) based on 30 expert interviews. Nacif (2012) studied the history of Bolivian lithium exploitation, while Rupp (2013) used media coverage to analyze the first attempt to develop lithium in the late 1980s and 1990s. Further accounts of the initiative include government information such as the annually published institutional reports of the Bolivian National Management Committee for Evaporite Resources (Gerencia Nacional de Recursos Evaporíticos – GNRE) (2011, 2012, 2013, 2014, 2015c, 2016b) and government white papers (Echazú Alvarado 2015; Montenegro Bravo and Montenegro Pinto 2014). Additionally, there are some case studies of lithium in other Latin America countries, particularly Argentina (Anlauf 2014; Fornillo 2015; Göbel 2013a, 2013b; Nacif and Lacabana 2015).

In conclusion, existing research gives only a descriptive account of the project itself and focuses on general questions, such as the integration of the Bolivian initiative in global market structures. Moreover, many studies are from 2010, when the project had just started and received a lot of media attention, and do not have any follow-up. Also, most investigations were conducted in anthropology, geography, or sociology, leaving a need for a more thorough engagement from a political sciences perspective – particularly when shifting the focus to governance. Particularly the interconnectedness of resource governance and local grievances in lithium industrialization in Bolivia and beyond has received hardly any attention.

Governance of lithium in Bolivia has been the emphasis of only one study, a Master’s thesis by Manuel Olivera Andrade (2014) from the Major University of San Andrés (UMSA) in La Paz.⁶ Olivera Andrade engages with three risk factors for the state lithium program: governance

⁶ The study came to my knowledge only because it won a UNESCO research prize. I could interview Manuel Olivera Andrade in December of 2015 in La Paz.

(understood as the interaction of different actors in the program), market integration, and historic extractivism. He addresses the topic from a political economy viewpoint and bases his findings on 50 interviews (19 local). His book was the first broader empirical study which could portray important cleavages between local communities. The discussion of these conflict lines on the local level is, however, only a minor focus of his work. The thesis primarily engages with questions beyond the local perspective. Olivera Andrade's study is theoretically anchored in the works Elinor Ostrom and the Bolivian philosopher René Zavaleta Mercado. He thus engages with the topic of governance from a very different angle and does not consider the extensive scholarship on resource conflicts and grievances. His findings on local cleavages and block building in the Salar de Uyuni provided, nonetheless, important insights that helped shape my interview guidelines.

Further interesting research engaging with extractive development and lithium in Bolivia is currently being conducted at the University of Boston. Revette (2017) highlights a need to engage with local actors and their beliefs and meanings to understand the initiative. While comprehensive findings have not been published, the theoretical lens suggested by Revette (*ibid.*) confirms my perception of a need to change the tools with which we approach the study of local resource projects in general and the Bolivian lithium initiative in particular.

1.5 Scientific and Political Contributions

In light of the gaps in theory and empirical research, this study provides a framework to assess the conditions for local conflict emergence in resource projects through the lens of “meaningful grievances”. This approach will contribute theoretically, methodologically, and empirically to the scholarship and can provide practical insights for policy makers. The literature review underlines the necessity to scrutinize, extend, and integrate existing theoretical frameworks. Many relevant studies emphasize macro perspectives and do not contribute to the understanding of low intensity local conflicts. When it comes to the resource curse, grievances, and resource related conflicts, research on Latin America has mostly engaged with the findings of the neo-extractivism school while insufficiently incorporating local perspectives and earlier scholarship.

In response to these gaps, the present research combines important theoretical schools as a basis for the analysis of the Bolivian lithium program. Through the linkage of theoretical approaches, the

work can make important contributions to the understanding of resource governance, its impacts on local grievances, and subsequently on the development of social conflict or the lack thereof. Theoretical insights on the interactions of resource governance and conflict in the paradigmatic Bolivian case thereby serve as a “building block” (George and Bennett 2005, chap. 9) to support future theoretical conclusions for the Bolivian example and beyond and add to our theoretical understanding of resource conflicts in a bounded context.

Simultaneously, the research project underscores the literature body on the Bolivian lithium case with a deeper empirical grounding. Thereby, it gives voice to the interests of local actors who have not been the focus of scientific study. Ströbele-Gregor (2012, 79) finds “the realization of an empirical study that engages with the information and interests of the local communities and provides the basis for the conduct of an adequate consultation process” to be paramount.⁷ The present study fills precisely this gap by placing the local interpretations and meanings at the core of its research interest. At the same time, the work contributes to research on the Bolivian lithium case from a political science point of view and in the English language.

Methodologically, this thesis uses the concept of grievances, which has been unjustly neglected in social science research, as a tool to engage with low intensity local conflicts in extractive initiatives. This study further describes different dimensions of governance as a framework for a congruence test that can be used for the analysis of cases beyond the Bolivian lithium example.

Lithium exploitation in Bolivia is also an important policy topic. Studying the local impacts of global trends such as the switch to lithium-based e-mobility has a high political relevance in the context of the debate on climate change. The global discourse has been confined to accessing e-mobility with the positive connotation of sustainable mobility, while global e-mobility strategies have failed to assess local impacts of the connected resource needs. Lithium should be understood as a globally traded commodity integrated in a market landscape dominated by the Global North. Historically, this marketplace for resources has confined producer countries in the Global South to primary resource dependence, with all the negative political, social, and economic effects the resource curse prescribes. At the same time, neo-extractivism research has pointed to growing (local) resistances

⁷ Original quote: “*Dringend geboten wäre die Durchführung einer empirischen Forschung, die der Frage der Informations- und Interessenslage der lokalen comunidades nachgeht und die damit die Vorbedingungen für die Durchführung eines angemessenen Konsultationsprozesses schüfje.*” Spelling corrected from original.

against extractive practices in Latin America, which could also impact the lithium initiative. In this larger perspective of global dependencies and trends, it might become necessary to question our image of lithium as “good” simply because of its relevance for supposedly “green” e-mobility. The study of lithium from the viewpoint of the resource producers can provide an important extension for political debates on lithium-based mobility and support a more holistic evaluation.

Engaging with the lithium governance approach can also lead to relevant insights from a public policy perspective. The research provides practitioners with a deeper understanding of the impacts of public resource governance in the Bolivian context and sharpens our understanding of the interactions of this governance strategy with local interpretations of resource projects. Thereby, the analysis can uncover local perspectives and support a meaningful consultation process on the political level (Ströbele-Gregor 2012, 79).

1.6 Outline of the PhD Thesis and General Remarks

This thesis is structured in eight chapters. Following this introduction, Chapter 2 reviews the existing literature and introduces important concepts. It engages with the resource curse and the resource conflict nexus with a focus on the current state of investigations on grievances. It also outlines the state of research on resource governance and its interconnectedness with conflict to establish the analytical framework on which the subsequent discussions are based. Chapter 3 explains the research design and the methods used for data collection and data analysis. It also outlines challenges in the process of data generation as well as ethical considerations in the conduct of the study.

Chapter 4 introduces the case study, focusing on recent mining developments. It describes the long Bolivian mining history, the organization of the mining sector, and the legal panorama as an important basis to understand the analysis of the lithium case. The fourth chapter also engages with conflict and conflict development in mining under the MAS administration. The following Chapter 5 familiarizes the reader with the evaporite resources lithium and potassium. It gives an overview of the history of lithium industrialization in Bolivia and introduces an important secondary case by describing the first attempt to exploit lithium in the country. The fifth chapter further outlines the

status-quo of the MAS lithium program and introduces the reader to the region of lithium exploitation in the southwestern part of the country.

The subsequent Chapters 6 and 7 comprise the actual case study by linking the theoretical model to the empirical findings. Chapter 6, as the first part of the core case study, analyzes the governance of the lithium program, outlined along the theoretically defined dimensions of project planning, stakeholder integration, revenue and externality management. The corresponding Chapter 7 engages with grievances linked to these governance dimensions and their local interpretations. It analyzes the perceptions of governance decisions connected to project management and community integration, revenue and environmental governance.

Chapter 8 provides a digression by reflecting on lithium industrialization in Argentina. In Argentina, a different governance approach is followed. I will discuss how this has impacted local meaning-making over lithium and how these findings compare to Bolivia. Such a contrast can give tentative indications for the relevance of my findings beyond the Bolivian case. The final Chapter 9 discusses the overall findings of the thesis. It will outline theoretical, methodological, and practical implications of the study; give policy recommendations, and indications for further research needs.

I would like to highlight that my findings are based on field research between September of 2015 and May of 2016. This thesis analyses the status of the project at that time. In February of 2017, shortly before the finalization of this research, the government of Evo Morales initiated an important re-organization of its administration, establishing a new Ministry of Energy. Plans were announced in early 2017 to found a lithium company within the jurisdiction of the new ministry (Quintanilla 2017). This was implemented by Law N° 928 in April of 2017, when the Public Strategic National Company of the Bolivian Lithium Resources (Empresa Pública Nacional Estratégica de Yacimientos de Litio Bolivianos – YLB) was created. The long-time head of the lithium organization GNRE, Alberto Echazú, was promoted to Vice-Minister of High Energetic Technologies in the new Ministry of Energy (Quintanilla 2017), while a long-standing academic advisor of the project, engineering professor Juan Carlos Montenegro Bravo, became the new national manager of the lithium organization (COMIBOL, Memorándum PE-DARH-013/2017, 2.3.2017).

I have commented on these developments in footnotes throughout the thesis. The analysis of structural conditions in the lithium project is, however, based on the insights of my interview partners and literature from the aforementioned timeframe of field work, when the project was under the tuition of the Ministry of Mining and Metallurgy (MMyM) and the public mining company COMIBOL. Moreover, I will continue to talk about the lithium organization GNRE, which was the name of the organization during the research phase. These administrative modifications, however, have no impact on my findings regarding grievances and the local interpretation of lithium and potassium industrialization.

The project denomination used by the government is the “National Strategy for the Industrialization of the Evaporite Resources of Bolivia” (see Chapter 5.3). Like most of my interview partners, I refer to the initiative as the “Bolivian lithium program”. Also, the new company YLB only refers to lithium in its name. Yet, I would like to highlight that the government initiative also focuses on additional resources, mostly potassium and magnesium. These aspects will be discussed marginally in the following chapters. Nevertheless, the focus of the present work will be on lithium, which is by far the most economically and politically valuable resource in the program.

2 Theoretical Concepts and Analytical Design

In this chapter, the multidimensional discussions on the resource conflict link are outlined. First, I will engage with two key concepts I use in this research, natural resources and social conflict, and discuss my understanding of them. Regarding natural resources, I will elaborate on important sub-concepts such as resource scarcity and briefly relate these to the resource lithium.

Following this conceptual introduction, the most important theories on the resource conflict link will be discussed. Out of the existing theoretical debates, I found that the concept of grievances is particularly relevant for the set-up I am interested in, namely local conflicts over resource exploitation. I will engage with the intersection of grievances and conflict development, outlining different theoretical takes on the concept of grievances and introducing my own understanding of meaningful grievances. Since grievances interact with governance, a further focus of the theoretical discussion will be placed on resource governance research, outlining the dimensions of resource governance that have been described in the literature as supporting conflict.

Many decades of research have shown that the complexity of the resource governance conflict link does not back the pursuit of a general theory. Consequently, I focus my analytical interest on a subset of the debate and the intersection of resource governance and local grievances in a state organized resource project. Thus, the literature review will give specific attention to the impacts of resource exploitation on local livelihoods.

Following a summary and discussion of existing theories and my own understanding of central concepts, I will introduce my analytical framework based on a synthesis of grievance and resource governance research, operationalizing the dimensions of governance in relation to the “meaningful grievance” concept.

2.1 Introduction to the Social Science Debate on Natural Resources

The social sciences have long been interested in the effects of natural resource wealth on societies and, specifically, on conflict development. For an engagement with the debate it is necessary to explore how natural resources are defined and understood in the social sciences.

According to Mildner (2011, 11), natural resources are substances in nature that can be made valuable for human usage. In combination with other resources, namely manmade physical resources, human and social capital, they define the economic backbone of a nation (Basedau and Lay 2005, 9–10). In an economic understanding, resources are frequently referred to as commodities, as marketable goods. Natural resource capital is prone to price volatility and external cyclical shocks. Consequently, Singh and Bourgoignie (2013, 6), posit that “from both an economic as well as a policy viewpoint, extractive resources’ relative absence of value added together with their price volatility on world markets make them an unreliable source of income for national government.” Natural resources are locally concentrated, meaning that some countries have more access to them than others. In this context, countries are often categorized as having either resource abundant or resource scarce economies. In the literature, the concept of abundance is often employed to refer to highly profitable, non-renewable resources such as oil or minerals, while scarcity more closely relates to renewable resources which directly link to local livelihoods, such as water (Mildner, Lauster, and Wodni 2011c).

Thereby, the concepts of scarcity and abundance as well as the idea of natural resources as such are social and historical constructs. Whether natural resources are considered of economic value is highly dependent on the requirements and practices of humanity. It is not the resource as such, but the significance ascribed to it by society that makes it a marketable commodity and thus potentially scarce or abundant. To give a concrete example, people, not nature, decided that diamonds are valuable (Le Billon 2001, 565–66).⁸ Consequently, natural resource abundance is a flexible construct and continuously redefined with the creation of new resource needs and the development of substitutes for formerly indispensable commodities.

⁸Le Billon (2001, 565) describes it like this: “Whether or not nature is transformed into a resource is related to human desires, needs, and practices; or, from a political economy perspective, the conditions, means and forces of production.” For further insights into the discussion on the socially constructed nature of resources see the works of Le Billon (2001, 2005, 2008).

In this context, the (perceived) scarcity of certain strategic resources has been widely discussed in academia and in politics as a global security risk. A frequently used economic indicator of resource scarcity is the statistical range, the known timeframe in years for which the commodity will be available and exploitable.⁹ Yet, considering the multitude of industrial substitutes, absolute resource scarcity is rare. Relative scarcity, which takes the distribution of resource access and the relationship between demand and supply into account, is a more decisive variable (Mildner 2011, 11). Thereby, again, the scarcity of a natural resource is “subjective; it is determined not just by absolute physical limits, but also by preferences, beliefs, and norms” (Homer-Dixon 1994, 9). Literature points to the frequent inequalities in the distribution of resources and resource rents (Homer-Dixon 1994; Kriesberg and Dayton 2011, 36–37; Wissen 2015, 148). Unequal distribution can cause the perception of scarcities, while shortages in crucial resources can put different interest groups in a zero-sum-game for the securement of their livelihoods. As will be elaborated in more detail further on, resource scarcity and the resulting concerns or grievances have been understood as an important reason for social conflicts (Homer-Dixon 1991, 1994; Kriesberg and Dayton 2011, 36).

Natural resources have been classified into different typologies. Hilpert, Mildner and Rudloff (2010, 5–6) differentiate them based on their natural features: depletable, non-renewable resources (oil, gas); depletable, non-renewable but recyclable resources (minerals, metals); renewable resources with stock depletion (timber, ground water); and renewable resources without stock depletion (solar energy, wind). Natural resources have also been characterized according to their location as “point” resources that can only be found in a defined location and “diffuse” resources that are spread-out over a large distance (Le Billon 2001; Auty 2002; Ross 2003) or as resources that are either “distant” or “proximate” to government control (Le Billon 2001, 570).¹⁰ Richter and Richert (2009, 11–12, 2010, 14–16) support a differentiation between resource conflicts fought over a scarce resource and conflict resources, which are abundant and have certain qualities to support conflict emergence. In relation to conflict resources, one important differentiation is made between “lootable” and

⁹ Mildner (2011, 11) criticizes the use of the “statistical range” to assess resource scarcity. The statistical range is only a snapshot in time as it, for example, leaves aside the possibility that with rising prizes, the exploitation of smaller deposits of a certain commodity can become economically profitable. Also, the influence of recycling and the possibility of the development of substitutes are not considered.

¹⁰ Le Billon (2001, 570) differentiates between distant and proximate resources according to their likelihood to foster conflict. The further away geographically a resource is from government control, the easier it is for third parties to exploit it and stir conflict.

“unlootable” resources according to the easiness of their extraction and transportation by unskilled personnel (Le Billon 2001; Ross 2003; Collier and Hoeffler 2004).¹¹

Resources generate different types of income for the exploiting entity and the government. Thereby, it is important to differentiate between tax income, royalties, and rents. Royalties (in Spanish, “regalia”) are charged by the resource owner for the right to exploit a certain resource based on ownership (Alberta Department of Energy 2007). Thus, if the natural resource in the soil or subsoil is the property of the national government (in lieu of its people), as is the case in Bolivia, the government charges the exploiting entity (private, state, or cooperative) royalties. In Bolivia, royalty values are defined the 2014 mining code (Ley de Minería y Metalurgia – LMyM; Law N° 535, Art. 227). A royalty needs to be differentiated from a tax, because taxes are applied for a certain purpose, e. g. to finance the public health system, while royalties are not linked to such a purpose but are paid based on ownership as such (ibid.). The idea of resource rents (in Spanish, “renta”) describes the surplus value (from the point of the producer) that can be generated by resource exploitation after considering all costs (including production costs, taxes, and royalties) as well as normal returns on investment (Yeo 2010). Rents are thus supernormal profits (ibid.).

2.2 Social Conflict

The analysis of conflict has always been at the heart of social science research. Great minds have engaged with the question what conflict is, what drives it, and how it affects the social world. When analyzing social conflicts, it is thus important to be clear about the theoretical underpinning upon which the analysis is built. Research in the field of resource conflicts has been criticized for either employing a very rigid conflict understanding (Le Billon 2008; Mähler and Pierskalla 2014; Samset 2009) or for failing to clearly define the theory of the concept being used (Engels and Dietz 2014). This is directly linked to the fact that the social sciences have produced a tremendous amount of literature on social conflict theory without reaching consensus about conflict understandings and definitions (Kriesberg and Dayton 2011, 28). At the same time, the nature of conflict is both described as dysfunctional to social systems and as an important driver of social change (Coser 1964). While the word “conflict” in its general understanding embodies something negative and

¹¹ Ross (2003, 54) introduced other dimensions differentiating between *obstructable* resources, where transportation / exploitation can be easily blocked by rebel groups and *unobstructable* resources as well as *legally tradable* and *illegal* resources.

troublesome, the founding fathers of modern sociology Georg Simmel¹² and Max Weber assert that conflict is inherent to the social world and crucial for bringing about necessary change. “Peace”, as Weber puts it, “is nothing more than a change in the form of conflict or in the antagonists or in the objects of the conflict, or finally in the chances of selection” (quoted in Coser 1964, 21).

Definitions of social conflict vary, but some common threads appear. Coser (1964, 8) defines social conflict as “a struggle over values and claims to scarce status, power and resources in which the aims of the opponents are to neutralize, injure or eliminate their rivals.” According to Boulding (1962, 5), a conflict takes place in a competitive context when two or more interdependent parties have irreconcilable goals which they pursue conscious of the resistance of their opponents. Schelling (1960, 109–110) describes strategic conflicts as a bargaining between parties, which depend on the choices and influence of their opponents, while Wall (1985) sees conflict as a “process in which two or more parties attempt to frustrate the other’s goal attainment (...) the factors underlying conflict are threefold: interdependence, differences in goals, and differences in perceptions.” In relation to natural resources, Schure (2007, 21) defines conflict as “the clashing of interests (positional differences) over national values of some duration and magnitude between at least two parties that are determined to pursue their interests and win their cases.”

This summary of definitions reveals that despite different approaches in the conceptualization of social conflict, agreement on some relevant features could be reached. Social conflict involves different interdependent conflict actors (individual, group, institutional) that perceive incompatible goals and interests between them. In the context of natural resources, conflict frequently embodies diverging goals concerning access to and control over resources and resulting rents. Thereby, the actor perception of the conflict is not only influenced by the conflict item itself but by the surrounding (systemic) conditions (Kriesberg and Dayton 2011, 35). Social conflicts often emerge when actors have different perspectives, values, and experiences or when social inequalities and power¹³ imbalances among population groups are persistent (Coser 1964, 8; Kriesberg and Dayton 2011, 39–43; Wissen 2015, 148). I will discuss these features in more detail in the following chapters.

¹² See Simmel’s work on the sociology of conflict (1904) and Coser’s analysis of Simmel (1964).

¹³ Power is understood in the Weberian sense as the ability of an actor to enforce his or her interest despite the opposition of others.

When engaging with conflict, it is important to abandon a purely negative interpretation of the concept, while keeping the destructive qualities of escalating conflict in mind. Coser (1964) highlights that conflicts are a part of any process of social transformation and vital for change to occur. He criticizes the social sciences for having disproportionately engaged with the dysfunctional side of conflict and ignored the opportunities conflict provides for social processes to occur. As he notes “a social structure in which there is room for conflict disposes of an important means for avoiding or redressing conditions of disequilibrium by modifying the terms of power relations” (ibid., 154–155). Also, most conflicts do not erupt into violence and become manifest but can be resolved within institutional means (Kriesberg and Dayton 2011, 48).

Overt, manifesting conflicts, as Coser (1964, 154–155) acknowledges, can have destructive qualities, particularly if a social system is not able to moderate and tolerate conflict and find institutional responses.¹⁴ This danger is exacerbated in asymmetric conflict situations, when at least one of the conflict parties has less resources and bargaining power and is willing to increase the pressure through the use of force (Kriesberg and Dayton 2011, 38 et seqq.). Such an escalation can result in undesirable direct or indirect outcomes for all actors involved and become a very wasteful process (Barvinck, Pellegrini, and Mostert 2014, 5; Ramos Barón 2015, 53; Tapia Montecinos, Tapia Montecinos, and Quitana Campana 2010, 18 et seqq.).

Consequently, to understand and analyze social conflict, we need to distinguish between conflicts as processes and violence as a solution strategy to conflict (Ramos Barón 2015, 48). I propose to see conflict as a continuum that can have both positive and negative impacts on a social system. While conflict relying on violence can also result in important and desirable social transformations, it causes harm, particularly to weaker actors and is normatively less desirable than cooperation. Regarding domestic resource conflicts in the Andean and Amazon region, Bebbington (2012, 4) underscores that conflict escalations leave traces;

“they create patterns of distrust that are not easily overturned, they leave memories that are then drawn on in future forms of collective action (...), they elicit institutional forms and behaviours that create path dependencies and at certain times they have been implicated in political changes that mark new trajectories in the region (...).”

¹⁴ At the same time, institutional containment of conflict can cement unequal social structures and hegemonic practices (Kriesberg and Dayton 2011, 48).

The Heidelberg Institute for International Conflict Research (Heidelberger Institut für Internationale Konfliktforschung – HIIK) has operationalized this continuum of conflict and has established the term “political conflict” for conflicts that take place outside of institutional regulatory mechanisms. The HIIK (2013b) defines political conflict as a

“positional difference regarding values relevant to a society – the conflict items – between at least two decisive and directly involved actors, which is being carried out using observable and interrelated conflict means that lie beyond established regulatory procedures and threaten a core state function or the order of international law, or hold out the prospect to do so.”

This definition, by binding its understanding of conflict to empirically observable conflict action, has a considerable advantage over the approaches cited above. Consequently, when talking about conflict, I employ the HIIK idea of political conflict, thereby concentrating on conflicts outside of regulatory processes. Again, it needs to be pointed out that (destructive) political conflicts can result in desirable social transformations (Bebbington 2012). Yet, from a policy point of view, it is central to discuss how governance can provide conditions for conflict to form or support its de-escalation in a social system that simultaneously allows for social change.

The following chapters will further extend my understanding of conflict and how it is applied to this study. My research will focus on grievances as a potential prerequisite or trigger for conflict. Consequently, I do not analyze conflict directly but through the theoretical lens of grievances.

2.3 The Resource-Conflict Nexus in Different Theoretical Perspectives

2.3.1 Resource Curse Debate

A central research interest in the social sciences has been the relationship between natural resources, economic development, and conflict. The most established line of investigation is the “resource curse theory”, originally engaging with the economic impacts of resource wealth.¹⁵ In the original understanding of the term from the British economist Richard M. Auty (1993)¹⁶, the resource curse refers to the phenomenon that countries with abundant natural resources are behind in growth.

¹⁵ Literature on the resource curse is substantial and sophisticated; that the present chapter can only give a focused summary of the findings. For a more extensive literature review see Ross (2004), Basedau and Lay (2005), Heinrich (2011), and Mildner, Lauster and Wodni (2011a, 2011c).

¹⁶ Terry Lynn Karl (1997) later coined the expression the “paradox of plenty”.

Only later did the interest of researchers shift to the question of the impact of natural resources on political institutions and conflict development.

While a research interest in the economic effects of abundant natural resources can be traced back to the 1950s¹⁷, the resource curse phenomenon gained public recognition only in the 1990s. Several econometric studies were published that pointed towards a global trend in which resource wealth hinders growth.¹⁸ The next generation of resource curse research shifted from the assessment of whether a link between resource abundance and growth existed to an analysis of the underlying causes, moving from large-N regression models to smaller comparative designs. Ross (1999, 298) classifies the different theories of the economic resource curse into four categories: (1) terms of trade decline¹⁹; (2) instability of commodity markets and macroeconomic vulnerability to external shocks²⁰; (3) missing linkages between the resource and non-resource sector; and (4) Dutch Disease²¹. Sachs and Warner (2001, 833) see the common denominator in a crowding-out effect, meaning that resource wealth triggers a neglect of other societal assets.²² Le Billon (2001, 567) draws the attention to a phenomenon that is also recurring in Bolivian history (see Chapter 4), namely the creation of debt based on forecasts of resource revenues that do not materialize because of unrealistic planning, sudden price declines, or corruption.

In the 1990s, the resource curse debate relocated to the academic fields of economics and political science. Existing economic arguments were extended by institutional effects and actor behavior,

¹⁷ For an overview of the early resource curse literature, see Ross (1999) as well as Nem Singh and Bourgooin (2013).

¹⁸ The comparative investigation by Harvard economists Sachs and Warner (1997) showed that countries with a high ratio of primary commodity exports to GDP grew less than countries without significant resources, in a 20 year study with a sample of 95 states. On the basis on these findings, Sachs and Warner (2001, 828) later came to the conclusion that “empirical support for the curse of natural resources is not bulletproof, but it is quite strong.” Yet, since the mechanisms explaining this phenomenon are multiple, the same authors resume that “just as we lack a universally accepted theory of economic growth in general, we lack a universally accepted theory of the curse of natural resources” (Sachs and Warner 2001, 835).

¹⁹ Sachs and Warner (2001, 835) stress that the abundance of natural resources creates a high price level which renders the country’s export sector uncompetitive. This, in turn, impedes export-oriented growth.

²⁰ Also referred to as the Prebisch-Singer-Hypothesis (Nem Singh and Bourgooin 2013, 24).

²¹ Dutch Disease refers to economic effects first described after gas deposits were found in the Dutch North Sea in the 1960s. The discovery of gas triggered an over concentration on the gas sector, a disregard for other economic branches, and a lack of economic diversification. This led to a high dependency on these resource revenues and an overvaluation of the currency, which affected the competitiveness of other economic sectors and finally culminating in an overall worse economic performance (Mildner, Lauster, and Wodni 2011b, 194–195).

²² Gylfason (2001) establishes a crowding out of human capital since a high demand for low skilled workers in the resource sector leads to decreasing investments in higher education. Sachs and Warner (2001, 833) name entrepreneurial activity and innovation as other targets of crowding-out effects. Basedau and Lay (2005, 13) show that the concentration on resource extraction often hinders the development of a manufacturing industry. Atkinson and Hamilton (2003) believe that impacts on growth are triggered by faulty macroeconomic and public spending policies which result in low genuine saving rates.

predominately investigating the question of why abundance of revenues could not be turned into lasting economic and social development. As Karl (1997, 6) puts it:

“economic effects like the Dutch Disease become outcomes of particular institutional arrangements and not simply causes of economic decline. The deeper explanation is revealed in the relentless interaction between a mode of economic development and the political and social institutions it fosters.”

Yet, in this socio-political line of argumentation, models are again multidimensional. Ross (1999, 298) classifies the arguments into three sociopolitical schools: (1) cognitive explanations establishing that resource income triggers irrational and self-centered actions of policy-makers; (2) societal approaches in which resources empower actors who favor growth-limiting policies²³; and (3) state-centered theories according to which resource abundance weakens institutions.

The most prominent state-centered approach is the “rentier state” theory which was first illustrated by Mahdavy (1970). The rentier state underscores that through high resource income policy makers become independent from tax collection and public opinion, which weakens their incentives to promote reform agendas. The state emerges as the dominant economic player that can use public income to oppress opposition, favor constituencies, build “white elephants”²⁴, and fulfill private ends. To satisfy voters, long-term economic stability is jeopardized to serve short-term investments that are initially envisioned to smooth social tensions (Mahdavy 1970; Auty 2001; Nem Singh and Bourgoquin 2013). This rentier mentality is more pronounced when political opposition endangers government power. A diversified economy and changes in the status quo are considered threats that could provide political opponents with alternative income sources (Mahdavy 1970; Le Billon 2001; Schure 2007). Basedau and Lay (2009) underline that the rentier state also has regime stabilizing effects and supports authoritarianism.

In the late 1990s, researchers finally became more interested in the resource violence link. Empirical results showed that civil wars and violence occurred more frequently in resource rich countries and

²³ Societal explanations for resource governance failures in Latin America employed in the 1970s and 1980s suggest that growth-impeding import subsidies financed through resource booms were not dropped by resource abundant states because of the pressure from powerful interest groups (Ross 1999, 308–312).

²⁴ “White elephant” is an idiomatic expression referring to a representative, yet non-proportional investment with no observable benefit but tremendous costs of production or operation. The term derives from the sacred status of the albino elephant in Southeast Asia. When such an elephant was given as a present to a loyal (or obnoxious) servant by the king, it often ruined the recipient through the costs of feeding and housing, while the receiver of the honor could not dispose of it given its sacred status.

lasted longer than in regions without significant natural commodities. Yet, it is also widely agreed that resources are hardly the only cause of conflict and that there is no single quality of resources that triggers conflict (Le Billon 2001; Bannon and Collier 2003; Mildner, Lauster, and Wodni 2011a; Basedau and Richter 2013; Frerks, Dietz, and van der Zaag 2014; Simmons 2016a). As Le Billon (2001, 563) summarizes:

“The availability *in nature* of any resource is thus not in itself a predictive indicator of conflict. Rather, the desires sparked by this availability as well as people’s needs (or greed), and the practices shaping the political economy of any resource can prove conflictual, with violence becoming the decisive means of arbitration.”

Based on this general understanding, the literature describes three central mechanisms of how resources can support conflict development. Mähler, Shabafrouz, and Basedau (2010) define them as: (1) opportunity; (2) motive; and (3) indirect mechanisms that occur on different state levels and as diverging subtypes. While in the more recent discussion, mechanisms are no longer rigidly separated between resource scarcity and abundance, it is necessary to point out that the debate was long divided over this issue. This resulted in two opposing schools of thought that saw either scarcity-based grievances or abundance-induced greed as conflict drivers (Mildner, Lauster, and Wodni 2011a). This discussion on the primary causes of conflict over resources is often summarized as “greed versus grievance” (Richert and Richter 2010, 13).

The opportunity or greed mechanism establishes that resource abundance offers an opportunity structure for looting and rebel capture of rents, thereby fostering conflict development. The debate emphasizes the significance of greed pull factors over grievance push factors. This school was initiated by the works of Collier and Hoeffler (1998, 2004) and Collier (2000)²⁵ and was further developed by Le Billon (2001), Ross (2004), Humphreys (2005), and others. Humphreys (2005) divides the greedy rebels mechanism into three variants: (1) domestic non-state actors loot resources outside of state structures; (2) resource wealth motivates rebels to capture the state; and (3) if

²⁵ The greed mechanism established by Collier and Hoeffler (1998, 2004) is non-linear. While the possession of a medium amount of resources (commodity exports of no more than 27 percent of GDP) increases the likelihood and duration of civil war, conflict in high abundance countries is less frequent. The authors explain this with the enhanced military spending possibilities of the government. Basedau and Lay (2009) establish a similar reversed u-shaped relationship that confirms the regime stabilizing characteristics of rentier states. Collier and Hoeffler later revised their position on the greed mechanism highlighting feasibility of rebellion over opportunity (Mildner, Lauster, and Wodni 2011c). For a critique of Collier and Hoeffler’s classic articles see De Soysa (2002), Fearon and Laitin (2003) as well as Schure (2007). Frequently challenged are the quality of the dataset, the lack of specifications of resource types and the use of primary commodity exports as a proxy for the scarcity or abundance of resources.

resources are geographically concentrated, they can provide a reason to secede for unsatisfied and suppressed groups.

Different authors highlight that the type and the location of a resource is decisive for the development of a greed conflict, meaning that each commodity in a specific environment produces contextual risks (Le Billon 2001; De Soysa 2002; Ross 2003; Basedau 2005; Basedau and Richter 2013). Yet, empirical results are tentative at best and hardly any predictions can be made as to what extent specific raw materials encourage certain types of conflict.²⁶ The greed debate has also been challenged for blaming conflict predominately on rebels while ignoring state and economic actors as well as local perspectives (Humphreys 2005; Schure 2007). Moreover, the use of rigid conflict definitions, often defined as a certain number of battle deaths per year, does not capture low intensity or nonviolent conflicts (Le Billon 2008; Mähler and Pierskalla 2014; Samset 2009). In particular, the focus on developments at the macro level in large-N studies underestimates the importance of underlying dynamics and the explanatory leverage of grievances (Simmons 2016b).

The idea that grievances are at the core of social movement development and conflict is long standing. When talking about grievances, it is important to understand that this term has been used with diverse meanings in a variety of theoretical debates. Social movement theories discuss grievances as motives behind the creation of a movement but also underline the importance of resource availability, (cultural) framing, and (political) opportunity structures as catalyzers for the emergence of movements based on grievances (Jasper 1998; Mähler and Pierskalla 2014; Simmons 2016b; Snow, Rochford, Worden, and Benford 1986; Snow and Soule 2010).²⁷ Conflict studies have stressed the importance of internal factors in conflict actors (such as frustration, cultural values, and perceived threats to livelihood) for the emergence of conflicts (Kriesberg and Dayton 2011, 27 et seqq.). Different authors highlight that grievances have taken a backseat in social movement and conflict theories (Della Porta 2015; Jasper 1998; Simmons 2014; Snow, Rochford, Worden, and

²⁶ Ross (2004) compared 14 empirical econometric studies on the topic and found diverging results for individual commodities. While oil made civil war more probable, lootable commodities (gems, drugs) did not have the same effect initially, but supported a prolongation of disputes. He did not identify a robust link between agricultural goods and war. De Soysa (2000, 2002) shows that an abundance of minerals is strongly connected to civil war while scarcity of both renewable and mineral resources is unrelated to it. Le Billon (2008) points out that lootable alluvial diamonds are more strongly connected to conflict than industrial mined kimberlitic deposits. According to Basedau and Lay (2009), oil dependence increases the risk of civil war onset, while a high level of oil abundance has the opposite effect. Samset (2009) summarizes that research could not provide clear evidence of a connection between resources other than oil and war. Ross (2012, 1) concludes that “the resource curse is overwhelmingly an oil curse.”

²⁷ See Jasper (1998, chap. 2) for a comprehensive summary of social movement studies and relevant findings.

Benford 1986). With the establishment of the resource mobilization approach in the 1970s, the conviction took hold that the process of movement creation, including the accessibility of resources, is more important than the underlying causes, leading to a continuous under-theorization of grievances in contemporary studies of social movements and conflict (Jasper 1998, chap. 2; Simmons 2014).²⁸

After years of neglect, the idea that grievances are significant motives in conflicts reemerged in the field of natural resources in opposition to the above outlined greed theory. Particularly, two research projects by Homer-Dixon (1991, 1994) and Bächler, Böge and Klötzli (1996) brought renewed attention to grievances and connected them to the newly introduced idea of “environmental conflicts” in the social sciences.²⁹ These early studies placed a specific focus on renewable resources (water, crops, biodiversity, etc.) and narrowed their analytical lens to how the scarcity of these resources can produce grievances as a conflict motive. In an extension of the discussion, Ohlsson (2000) developed the concept of livelihood conflicts, outlining that a loss of these crucial resources can have detrimental effects on local economic strategies, income, and subsistence. These grievance studies thus link scarcities of natural resources, which they consider – in a Neo-Malthusian spirit – to be a result of population growth, unequal resource distribution, and environmental degradation, directly to conflict escalation.

This monocausality perspective of the resource grievance debate and the focus on scarcities has been criticized for its rigidity (Engels and Dietz 2014; Humphreys 2005; Mähler and Pierskalla 2014;

²⁸ Jasper (1998, 9) emphasizes that most theories of social movements are concentrating solely on one explanatory strand and are thus not equipped to explain the complete range of protest forms. Nonetheless, “every new concept or variable is inflated into an entire theory or approach” (ibid., 20).

²⁹ The research of Thomas F. Homer-Dixon in the Canadian “Environmental Change and Acute Conflict Project (1991, 1994) is considered the starting point of the grievance debate in resource conflict literature. Homer-Dixon’s main argument is that environmental scarcities produce conflicts, especially in developing countries with weak institutions. Environmental scarcities can be triggered by three conditions; environmental change, population growth, and unequal distribution of commodities within the population. He identifies two ways in which conflict is produced. First, scarcities can create “resource capture”, meaning that powerful groups demand the scarce resources for themselves excluding other population segments. Second, a lack of resources might produce an “ingenuity gap”, meaning an indirect debilitation of the innovation potential of a society. Resource scarcities produce increasing demands on institutions while these institutions are less able to initiate measures of adaptation justly because of scarcities. Moreover, resource scarcities might lead to “ecological marginalization”, meaning that limited resource access triggers migration to fragile environments where increasing population causes further degradation. Homer-Dixon shows that countries faced with environmental scarcities are more likely to suffer from fragmentation and authoritarianism, favoring conflict forms that are domestic, persistent, and diffuse. For a critique of Homer-Dixon, see De Soysa (2002) and Mildner, Lauster and Wodni (2011a). The relationship between resource scarcities and conflict was also examined by the less widely known Swiss research group “Environment and Conflicts Project” headed by Bächler (1996), which drew more moderate conclusions, establishing that environmental degradation is necessary but not sufficient as a cause of conflict.

Mildner 2011). It overstates effects of environmental factors and population growth while ignoring the social dimension of grievances that result in resource conflicts (ibid.). In response to the Neo-Malthusian understanding of grievances and the notion of environmental conflict,³⁰ an intense alternative debate on the sociopolitical character of resource conflicts has unfolded. This line of research shows that environmental change is not the sole explanatory factor in the development of conflict-inducing grievances but rather a contributing cause within a multidimensional resource conflict link (Mildner, Lauster, and Wodni 2011a; Engels and Dietz 2014; Frerks, Dietz, and van der Zaag 2014).³¹ Grievances, as will be discussed in the following chapter, can also emerge from abundant resources. They develop over the impacts of resource exploitation on the environment, on national economies, as a result of changes to traditional ways of life, over the distribution of resource income, or in response to questions of participation and transparency (Humphreys 2005).

A third approach in explaining resource conflicts beyond greed and grievances relates to indirect economic and institutional effects. This idea points to the greater explanatory power of resource dependence over resource abundance for conflict development.³² The weak state mechanism argument is closely connected to the genuine resource curse debate as well as the rentier state model. This claim is based on the idea that resource dependent societies are faced with specific economic and governance challenges which increase their susceptibility to conflict. Specifically, countries with weak and corrupt institutions at the beginning of resource extraction are vulnerable to these effects, when the government becomes the central conflict actor (Humphreys 2005; Le Billon 2008; Basedau and Lay 2009; Mähler, Shabafrouz, and Basedau 2010; Ross 2012). Moreover, ownership structures and property rights regimes are decisive (Basedau 2005; Mähler, Shabafrouz, and Strüver 2011). Humphreys (2005) clarifies that these indirect effects are particularly challenging for rural societies that have not gone through an industrialization process. As Basedau and Lay (2005, 20) point out, economic and institutional decline is often a “root cause” of violence, while natural resources are aggravating, triggering, or prolonging factors for conflict. The weak state mechanism

³⁰ Critical scholars prefer other terms like “socio-ecological conflicts”, “ecological-distributional conflict” or, as Dietz and Engels (2014, 3) suggest, “conflicts over nature”.

³¹ The environmental scarcity debate has regained importance in the light of an increased interest in the effects of climate change on conflict. This spurred research on the links between conflict and climate factors such as rainfall patterns and resulting floods or droughts, rising sea levels and land degradation (Scheffran, Brzoska, Kominek, Link, et al. 2012).

³² Ross (2006), as well as Basedau and Lay (2009), criticize quantitative studies for equating resource abundance and dependence, neglecting a very relevant differentiation for variable operationalization.

has also been challenged for being too centered on the state while ignoring the importance of informal and non-governmental organizations (Frerks, Dietz, and van der Zaag 2014, 18).

While literature on the resource curse has become extensive and sophisticated, consensus is lacking on how exactly resources and conflict are linked. It is widely established that conflicts are not purely driven by resource possession; they are a product of social and political processes. In more recent literature (Basedau and Richter 2013; Frerks, Dietz, and van der Zaag 2014; Koubi and Böhmelt 2014), the somewhat artificial separation between resource abundance and scarcity has been abandoned and it is acknowledged that the mechanisms interact. For example, the exploitation of abundant natural resources can increase pressure on scarce environmental goods, so that resource wealth is simultaneously motive and opportunity for conflict.

Conflicts over resources develop around different aspects of global resource politics, on different levels of government, and through multidimensional mechanisms which are only insufficiently understood. The wide variety of contexts underscores the problem of establishing general causal models. Research interest has consequently started to focus on mid-range theories explaining the resource conflict link for certain resources and conflict types on different state levels, in contrasting regions and ownership structures. Case studies are extremely valuable for establishing mid-range mechanisms linking resources to conflict (Frerks, Dietz, and van der Zaag 2014, 22). In this context, debates on the influences of grievances in the facilitation of conflicts reemerged. For the first time, these intellectual discussions have begun to consider the perception of local actors and their interpretations of resource projects alongside scarcities and structural conditions.

2.3.2 Resource Grievances in Political Ecology and Neo-Extractivism

When looking at the greed and grievance debate in the Latin American context, the inapplicability of the old dichotomy becomes clear. Neither the rebel capture of rents (apart from Colombia), nor (absolute) resource scarcities have been central to resource conflicts. Conflicts over resources in the region have not been as violent as the civil wars which occurred in some African countries and which inspired the greed and the scarcity based grievance discussions in the mid-1990s (Sinnott, Nash, and Torre 2010, 25). In Latin America, grievances emerged more frequently over the impacts of extraction on local environments (thereby also endangering scarce resources such as water), over revenue distribution, and over the question of who should manage resource exploitation (*ibid.*, 51

et seq.). This supported the development of large social mobilizations at the beginning of the new millennium, including the Water and Gas Wars in Bolivia.

Emerging from the outlined shortcomings of the greed vs. grievance debate, the encompassing approach taken by Humphreys (2005) provides an important analytical extension of the grievance concept to analyze resource-based conflict development outside of civil war contexts. Humphreys (ibid.) emphasizes the importance of separating grievances from a sole discussion of scarcities and tested four variants of the grievance mechanism. The first mechanism outlines that grievances emerge when resource abundant countries experience (in general) inequalities in wealth distribution, as different sectors of the economy expand at different rates in the development process. The second mechanism is based on the hypothesis that resource dependent countries are more vulnerable to terms of trade shocks. Both mechanisms can result in grievances in the population groups that are affected by the resulting low and declining income. While these developments are medium to long-term, the extraction process can directly result in grievances for local actors through environmental and social effects and when the resource income is perceived as unjustly distributed compared to other incomes in the society. Grievances over the exploitation of resources thus provide another important angle to study the emergence of resource conflicts, particularly on the local level. With his genuine interest in the perceptions of local actors, Humphreys (ibid.) brings a new and important dimension to the grievance debate. In earlier grievance analyses in conflict literature, the sole focus was placed on scarcities and structural conditions not on the perception of these threats by the involved stakeholders.³³

This links back to the important contributions of the political ecology school³⁴ to the grievances debate. The political ecology approach assigns explanatory power to the diverging interests and values that the involved social actors connect with the use and control of natural resources. This school of thought places a specific emphasis on historically and socially constructed hierarchies and

³³ Stakeholder is “any group of people, organized or unorganized, who share a common interest or stake in a particular issue or system” (Grimble and Wellard 1997, 175).

³⁴ The political ecology school emerged in the 1970s and 1980s, mostly in critical geography and anthropology. It united critical theorists who positioned themselves in opposition to environmental research perspectives that focus on scarcity and viewed environmental crises and conflicts foremost as growth limitations or tragedy of the commons³⁴ (Wissen 2011; Engels and Dietz 2014; Wissen 2015). It is necessary to understand political ecology as a conceptual toolbox (not a theory) that approaches resource extraction and environmental change in the light of “social relations of power and domination” (Wissen 2015, 16). Wissen speaks of an analysis of “societal nature relations”, analyzing the “inherently political character of environmental problems” (2015, 17). The political ecology debate thereby links back to research critical of capitalism and critical development theories as well as politics of scale in radical geography.

unequal power relations that influence the distribution of benefits and costs (Svampa 2013; Engels and Dietz 2014). The institutional conditions created and transformed by these power constellations influence if and where grievances emerge and how they are interpreted. Central to political ecology studies is the neo-Marxist argument of an “accumulation by dispossession”, which the geographer David Harvey (2004) introduced as an important explanatory concept for the emergence of social movements based on grievances.

Accumulation by dispossession embodies the idea of a “new imperialism” of neoliberal policies that support the concentration of power and riches with a few individuals while dispossessing the great majority of their share. Accumulation processes are thereby interconnected between spaces, meaning that they do not only occur between the rich and the poor of one society but in the globalized capitalist system they also arise between industrialized nations at the core and the resource providers in the periphery (Harvey 2004; compare also: Wallerstein 1976). According to Harvey (ibid.), four strategies are employed to dispossess local actors and poorer societies in general of their wealth: (1) the privatization or “commodification” of public goods; (2) the financialization or the private control of money flows; (3) the artificial creation of economic crises to drive poorer countries into privatization programs; and (4) state redistributions of rents and tax money (from resource exploitation) to the wealthy. Grievances that result from these accumulation processes often surpass a concrete resource project and initiate political struggles over fundamental issues such as political participation, democratic institutions, and social inclusion (Engels and Dietz 2014).

Harvey’s concept was particularly well received by Latin American scholars and in international Latin American studies. Resistance, mobilizations and recent political change in the region have frequently been interpreted as an expression of public discontent with globalized processes of accumulation and dispossession (Anlauf 2014; Burchardt, Dietz, and Öhlschläger 2013; Spronk and Webber 2007). The Uruguayan scholar Eduardo Gudynas, however, criticizes Harvey’s concept as “friendly colonialism” and as an insufficient explanation for Latin American realities (Gudynas 2015b; Rosa Luxemburg Foundation 2015).

The political and economic situations in Latin America and in Bolivia in particular were shaped by the debt crisis of the 1980s and the (neoliberal) structural adjustment policies adopted in response. This will be discussed in more detail in Chapter 4. After the reestablishment of democracy in 1982, prices collapsed and Bolivia went into an extensive economic crisis. In the spirit of the time, the

World Bank and the IMF tied credit lines to important structural adjustment measures and the privatization of public companies. Bolivia became an experimentation ground for “shock therapy”, which was implemented all over Latin America, and has frequently been interpreted as accumulation by dispossession in Harvey’s sense. The resulting social dislocations were one important factor that supported the rise of a new generation of political representatives in the region since the late 1990s (Farthing and Kohl 2014).

As will be further discussed in Chapter 4, the Bolivian MAS government is considered part of the called “pink tide” or “new left”³⁵ in Latin America. These terms group together governments that came to power in different countries of the region after 1998 and auto-define as “left”, “socialist”, or “progressive” (Enríquez 2013). Joint characteristics of these heterogeneous political movements are that they promised important social changes, particularly for the poor, as well as alternatives to neoliberal economic policies. Good economic conditions helped many “pink tide” governments implement cash transfer programs, which in Bolivia supported an important reduction in poverty levels. These popular initiatives were, however, strongly co-financed by natural resource extraction. Between 2002 and 2008, global prices for minerals and metals rose by 285 percent (Mildner, Lauster, and Wodni 2011a, 7), which supported an expansion of resource exploitation in the region.³⁶

While Latin America has gone through different periods of extensive natural resource exploitation, various scholars underline that the current situation is different because of the changed political setting in which these developments are taking place. Scholars have termed this an era of “neo-extractivism” (Bebbington 2009; Svampa 2012, 2013; Burchardt and Dietz 2013; Gudynas 2012,

³⁵ “New left” is used in comparison to the “old” Marxist left of the 1950s to 1970s. When referring to the “new left” in Latin America, this relates to an auto-definition of the respective governments as part of the left or progressive movement. Yet, large political differences exist between these governments, which are grouped along social-democratic and populist lines (or, as Farthing and Kohl (2014, 3) criticize, are divided into “good” and “bad” left). The term “pink tide” was coined by the New York Times reporter Larry Rohter when referring to the political changes in Latin America as “pink” and thereby potentially more moderate than a “red” communist movement (McNickel 2005). Since 2015, election results (Argentina, Venezuela, lost referendum in Bolivia etc.) point to a crisis and the potential end of the pink tide. Conservative governments have regained strength in several Latin American countries.

³⁶ According to Schmalz (2013), there are three central explanations for the resource boom which supported the rise of neo-extractivism in Latin America: (1) the resource demand from China; (2) the potential or at least feared scarcity of important resources; and (3) the transnationalization of raw material production under neoliberal governments in the 1980s and 1990s. Other authors challenge the over-concentration on China as an explanatory factor. The Bolivian economist Jordan underlined in an interview with me (7.4.2016) that the price increases should rather be interpreted as a result of speculations with globally traded resources.

2013, 2015a). Gudynas (2015a, 13) defines extractivism as the exploitation of natural resources in great scale or with high intensity with the primary target of exportation. Yet, in comparison to earlier cycles of resource extraction, which were dominated by private multinational companies, under “pink tide” governments the role of the state and the use of rents have seen important changes. State institutions were strengthened; state-owned companies intensified their operations or were newly founded, while rents were increasingly invested into social programs and cash benefits. The resource-rich state thus no longer functioned as a rentier body for an elite minority but as a compensatory and redistribution scheme for a poor majority (Gudynas 2013, 41). Bolivia is an often cited example for these developments (Bebbington 2009; Gudynas 2015a; Radhuber 2013; Svampa 2013), as both the role of public companies, particularly in gas exploitation, was strengthened while various social programs, financed by increasing resource income, were introduced (compare Chapter 4).

Research on this new extractivism underlines that publicly organized resource exploitation has equally resulted in impacts for local livelihoods (Bebbington 2009; Svampa 2012, 2013; Burchardt and Dietz 2013; Gudynas 2012, 2013, 2015a). Neo-extractive expansions, like earlier forms of extractivism, continues to support a high degree of dependence on primary commodities without targeting economic diversification, “call[ing] into question the extent to which Latin American governments claiming progressive and post-neoliberal agendas are in fact delivering on these agendas” (Bebbington 2012, xv). The above introduced concept from Harvey is used to describe the continued support of “pink tide” governments of globalized models of resource valorization by supporting accumulation by international actors and national elites while dispossessing place-based actors of their rights and assets (Anlauf 2014; Damonte 2014). This contradiction in particular, neo-extractivism research argues, drives increasing local resistance against resource projects in Latin America (Bebbington 2012; Gudynas 2015a; Svampa 2012). At the same time, due to a larger and better organized civil society than in any prior mining cycle, local communities have more potential to challenge extractivist activities and increase the visibility of their grievances (Bebbington 2012; Radhuber 2013; Svampa 2013).

Neo-extractivism has also received important criticism. Revette (2017, 151) highlights that the focus on macro perspectives fails to acknowledge the relevance of micro level dynamics of conflict development. She further sustains that conflicts have often been limited to a study of groups that are in favor of or against extractivism (ibid., 152). Wolff (2017) similarly criticizes the neo-

extractivism debate for reducing resource conflicts under “pink tide” governments to contestations of extractivism as a development model. This is theoretically unsatisfactory and does not consider the extensive research on resource conflicts introduced in the previous chapters or the debates within social movement studies.

Conflicts in the resource sector have multiple causes; they can link back to greed, to different kinds of grievances, to dimensions of statehood and government capabilities, and are not always an outright rejection of resource extraction as a development model. This also challenges the use of Harvey’s concept of “accumulation by dispossession” for the present Bolivian reality. As will be further discussed in Chapter 4, the MAS governance approach might be flawed but it is hardly neoliberal. Dispossession on the local level is analytically blurry, as grievances and resulting conflicts relate to very different issues that can be dispossessed (e. g. land, rents, livelihood) or do not engage with dispossession at all but with contested governance practices and arrangements (Wolff 2017). Moreover, the concept of neo-extractivism reduces resource conflicts to a vertical antagonism between a state or a transnational company and the local communities, while conflicts are multi-dimensional and often take place horizontally between or among local communities, civil society, and state institutions (Bebbington 2012, 16).

Neo-extractivism is a valuable regional concept because it underscores the role of the state in resource governance in Latin America. Moreover, both political ecology in general, and neo-extractivism specifically emphasize the importance of the perception of resource exploitation by local actors as a central factor for conflict to emerge. This further supports the use of a grievance bound analytical perspective on resource conflicts in the region. Nonetheless, to understand resource grievances on the local level, a resource governance lens is analytically more promising, as it engages with the different dimensions of a resource project and assesses the diverse issues that can be contested beyond the development model as such. Adapting and sharpening an analytical understanding of grievances in relation to governance will aid in the examination of the development of resource conflicts in Latin American extractivism. Based on the outlined debates, I will introduce my understanding of meaningful grievances in the following chapter.

2.3.3 Understanding the Meaning of Grievances in Resource Conflicts

I have outlined the different theoretical schools with varying approaches to the link between resources and conflict. The resource curse literature has outlined three pathways through which conflict development in resource abundant countries is supported; greed, grievances, and conflict vulnerability produced through economic and sociopolitical challenges of a resource dependent development model. The different resource curse frameworks have shortcomings, such as tendencies to operationalize conflict as civil war, overstate the influence of certain actor groups, propose inflexible institutional agendas to confront the “curse”, and ignore local perspectives.

Even so, the grievance concept in the resource curse toolbox proved a promising angle to study resource conflicts, while it needs to be advanced and extended. Political ecology scholars such as Dietz and Engels (2014) and grievance researchers such as Humphreys (2005) have challenged the rigid grievance understanding in early resource curse literature which limits grievances to resource scarcities as motives for conflicts. While political ecology attributes considerable explanatory value for grievance emergence and interpretation to power imbalances, the global capitalist system and neoliberal market reforms, the neo-extractivism debate adds a Latin American regional context. Neo-extractivism scholars emphasize that progressive governments in the region, while putting resource money to use in combating poverty, continue to support primary commodity exploitation and processes of accumulation. These neoliberal continuities create grievances, particularly for local actors who suffer from the direct impacts on the ground. Frequently, resource conflicts are equated with resistance against extractivism as a development model. These debates, however, neglect that other aspects of resource projects can equally create grievances and unnecessarily limit our understanding of causes and effects of grievances.

While these discussions have thus helped sharpen our understanding of the modes of operation of grievances in resource conflicts, they still run short of providing a usable grievance framework. What remains unanswered is in which circumstances do grievances produce social movements or escalate towards more visible stages of social conflict. Social movement studies have challenged the omnipresence of grievances which has confined the concept to a backseat in the study of conflicts, as consensus emerged that grievances alone cannot explain the emergence or disintegration of social movements (Jasper 1998, xi).

At the same time, numerous scholars (Humphreys 2005; Jasper 1998; Revette 2017; Simmons 2014, 2016b; Snow, Rochford, Worden, and Benford 1986) argue that local perspectives have been undertheorized; how people “make sense of the world” (Jasper 1998, 10) has been neglected in the study of social movements and conflicts. In light of this assessment of a disregard for local experiences, the sociologist Erica Simmons (2014, 2016b) argues to bring the grievance concept back into the assessment of resource conflicts. With her concept of “meaningful grievances”, she provides an important extension for the usability of the analytical grievance lens. Simmons, who has studied resource conflicts in Latin America, sustains that we need to interpret grievances and their potential to support social movement formation on the basis of local meaning-making. Meanings are local interpretations and perceptions of a resource or resource project based on cultural and contextual conditions such as heritage, life situation, and past experiences. These factors, she argues impact on the formation of grievances.³⁷ When considering these local meanings and interpretations as a core feature of grievances, it is promising to bring the grievance concept back into the assessment of resource conflicts – especially when studying less visible or less violent forms of conflict.

Simmons (2016b, 191–92) takes up a central critique of the early grievance literature: “we are, indeed, likely to find grievances everywhere we look. But only some grievances will take on the meanings that create the conditions of possibility for political resistance.” Grievances are not confined to scarcities but involve all aspects of a (resource) project that a group or social movement is concerned about and wants to change. Thereby, grievances are not solely material and include “not just objectively identifiable conditions but social experiences” (ibid., 9). At the same time, the framing of a resource project is relevant; how it is presented by those who implement it (or by those who reject it), how it is linked to existing values and experiences, and how this interacts with meaning-making. Similarly, the wider socio-political context is important for grievances to develop collective meanings.

A frequent argument in social movement research is that there are different severities of grievances with different qualities to trigger contentious action (Jasper 1998; Snow, Rochford, Worden, and Benford 1986; Zald 1991). Zald (1991, 349) proposes a differentiation between hard grievances, when a (potential) change of livelihood affects a population majority, and soft grievances, which

³⁷ “Meaning” thus goes beyond the idea of “culture” from social movement studies, which Jasper (1998, 12 et seqq.) defines as “cognitive beliefs, emotional responses and moral evaluations”.

have less of an impact and are consequently less likely to stir conflict action outside of regulated processes. Simmons (2014, 522–523) challenges this differentiation for not sufficiently considering the meanings awarded to certain issues in the particular case. She argues that even the same “hard” grievances can resonate differently depending on the interpretation of a grievance by local actors in the existing conditions. For example, a price increase in a basic food product impacts on the livelihoods of a great majority of a local population and could be considered a hard grievance. Yet, a mobilization around this grievance might depend on whether the cause of price increase is crop failure or whether it is the result of (or framed as the result of) market speculations (Simmons 2016a). The analysis of these meanings that connect to a resource can thus support our understanding of why certain grievances resonate in a certain context and moment (Simmons 2014, 519).

In her studies of the Bolivian Water War in Cochabamba in 2000 (see Chapter 4.2) and the Tortilla Protests in Mexico in 2007, Simmons (2016a, 2016b) describes “subsistence threats” as a grievance type. She argues that socioeconomic pressures on a subsistence good³⁸ that endanger local livelihoods can produce meanings in grievances deep enough to result in conflict. In the case of water in Cochabamba, these threats resonated so strongly because of the culturally imbued local relationship with water. This supported the formation of an overarching communal protest front against water privatization that surpassed existing social and cultural cleavages (ibid.). Thereby, the perceived threats to the subsistence good water which had enduring cultural and social significance for the local population merged with the wider resistance frame against market-oriented neoliberal policy reforms in Bolivia at that time (ibid.).³⁹ Such a set-up then produced what Jasper (1998, 106) calls “moral shock” or what Snow and Soule (2010, 24) term “mobilizing grievances”, circumstances that are able to create unity around a collectively felt condition resulting in mobilizations. As Simmons (2014, 514) highlights:

“By understanding grievances as meaningladen, we can better explain why political opportunities are understood as such, why mobilizing structures are available to particular movements in particular moments, and why some frames, but not others, can bring large groups to the streets.”

³⁸ A subsistence good is defined as necessary for survival while there is actually or perceived no substitution available and the community has a special relationship with the good (Simmons 2016b, 15).

³⁹ Della Porta (2015, 6–8) similarly highlights the importance of a “legitimacy crisis of / in a late neoliberal system which takes the form of a crisis of responsibility” for recent developments of social movements, especially in austerity protests in Latin America.

Taking the meanings assigned to grievances into account supports the validity of conflict analysis. In conflict studies of the 1990s, grievances were reduced to individually measurable indicators. This has reinforced the assumption that grievances do not matter in conflict development (Collier and Hoeffler 2004; Fearon and Laitin 2003); however, analyzing them in context highlights their importance in shaping contentious action (Della Porta 2015; Humphreys 2005; Mähler and Pierskalla 2014; Simmons 2016b; Snow, Rochford, Worden, and Benford 1986).

While Simmons (2016b) has argued this for subsistence threats in neoliberal market reforms, I hypothesize that, beyond a neoliberal political setting, e. g. in the context of Bolivian “neo-extractivism”, perceptions of resource projects and the meanings awarded to resources can lead to grievances that are conducive of social action. While lithium does not provide the kind of subsistence threat Simmons (*ibid.*) describes for corn and water, it is equally relevant to ask which meanings people connect with lithium in the Salar de Uyuni, how lithium industrialization is framed by the government and non-government actors, how the local populations consequently perceive the policies implemented for lithium industrialization, and whether or not their expectations are fulfilled. It is particularly relevant to analyze whether these perceptions can create a broader community as a basis of a resistance movement. An investigation of grievance meanings can reveal these mechanisms and develop our understanding of the perceptions and group dynamics that drive resistance against lithium specifically and social conflict in general.

Engaging with lithium can thereby also help to refine our understanding of different grievance categories. While it is not the severity of a grievance that a-priori defines the likelihood of conflict emergence, I concord with Jasper (1998) that the content of a grievance impacts on the form a potential conflict can take. He underlines that different grievance contents are likely to produce diverging types of social movements (*ibid.*, 285 et seqq). Environmental grievances tend to support the emergence of broader movements with a universal rhetoric, while economic grievances are more prone to diffuse resistances because of their nature as zero sum games (*ibid.*). Consequently, I ground my analysis of the lithium case in different grievance categories based on their content: economic grievances form around the interpretation of economic conditions and the distribution of revenues; livelihood grievances are concerned with (potential) impacts on local ways of life including environmental externalities; while political grievances develop around political conditions and governance.

In a second step, I analyze the meanings that are awarded to these different grievances and how this resonates in the particular case context. I believe that we can further differentiate local interpretations or the meanings beyond grievance content in different types. The subsistence threat identified by Simmons is one variety. Literature has, however, identified other forms of grievance interpretation, while not naming them as such. The political ecology school sees an important trigger of conflict in the perception of power imbalances (Engels and Dietz 2014; Svampa 2013; see Wissen 2011), which I would consider a type of meaning-making in grievances. Also, frustrated expectations are a concept frequently used in social movement studies. Local meanings and interpretations of grievances, I argue, often emerge from these perceptions of unfulfilled expectations. These different interpretative types of meaning-making impact the evaluation of existing economic, political or livelihood grievances.

Next to the content of grievances, Simmons meaningful grievance concept also awards significance to the context of grievance interpretation, in her case, the neoliberal political setting of market-oriented reforms. When looking at the context of meaning-making, the expansion of extractive initiatives in Latin America becomes equally relevant as do concepts of the rentier state and the resource curse that influence policy decisions. Governance thus becomes an important component of the interpretative context of a resource project in which grievances develop that resonate collectively and support conflict development. At the same time, governance instruments provide or limit the political opportunity context to mobilize against a resource project. In recent years, research has therefore turned its attention to policy making and governance in the resource sector (Humphreys 2005; Schure 2007; Basedau and Lay 2009; Sinnott, Nash, and Torre 2010; Tänzler and Westerkamp 2010; Mähler, Shabafrouz, and Strüver 2011; Mildner, Lauster, and Wodni 2011a; Frerks, Dietz, and van der Zaag 2014). As a last puzzle stone for the theoretical underpinning of the present research, I will discuss the findings of the governance literature on the link between resources, meaningful grievances and conflict.

2.4 Governance Research

2.4.1 Introduction to the Research on Resource Governance

“It needs to be emphasized that it is not the existence of natural wealth as such that seems to be the problem, but rather the failure of public authorities to avert the dangers that accompany the gifts of nature. Good policies can turn abundant natural resource riches into an unmitigated blessing” (Gylfason 2001, 3).

This quote expresses the viewpoint of many donors on the brink of the new millennium. The 1990s were marked by violent conflicts connected to natural resource wealth (particularly in Africa) and many experts identified governance as a leverage for change “leading to the axiom that certain types of institutional reforms are necessary to escape the curse” (Bourgouin and Haarstad 2013, 87). Especially in reaction to neo-Malthusian arguments of the early grievance debate, institutional research relating scarcities, environmental degradation, and conflict to regulatory and institutional failures (corruption, asymmetric information, deficient legislation) intensified (Mildner, Lauster, and Wodni 2011a, 53 et seqq.). Resource governance scholars assumed that the resource curse is avoidable through good policy making (Schure 2007; United Nations Environmental Programme 2009; Sinnott, Nash, and Torre 2010; Mildner, Lauster, and Wodni 2011a, 7–8; Frerks, Dietz, and van der Zaag 2014; Acheson 2006, 118).

Yet, while the normative claim for good resource governance is widely established, it is less clear what the concept concretely entails and how “bad” governance influences conflict development (Schure 2007; Mähler, Shabafrouz, and Strüver 2011; Mildner, Lauster, and Wodni 2011a). Bourgouin and Haarstad (2013, 93) criticize “the good governance paradigm (...) [as] an idealized form of institutional structures, raising questions as to who or what sets the standards for deeming a governance regime as ‘good’ or ‘bad’.” Consequently, before expanding on the state of research on the link between governance and conflict, it is necessary to determine what is understood by (good) resource governance.

The term “governance” has, in its long political science history, been defined in many, sometimes contradictory, ways.⁴⁰ In a broad understanding, it entails the interactions of government institutions and citizens involving decision-making and implementation based on the use of power.

⁴⁰ For an overview of working definitions of governance from different research institutions and international organizations, see Moore, Zhang, and Triraganon (2011, 103–04).

The present study's understanding of resource governance starts out from Graham, Amos and Plumptre (2003, ii) who define governance as "interactions among structures, processes and traditions that determine how power and responsibilities are exercised, how decisions are taken, and how citizens or other stakeholders have their say." Consequently, governance does not relate to government alone but emphasizes dynamics between different stakeholders such as business actors, international organizations, local population, indigenous peoples, and civil society. In relation to natural resources, Moore, Zhang, and Triraganon (2011, 105) extend the perspective and define governance as

"the interaction of statutory and customary laws and formal and informal institutions, and processes through which a society exercises powers and responsibilities to make and implement decisions affecting natural resources and natural resource users and to hold decision-makers, implementers and natural resource users accountable."

This definition, while an important starting point, outlines a very wide approach towards natural resource governance that is difficult to operationalize. Schure (2007, 25) describes natural resource governance more concisely as "the way in which political, economic, and social processes and institutions are regulating and managing the use of natural resources and the redistribution of costs and revenues deriving from those resources." Her definition, which I will adopt in this research, does not only highlight the centrality of the distribution of rents and externalities between different stakeholders (discussed in the subsequent chapters) but underlines that governance goes beyond a mere management of a resource project.

While the terms resource management and resource governance are often used interchangeably in the literature, they are not the same thing. Resource governance refers to a much broader idea which goes beyond the "management" of the individual project to include aspects such institution building and relationships between involved actors. Governance refers to the complete value-adding chain for resources from the negotiation of relevant policies, the exploration of resource deposits to the allocation of rents between the different stakeholders (Moore, Zhang, and Triraganon 2011; Lujala and Rustad 2012). Resource management only relates to the operational implementation of a concrete project. Consequently, it makes sense to speak of the public or private management of a resource project, when referring to the entity that implements an initiative operationally on the ground. Although a project might be privately managed, governance always entails other stakeholders as well. Taxing regulations and legal guidelines are generally developed by the government who is thus involved even in privately managed projects.

Resource governance takes place in complex and dynamic negotiation structures. Individual actor groups no longer possess the power to steer complex exploitation projects alone but depend on negotiation and cooperation (Lockwood, Davidson, Curtis, Stratford, et al. 2010, 987). In many countries, national governments have lost dominance in resource management in the light of power shifts towards international companies and increasing demands of local governments and non-government actors. In various Latin American countries, however, these tendencies are currently being reversed by post-neoliberal governments. Against this increasingly complex resource governance panorama, involving many stakeholders, their interests and perceptions, it is problematic to propose “good governance” as a general solution strategy to multiple problems a resource project can have, especially as the term is “relatively empty of explanatory value, and is not so much an explanatory device as a descriptive notion” (Bourgouin and Haarstad 2013, 95). Nonetheless, it is frequently referred to good governance as a response to the resource curse both by donors and researchers.

The “good governance” concept emerged in the 1990s and was promoted by the Bretton Woods institutions, the World Bank, and the IMF, as part of the already outlined far-reaching structural adjustment programs in the Global South.⁴¹ While a clear definition of the term is lacking, in a general understanding good governance refers to institutional reforms and best practices in achieving sound, transparent, inclusive, and efficient administrative processes. Yet, the good governance agenda, which was developed only in reference to the Global North, was also employed to implement neoliberal market reforms and initiate, as the political ecology school would claim, a process of accumulation by dispossession. The good governance paradigm thus promoted an assessment of resource governance in developing countries against foreign standards despite cultural, historic, and social differences (Moore, Zhang, and Triraganon 2011; Nem Singh and Bourgouin 2013; Bourgouin and Haarstad 2013). In result, the good governance debate “allowed [for] a depolarization of the development process, turning fundamentally political issues into objective judgments on what is ‘good’ and ‘bad’” (Bourgouin and Haarstad 2013, 90).

An engagement with term “governance” brings me to some preliminary conclusions. First, a holistic understanding of resource governance necessitates the consideration not only of formal and informal institutions and social processes that shape the value-adding-chain for resources, but also

⁴¹ Thereby, the term “good governance” often only replaced the highly unpopular concept of “structural adjustment” in discourse, while entailing similar reform proposals (Bourgouin and Haarstad 2013).

an engagement with how these institutions and processes emerged. Second, governance is central to the political and institutional context in which grievances over extractive projects develop and are locally interpreted. Consequently, an analysis of mobilization around grievances needs to engage with the local perceptions of governance arrangements and decisions. Third, in the ongoing governance debate, the notion of “good” governance is undetermined and flexible, depending on the political mind frame and context at the time of the discussion. Considering the ambiguous use of the concept, particularly in Latin America, “good” resource governance cannot be equated with resource governance that minimizes conflict. Reform agendas related to a neoliberal interpretation of “good governance” have in the past supported a disregard for local actors in resource projects, exacerbating grievances, sparking community-based resistance movements and social conflict (Engels and Dietz 2014). Therefore, it is necessary to depart from the idea of normatively defined “good governance”. Rather, the governance concept should be used as an analytical tool. Thereby, I seek to define the different institutional arrangements and practices entailed in governance as what I call governance dimensions. In the following, I will discuss the research findings on different aspects or dimensions of governance and their interrelationship with conflict through the analytical lens of the grievance debate.

2.4.2 Grievance Dimensions of Resource Governance

The resource curse literature has applied a macro perspective to the study of resource governance and conflict, debating at length the macroeconomic and institutional challenges that resource abundant countries face. Mostly, it is assumed that short-term policy choices negatively affect institutional development and lead to long-term economic decline. This simultaneously limits governance capacities. The outlined institutional arguments link back to the first two dimensions of Humphrey’s (2005) grievance theory that terms-of-trade shocks and economic inequalities resulting from resource abundance can support grievance development. The political economy literature has, in this context, engaged with the question of whether the (vague) normative goals of managing extractives well can be achieved better through private, public, or communal ownership of a resource project.

While these institutional dimensions of resource governance have thus proven important for the analysis of resource conflict development, they are insufficient for a complete understanding of conflict development on the local level. These macro explanations are ignorant of the perceptions

of local actors, social structures, and the organization of social interests that are the basis for institutional development. On the local level, mid- to long-term economic effects, institutional structures, and the weak state mechanism can only be considered supporting contextual factors. As I have outlined above, the direct impacts of extraction are more relevant to the local interpretation of a resource projects. A central problem described in multiple case studies is:

“(...) the rise of extractive industries (...) is in fact delivering productive transformations alongside exclusion, socio-environmental disruption and disquiet. It is the fear and experience of this second scenario that seems to drive so much conflict – as people feel that the Faustian pact is, indeed leading many of them to lose out and, in the most extreme cases, forfeit their souls” (Bebbington 2012, 19–20).

Grievance escalation thereby becomes a question of societal inequalities and power plays which from a resource governance point of view is expressed in the degree to which local stakeholders participate in decisions, whether their concerns are considered, and whether their rights are respected in a resource project (Barvinck, Pellegrini, and Mostert 2014; Bebbington 2012; Engels and Dietz 2014; Mähler and Pierskalla 2014).

Consequently, this chapter will discuss four dimensions of governance, based on the literature review and case studies from Latin America and beyond⁴², as the most relevant aspects of grievance development on the local level. These dimensions are (1) resource ownership, (2) revenue management, (3) externality management, and (4) stakeholder inclusion. Stakeholder inclusion itself is multifaceted, including the consideration of stakeholder perceptions and ideas, respect for their rights (particularly in relation to property), as well as questions of inequality and power relations in the extractive society. Moreover, it is connected to the broad discussion on political opportunity in social movement studies (Della Porta 2015; compare Jasper 1998).

⁴² See, for example, Barvinck, Pellegrini and Mostert (2014) on resource conflicts in the Global South; case studies of Sub-Saharan Africa from Basedau and Mehler (2005); case studies from Latin America from Bebbington et al. (2012); case studies on agrofuel production and land grabs from Dietz, Engels, Pye and Brunnengraber (2015); Hall (2011) on land conflicts in Southeast Asia; Benjaminsen and Ba (2009) on conflicts between farmers and herders in Mali; Schilling-Vacaflor as well as Humphreys Bebbington and Bebbington (2010) on gas exploitation in Bolivia; Simmons (2016a, 2016b) on the Water War in Cochabamba and the Tortilla Protests in Mexico; and Pellegrini and Ribera Arismendi (2012) on oil exploration in Bolivia.

Resource Ownership and Management of Resource Projects

Since the 1950s, when investigations into the effects of natural resource abundance first became a central research topic in economics and political science, scholars have been concerned with the question of whether profitable and sustainable management of resource projects can be achieved best through private ownership, state control, communal structures, or hybrid regimes. Thereby, questions of resource (and resource project) ownership are directly linked to institutional aspects of project organization such as planning, decision-making, transparency, etc.

Economists from the 1950s onward have mostly supported private management as the most efficient, transparent, and sustainable option (Acheson 2006). Common property was considered a direct pathway to overuse and overcapitalization, while governments in developing countries were expected to lack the necessary knowledge and equipment for the adequate and efficient management of a resource project (ibid.). Moreover, private ownership or management of resource projects was anticipated to motivate governments to secure stable fiscal and regulatory institutions and civil society actors to strictly monitor these initiatives (Mildner, Lauster, and Wodni 2011a). The structural adjustment agendas of the international financial institutions of the 1980s and 1990s, which mirrored the neoliberal free market orthodoxy of its time, supported institutional reforms aimed at private ownership of resource projects, including low taxes, far reaching rights for international companies, and limited state interference. As has been outlined before, these reforms had dramatic social effects, particularly on the rural poor in Latin America (Arze Vargas and Kruse 2004). Resource licenses were often given away below their value and without necessary control instruments in place (for environmental monitoring, for example). Consequently, what was considered “good” governance at the time, actually created profound grievances by altering power relations to the benefit of private multinational capital (Bourgouin and Haarstad 2013; Hindery 2013) and supported the emergence of resistance movements in Latin America (Farthing and Kohl 2014).⁴³

⁴³ Literature on natural resource governance has also been concerned with the specific challenges of the management of common pool resources such as overexploitation, depletion and conservation relating to the idea of a “collective action dilemma”. Since the present work does not concern itself with a common pool resource, this line of research cannot be outlined here. For further insights see e. g. Acheson (2006) and particularly Ostrom (1990).

The crises spurred by private resource exploitation in many Latin American countries brought to light the different shortcomings of this model, such as incomplete property rights, market failures, and other inefficiencies. Profit as a singular goal can lead to unsustainable mass extraction leaving local actors with overwhelming burdens. Failures of private ownership regimes have, particularly in the Global South, increased the advocacy for publicly managed resource exploitation. The resource boom of the last decade has substantially altered power relations and liberated many developing countries from pressures of international financial institutions. In this context, an emergence of resource nationalism can be observed in Latin America headed by “pink tide” governments. Through state-owned enterprises, such as COMIBOL and YPFB in Bolivia or EP Petroecuador in Ecuador, governments regained authority in the exploitation and processing of resources. The normative idea of “good” resource governance is in these countries now frequently equated with sovereign extraction and a wide distribution of rents based on a renegotiation of public-private sharing agreements as well as extractive expansion (Bourgouin and Haarstad 2013).

According to Bourgouin and Haarstad (*ibid.*), changes in the resource governance approach from private ownership regimes to public management, are driven by three central factors: (1) macroeconomic trends and common ideology, (2) the organization of social interest, and (3) conflict. From this viewpoint, resource nationalism in Bolivia can be interpreted as primarily the result of the latter two factors. Grievances over the neoliberal model and socioeconomic imbalances, the formation of social movements, and the resulting rise of a new-left government brought about a political economy in which public management of resource projects gained importance. Farthing and Kohl (2014, 12) sustain for Latin America and particularly Bolivia: “Prevalent across the political spectrum, resource nationalism has been the most successful narrative in mobilizing the population for over 60 years and has often created widely unrealistic expectations of what state control of resources might do.”

Advocates of public resource management highlight that a long-term perspective towards resource extraction vis-à-vis the often short-term, profit maximizing agenda of transnational businesses is a significant benefit of the public approach. Since the central government is accountable to its citizens and acts in the national interest, sustainable extraction and consensus orientation are more likely (Acheson 2006). Consequently, it is assumed that externalities, environmental destruction, and local hardship receive more consideration from public authorities than can be expected from private,

profit-oriented businesses (ibid.). Moreover, rents are secured for national development and are not drained off to foreign profiteers (ibid.).

Yet, research has also pointed out shortcomings in publicly managed resource projects. Central concerns of the resource curse literature are bureaucratic structures in public companies and the agency problem, meaning that policy makers frequently engage in rent-seeking behavior (see Chapter 2.3.1). Scott (1998) has identified four factors that impede successful public resource management. He outlines (1) “the administrative ordering of nature and society” (ibid, 4) that leads to a bureaucratic oversimplification of context. He challenges (2) the “high-modernist ideology” of states that are too optimistic about technological progress and seek utopian transformations of society while ignoring social, ecological, and economic uncertainties and complexities. These first two factors are exacerbated, if (3) a highly centralized authoritarian government uses all its power to push for such a modernity agenda, and (4) when civil society and the local population lack the power and competence to challenge these imposed policies.

Both private and public resource management often fail to consider the interests and perceptions of weaker, community level actors. Clashes of cultures are frequent when technical specialists with a standardized resource management portfolio are confronted with local community strategies for resource management (Acheson 2006). While communal management of resources can equally lead to inefficient and unsustainable outcomes, depending on the characteristics of the communities and their management capacities, there is consensus in the literature that the participation of the affected local actors in resource governance is desirable and can support the mellowing of existing grievances (Acheson 2006; Barvinck, Pellegrini, and Mostert 2014; Bebbington 2012; Mildner, Lauster, and Wodni 2011a; Ramos Barón 2015; Schure 2007). Traditional knowledge can support more sustainable and locally adapted projects. At the same time, the exclusion of local actors often starts way before the actual resource project is implemented, in the development of the underlying institutions and negotiation structures, e. g. mining regulations and property rights regimes (Ramos Barón 2015, 153–154). Therefore, inclusive resource governance that takes traditional knowledge seriously would have to start prior to a resource project by inviting local and indigenous communities to support the drafting of the relevant laws (ibid.).

For the discussion of resource governance in this thesis, it is important to note that I concentrate my research interest on the public management of resources and not on the normative political

debate of which management regime would be more promising. The remainder of this section engages with the interaction of different management instruments of project planning and organization employed in the lithium initiative with the local interpretation of the project.

Management of Revenues

Failing to balance revenues and costs of a resource project has been identified by different authors as the single most important conflict driver in resource governance (Humphreys 2005; Orihuela and Thorp 2012; Schure 2007). A central question that has been discussed in resource governance literature in relation to the weak state mechanism is whether institutions are prepared to generate maximum surplus from extraction through taxes and use the generated income effectively (Orihuela and Thorp 2012). This can be achieved by balancing short- and long-term trade-offs in a resource project while securing the necessary investments, achieving long-term development goals, and avoiding economic snares such as Dutch Disease (see Chapter 2.3.1).

Revenue sharing regimes can be differentiated vertically, referring to rent allocation between different levels of government (national, regional, and local) or horizontally between government and non-government actors. The use of rents also determines how much stakeholders directly affected by resource exploitation are compensated for damages inflicted on them. Literature outlines different spending trends with an increase in resource income such as rising social security expenditure, visible in many Latin American countries (Farthing and Kohl 2014; for Bolivia compare Radhuber 2013), investments in public employment (Auty and Gelb 2001), savings and reserve generation, the creation of stabilization funds (Mildner, Lauster, and Wodni 2011a) but also an increase in military spending (Basedau 2005; Mildner, Lauster, and Wodni 2011a). Different authors underline the danger of an over-dependency on resource income (Basedau and Lay 2009; Mähler, Shabafrouz, and Strüver 2011; Mildner, Lauster, and Wodni 2011a). They recommend investments in an economic diversification at the macro level while generating development potential at the micro level (*ibid.*).

There are, however, no established standards for how revenues should be allocated. As Mildner, Lauster, and Wodni (2011a) outline, some researchers advocate direct participation of citizens through tax cuts, the provision of public goods or cash transfers, while others caution against such measures and support saving funds. From a grievance perspective, it is particularly important that

all population segments profit, especially local actors who experience the direct effects of extraction should feel that their needs are met (Humphreys 2005; Orihuela and Thorp 2012). The ability of revenue sharing regimes and spending decisions to create insiders and outsiders in a resource initiative is particularly troublesome. Case studies have shown that local communities disproportionately miss out on benefit distribution and compensation payments (Bebbington 2012; Schilling-Vacaflor 2013).

Various mechanisms are used to share extractive revenues with local communities. First, resource projects can generate local income; this can happen when on-site resource processing creates direct employment and economic movement or, more commonly, through the use of local services by the industry and indirect employment (Bebbington 2012). Evidence from case studies, however, shows that place-based labor is mostly hired in the beginning of the project, especially for construction and road services, while long-term and high-skilled workers are contracted from outside the area (Anlauf 2014; Bebbington 2012; Göbel 2013a, 2013b; Sinnott, Nash, and Torre 2010; Slipak 2015).

A second positive linkage can be generated through social responsibility initiatives that target a further extension of backwards linkages through education and training programs aiming at the improvement of local services and labor offers (Bebbington 2012; Sinnott, Nash, and Torre 2010, 56). A frequent criticism of such programs is that they substitute services which the government should provide and make local communities dependent on private companies (Bebbington 2012; Göbel 2013b), while they cannot solve structural local problems such as unemployment (Sinnott, Nash, and Torre 2010, 56). Often, these initiatives are also primarily oriented towards company, not community, needs (Slipak 2015), are restricted to the direct area of impact, and do not target the larger affected region (Bebbington 2012).

Third, taxes and rents generated through extraction can be partly earmarked for the extractive region; this can help bolster local budgets, generate funds for productive projects, and allow for municipal services to improve (Bebbington 2012, 16–19). Thereby, local rent allocation is often in conflict with other government spending goals and the demands of powerful actors in society. For all three mechanisms, the empirical support is ambiguous at best (*ibid.* 2012). While they might have positive impacts on some actor groups, they can simultaneously produce negative effects for others, create new grievances, and support the emergence of insider-outsider-conflicts. Moreover,

their successful implementation depends on the existence of functioning institutions and the willingness to integrate local actors and their knowledge (Ramos Barón 2015).

Another aspect of revenue management that has proven to support conflict at and beyond the local level is the capacity of governments to sustain revenue sharing regimes and spending policies in both boom and bust years. Revenue flows in the resource sector are insecure because of volatile and nontransparent commodity markets which can lead to frequent imbalances in rent influx (Auty and Gelb 2001; Basedau and Lay 2005; Mildner, Lauster, and Wodni 2011a; Sinnott, Nash, and Torre 2010). This is particularly true for externally sensitive resources and resource markets that have not yet stabilized due to new and changing market needs (Basedau 2005, 336); lithium could be considered an example of both. The resource curse literature has, in this context, underlined the dangers of procyclical investments. If, for example, spending on social services comes from resource money in boom years, the demand continues to exist in bust years. The budget often cannot be sustained, supporting both population deception and debt creation (Auty and Gelb 2001; Le Billon 2001). This danger is even more pronounced if a rent influx during resource booms has created low tax regimes, so that tax money is not available when resource money runs dry (Auty and Gelb 2001).

Further factors negatively affecting the revenue spending include corruption and opaque revenue management structures. Bolivia, with its history of resource dependence, provides an example of institutionalized corruption. Transparency International ascribes Bolivia a continuously high corruption prevalence and ranks it 103 out of 173 in the Corruption Perception Index (CPI) (Transparency International 2015). Moreover, the country has a comparably low overall tax regime; historically, it has compensated for its low taxes with resource rents (Held 2013). This suggests that these governance dimensions could be relevant for this case study.

Management of Externalities

Resource exploitation generally produces both benefits, in form of rents and tax income, and costs, meaning externalities on the extraction environment and the local inhabitants. Institutional analyses of resource governance have largely omitted this latter aspect. While different international recommendations for resource governance support legal reforms regarding mining, environmental and investment laws targeting effective steering mechanisms, these proposals are often voluntary

and use measurable standards as opposed to considering local realities (Mähler, Shabafrouz, and Strüver 2011; Mildner, Lauster, and Wodni 2011a). Numerous case studies from around the world (see Footnote 42) have described that overlooked externalities and insufficient legislation (or the deficient implementation of legislation) are important dimensions in grievance interpretation and have frequently supported the emergence of conflict.

Environmental externalities can cause significant local problems. The exploitation of resources is an intrusion into the environment. Land is needed and undeveloped land is often deforested and degraded by chemicals employed in the extraction process (Sinnott, Nash, and Torre 2010, 51 et seqq.; Umweltbundesamt 2014). Moreover, ground and surface water resources might be depleted and polluted, which has secondary impacts on the ecosystem and the livelihoods of local communities (Engels and Dietz 2014; Göbel 2013a, 2013b; Sinnott, Nash, and Torre 2010; Umweltbundesamt 2014). Pollution of land, water and air can generate health risks (Sinnott, Nash, and Torre 2010, 56), impinge on hunting and fishing opportunities, and impact local food security (Homer-Dixon 1994). Externalities are mostly localized, affecting the area of extraction and the population living in the vicinity of the project the most. Thereby, the static nature of most resource projects confines their implementation to a very limited area where necessary conditions are met, while these regions might be environmentally very delicate (Sinnott, Nash, and Torre 2010, 4).

Negative environmental effects are often closely connected to other social impacts (Sinnott, Nash, and Torre 2010, 54 et seqq.). For example, resource projects can enter in direct competition over land and water in an area where local economic strategies are focused on farming and herding; land is also frequently sold to private users in a manner that bypasses traditional local practices (Backhouse 2015; Dietz, Engels, Pye, and Brunnengräber 2015; Engels and Dietz 2014; Göbel 2013a; Hall, Hirsch, and Li 2011). Extractive initiatives can also lead to increased migration; possible effects of projects include the displacement of local inhabitants, disadvantages on the labor market for less-skilled locals, and conflicts over local services (Basedau and Mehler 2005; Homer-Dixon 1994; Pellegrini and Ribera Arismendi 2012). Thereby, the dislocation of the local population through resource projects and the connected effects on the ecosystem can increase hardship and poverty (Homer-Dixon 1994; Umweltbundesamt 2014). Moreover, frustrated expectations about the local benefits of a resource projects can create grievances and impact their local interpretations (Sinnott, Nash, and Torre 2010, 56).

Case studies have shown that environmental and social legislations protect local actors poorly against negative externalities in developing countries (Barvinck, Pellegrini, and Mostert 2014; Bebbington 2012; Sinnott, Nash, and Torre 2010, 56). This is particularly true in Latin America, where the neoliberal shock therapy of the 1980s and 1990s neglected to consider environmental and social impacts of extractive development (Arze Vargas and Kruse 2004). Neo-extractivism scholars point to continuities in deficient externality management under “pink tide” governments in the region (Burchardt, Dietz, and Öhlschläger 2013; Gudynas 2015a; Hindery 2013).

Externalities on place-based actors emerge as a central grievance and an important factor in local meaning-making about a resource project. Thus, they can be a relevant promoter of social conflict. According to Engels and Dietz (2014, 8), local resource conflicts can be characterized as conflicts “in which poorer households or social groups protest against the dispossession or destruction of their physical-material livelihoods and lifeworlds.” The vast majority of place-based actors in resource projects in developing countries are rural poor, since extraction generally targets areas beyond urban boundaries where rural poverty is widespread (Engels and Dietz 2014; Sinnott, Nash, and Torre 2010, 56). These communities are particularly disadvantaged compared to other actors in the extractive project. Often their property rights are insufficiently secured and land in communal use is appropriated for resource projects. They are disadvantaged when it comes to the distribution of rents and property rights on land while bearing the brute impact of the externalities to a far greater extent. Referring to the above outlined institutional dimensions of resource governance, namely ownership and rent distribution, these local communities often become outsiders in the resource project.

Management of Inequalities and Stakeholder Integration

As has been discussed, the local evaluation of resource governance in relation to potential benefits, perceived impacts on the environment and livelihoods, and the cultural and historic meanings that are attached to the resource and the land where it is extracted are all decisive factors in shaping local grievances and generating resistance. It is thereby necessary to diverge from the perception that only weak and failing states are prone to locally insensitive resource governance that generates grievances and conflict. While functioning institutions are important, so are the underlying structures of inequalities (Frerks, Dietz, and van der Zaag 2014).

Different scholars have underlined the importance of the historical development of institutional inequalities (Basedau and Lay 2005; Le Billon 2001, 2008; Ramos Barón 2015). One important example is that of property rights regimes, which have been particularly relevant in creating grievances by systematically excluding local actors from land rights. Basedau and Lay (2005, 16) point out that mining economies in Latin America and Africa developed property rights that secured economic influence for the colonial elites while excluding large parts of the population from land rights. Auty and Gelb (2001, 3) emphasize that, especially in Latin America, natural resource abundance has historically supported the formation of a small class of land possessing elites. As these elites persist, so do the institutions that historically favored them. According to Le Billon (2001, 2008), resource conflicts of our time are often rooted in these historic set-ups of private property rights favoring elites over local communities.

Institutions are an outcome of social realities and norms, existing cleavages, and power relations. Based on categories such as gender, class, and race, individual actor groups are often systematically disadvantaged in resource governance. This leads to a highly unequal distribution of access to and control of resources (Mildner, Lauster, and Wodni 2011a).

For indigenous peoples, Mähler and Pierskalla (2014, 10) argue that valuable natural resources can raise identity stakes and intensify grievances making an escalation into conflict more likely:

“Local resource exploitation can serve as an important local unifying frame for indigenous mobilization, by strengthening the identity of groups from within, as well as influencing behavior of external actors (energy companies and especially governments) toward indigenous populations [...]. Once natural resources are used to activate and strengthen indigenous identities, the associated grievances over revenue distribution and environmental damage limit the available range of acceptable bargaining outcomes.”

It is in these contexts that extraction of natural resources directly links to local livelihoods (ibid.). The degree to which stakeholder integration in a resource project reflects systemic inequalities is central for whether and when political grievances support mobilizations. Different authors underline the positive impact of inclusive institutions and a locally sensitive governance approach that gives voice to underrepresented populations groups, particularly indigenous peoples, peasants, and women, while enforcing their territorial rights (Barvinck, Pellegrini, and Mostert 2014; Bebbington 2012; Orihuela and Thorp 2012; Wissen 2015, 28).

In this context, the political and institutional capacity to negotiate consensus and social peace in a society is relevant to understanding grievances and their potential to trigger mobilizations. Lipset and Rokkan (1967) argue that societies are shaped by continuous conflict because of cleavages between population groups with different identities. At the same time, cooperation in resource projects is often hindered by barriers between population segments (e. g. of knowledge, culture, or ideas) (Ramos Barón 2015, 55). Political institutions as a core component of governance are responsible for supporting inclusion and overcoming barriers between different stakeholders with diverging identities, interests and capacities. Political systems, however, that are not able to span these cleavages or internal divisions and to form consensus are less capable of supporting material wellbeing, social peace, and environmental friendly policies (Lijphart 1999).

As will be pointed out in the following chapters, barriers as well as class- and ethnicity-based cleavages are a social reality in Bolivia, where the political system has widely failed to establish consensual politics in a society deeply divided by group-based conflict lines. Historically, policy making in Bolivia has been shaped by systemic inequalities and a long-term exclusion of different population segments from political and economic decision-making. In the light of returning resource nationalism in Latin America, the power relations between the national government and local communities merit specific attention. Thereby, inequalities in power structures interact differently with grievances. On the one hand, these power inequalities can deepen local concerns and facilitate the formation of social movements. On the other hand, the limited participation and power of certain actor groups or their active suppression limits both their opportunities to influence a resource project and their ability to mobilize against it.

2.5 Summary of the Analytical Model

For my analytical assessment of the lithium project, I have developed a model which separates grievance content from governance as a context condition that interacts with the local interpretation of grievances. A grievance relates to a specific irritation or concern in a resource project. Based on its content, we can identify recurring concerns in resource projects and differentiate between livelihood grievances that relate to a concrete local impact of a resource project, economic grievances that develop around material questions of benefit distribution, and political grievances which link to the institutional framework, including existing land rights, aspects of transparency and

stakeholder inclusion. The interpretation of grievances can evolve in different types. Literature, for example, explains grievance emergence as the result of the perception of a subsistence threat, frustrated expectations or perceived inequalities (Table 1).

Category	Governance Context	Type	Direction
Political Grievance	<ul style="list-style-type: none"> ▪ Institutional quality ▪ Information and transparency ▪ Inclusion and social control 	<ul style="list-style-type: none"> ▪ Subsistence threat 	<p>Horizontal</p> <ul style="list-style-type: none"> ▪ Between communities <p>Vertical</p> <ul style="list-style-type: none"> ▪ Between state levels ▪ Between government and communities
Economic Grievance	<ul style="list-style-type: none"> ▪ Monetary benefits and distribution ▪ Local employment ▪ Basic services and infrastructure ▪ Capacity building ▪ Other benefits 	<ul style="list-style-type: none"> ▪ Frustrated expectations ▪ Disadvantages / inequalities (e. g. power imbalances) 	
Livelihood Grievance	<ul style="list-style-type: none"> ▪ Environmental impacts ▪ Socioeconomic impacts (displacement, traditional economies, etc.) ▪ Cultural impacts ▪ Health impacts ▪ Other impacts 		

Table 1: Grievance Categories and Governance Context

For grievances to result in social movements, the meanings awarded to these grievances are relevant. Meaningful grievances need to be able to span individual concerns into a wider group-based rejection of a resource project to provide the ground for resistance. For this, the context in which the interpretation of the project takes place is decisive and governance is a central component of this interpretative set-up. How the government manages individual concerns and whether local actors feel that their grievances could decrease or increase based on the regime’s approach are extremely relevant factors in this framework of meaning-making.

In the analysis, I will focus on different dimensions of governance that have proven relevant for local interpretations of grievances. Based on my literature review, I place a specific emphasis on the institutional design and planning of the initiative. Thereby, instruments of revenue sharing, the approach to externality management and questions of stakeholder inclusion are governance dimensions that impact on local meaning-making. Table 1 summarizes this governance context in

relation to the outlined three grievance categories. Each governance dimension can be further specified into sub-categories, such as the management of different types of benefits. Appendix I elaborates the governance dimensions further. Resource ownership is an additional aspect of the governance context but will only be a secondary focus in the present study as ownership structures in the public lithium project were previously defined. It will, however, be relevant to analyze in how far the already made decision to exploit lithium publicly impacts on local interpretations of the project.

As I outlined above, governance is only one aspect of the interpretative context of a resource project. How the initiative is presented (or framed) may also have an impact on the context of meaning-making. Other supporting factors that interact with grievance meanings are, for example, historic experiences, beliefs, or long-standing societal cleavages. As Simmons (2014, 523) outlines, how people interpret their life situation before the imposition of a grievance, thus prior to the resource project, and what they expect to happen when the initiative is continued (also based on the governance approach followed) is central. Thus, when assessing grievances, it will be important to differentiate between the issue at hand and which type of concern evolves around it, the governance dimension it interacts with, and the outside conditions that add to the meaning-making context (Figure 1).

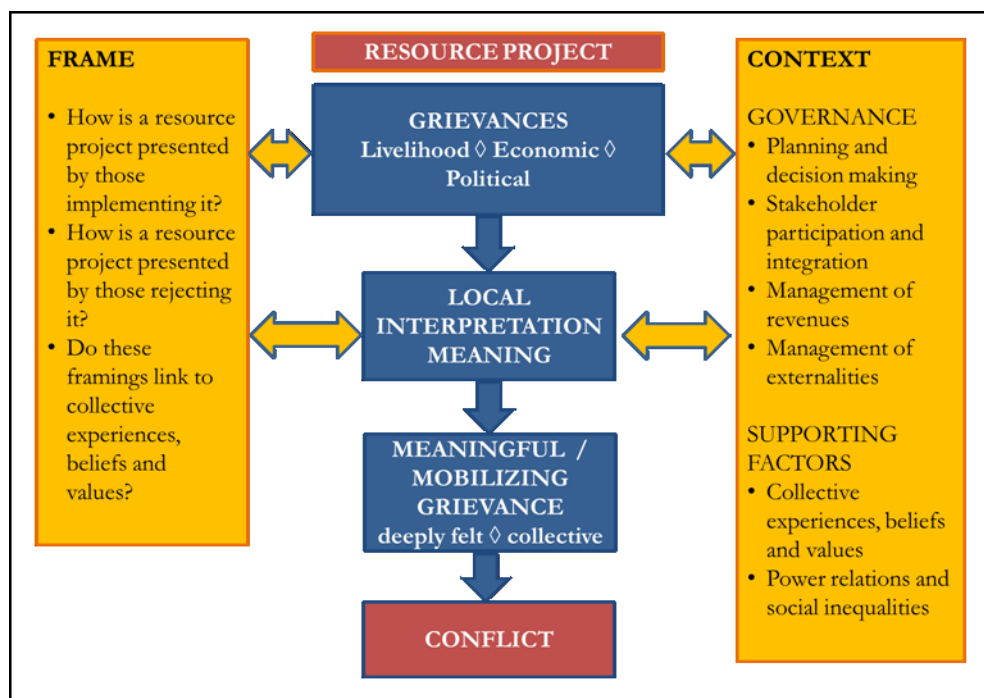


Figure 1: Analytical Model on Grievance Categories, Governance, and Conflict

Appendix I further operationalizes my analytical framework on governance dimensions, categories of grievances and supporting factors in meaning-making. As will be discussed in the following Chapter 3, this systematization served as a starting point for data analysis in the research project. Based on my case findings, the introduction to Chapter 7 will further specify the different grievance categories and types developed.

3 Methodological Approach and Research Strategy

3.1 Qualitative Case Study Approach

Macro perspectives dominate the study of the resource curse and resource conflicts. Research in the 1990s and early 2000 was primarily conducted with a positivist approach associated with quantitative research methods, seeking to prove the existence of a relationship between natural resource abundance, socio-economic growth, and (violent) conflict. These large-scale quantitative assessments found a limited relevance of grievances in the study of resource conflicts (Collier and Hoeffler 2004; Fearon and Laitin 2003). Various researchers have pointed to important shortcomings in these assessments; macro level studies rely on rigid definitions of conflict, leaving out more subtle, low intensity conflicts (Le Billon 2008; Mähler and Pierskalla 2014; Samset 2009). It is in these low intensity conflicts that the grievance concept provides an interesting vantage point for the study of resource conflicts.

Quantitative studies are well suited to demonstrate the existence of certain relationships, but only qualitative methods permit an interpretive understanding of these relationships. Qualitative case studies allow us to ask why and how certain relationships develop and subsist. Thus, while acknowledging that there is a link between resources and conflict, we need to further investigate the underlying mechanisms. Quantitative methods have proven insufficient to grasp these case-specific dynamics. On the local level, these mechanisms are related to the perceptions and interpretations of local actors in the context of resource projects and their governance which can only be identified in a case study. The complex research framework and our limited understanding of the underlying mechanisms calls for a case study with a relatively open and varied approach to data collection and analysis that allows for the articulation of complex ideas and feelings (Hopf, Rieker, and Schmidt 1995).

A case study is, according to George and Bennett (2005, 17–18), an example of a phenomenon of scientific interest that is analyzed to support a theoretical understanding of this phenomenon in a bounded system. Gerring (2007, 37) describes it as “an intensive study of a single unit or a small number of units (the cases) for the purpose of understanding a larger class of similar units (a population of cases).” The value of case study research for causal inferences, theory development, and theory testing is widely acknowledged by scholars (Lijphart 1971; Eckstein 1973; Achen and Snidal 1989; King, Keohane, and Verba 1994; Van Evera 1997; Gerring 2007; George and Bennett

2005; Beach and Pedersen 2013). As George and Bennett (2005, 19) put it, “case studies are generally strong precisely where statistical methods and formal models are weak”. As the present study seeks to grasp not only actions but also interpretations and perceptions of local actors, a thick description of the phenomenon is of paramount importance, which is best accomplished by case studies (Coppedge 1999). Thereby, the depth of the qualitative case study provides the necessary internal and conceptual validity to avoid conceptual stretching while accounting for equifinality⁴⁴ (George and Bennett 2005, 19–22). Another benefit is the possibility to give voice to local actors, who have been identified as being deeply affected by resource governance decisions by previous studies. Despite the acknowledgement of the centrality of these local actors, few studies have investigated them more closely.

At the same time, the focus on a specific case also implies a central limitation of the qualitative case study approach. Case studies are by nature specific to a context. This affects their potential to infer beyond the case population to establish general causal relationships. Yet, as discussed previously, the theoretical discussions on the link between a resource, its governance, and a conflict have already moved beyond the quest to find a general theory. Particularly with case studies, researchers now seek localized explanations to develop building blocks for our theoretical understanding of the diverging mechanisms at work. This present research contributes to this approach. To confront challenges of case study research and to increase internal validity, this study triangulates different data sources and methodologies, combining macro level deductive theory development with an inductive qualitative micro analysis. This combines the advantages of a thick description of an individual case with bounded generalizability as the superior goal of scientific investigation.

As an important contribution to theory refinement, this case study integrates and operationalizes the theoretical findings on resource governance, their possible effects on local livelihoods, and the generation of mobilizing grievances, as provided in the previous Chapter 2 and the research model in Appendix I. The interpretative categories for the in-depth micro analysis of the Bolivian lithium case are derived from conclusions drawn from the literature on the resource curse, good governance debate, and other case studies. As Wolff (2008, 191) outlines, a “micro analysis can verify to what

⁴⁴ Equifinality is the idea that in complex social systems more than one mechanism can lead to the observed outcome.

extent a developed macro explanation makes sense from the perspective of individual groups” on the local level.⁴⁵

The analytical centerpiece of my methodological approach is a congruence test which compares the analytical model (see Chapter 2.5 and Appendix I) with the observed findings in the case study. The test assesses the ability of theoretically defined dimensions of resource governance to explain the grievances observed in the lithium study case and their local interpretations, evaluating the potential of conflict emergence. George and Bennet (2005, 183) define congruity as “similarities in the relative strength and duration of hypothesized causes and observed effects.” Based on the analytical model and the theoretically developed dimensions of resource governance and categories of grievances, I assume that the outlined governance instruments influence meanings awarded to grievances in the lithium project in a way that provides the conditions for conflict to emerge. This hypothesis is tested against the case for congruity with each governance dimension, assessing if and to what extent a certain aspect of governance interacted with the local interpretation (local meaning-making) of the project. To increase internal validity, to rule out spuriousness, and to reduce researcher biases, the analysis employs George and Bennet’s “analytical imagination” through counterfactuals and mental experiments while complementing the analysis with secondary methods of within-case analysis. These supporting strategies were used to gain a full understanding of the case and its historic development while unraveling contradictions in the explanations, thereby strengthening the findings.

The congruence analysis was supported by process-tracing, as recommended in the literature (George and Bennett 2005, 205–232; Gerring 2010, 172 et seqq.). Process-tracing is applied to understand causal mechanisms and analyzes the chain of events that transfer the initial case conditions into the observed outcomes (Beach and Pedersen 2013). George and Bennett (2005, 212–13) see the practical implementation in the identification of key branching points which restricted decisions and outcomes in a case. In this understanding, process-tracing was applied in the present study to help determine why certain policy instruments were favored over others in the development of the lithium program and how these decisions interacted with local perceptions (in media coverage, for example). Concretely, this means a detailed timeline of the project was developed focused in the key moments of lithium industrialization based on all the different sources

⁴⁵ Translation by the author. Original Quote: “*Die Mikroanalyse kann überprüfen, inwieweit die entwickelte Makroerklärung aus Perspektive einzelner Gruppen Sinn macht*” (Wolff 2008, 191).

available (documents, interviews, media etc.). Such a thorough historical case description allowed for a profound understanding of why individual governance decisions were taken and why they resulted in the local interpretations observed.

As a further supporting method, actor responses as well as the meanings they award to lithium exploitation were not only analyzed based on the present program but also on two support cases. Collier (1993, 112) observes that “within-case comparisons are critical to the viability of small-N analysis”. The study also engages with mobilizing grievances in the first unsuccessful and conflict-intensive exploitation of lithium in Bolivia in the late 1980s and early 1990 as well as with emerging conflicts over lithium industrialization in the Argentinean highlands. The earlier Bolivian case study is particularly influential for meaning-making in the current lithium project; as “every case is always far more similar to itself at a different time than it is to any other case” (Coppedge 1999, 472).⁴⁶ Moreover, this comparison allows for tentative generalizations from the case study, increasing the external validity of the research approach (Wolff 2008, Cpt. 1.3).

3.2 Methods of Data Collection

For this study, data was collected from primary documents, secondary literature, and through semi-structured interviews. Different data sources were triangulated. Research was facilitated by a general accessibility of secondary literature, a partial accessibility of primary documents (see Chapter 3.3.1) and the timely nature of the investigation. I could conduct interviews with witnesses and participants of both the first private lithium exploitation attempt and the current public lithium program. The research is furthermore supported by information gathered by the author during events and talks in Bolivia, such as public expositions of GNRE, debates on mining policies at the UMSA university, and a workshop on neo-extractivism with scholar Eduardo Gudynas in April of 2016 in La Paz. An overview of the database and data collection techniques is provided in Table 2, while a list of interview partners is given in Appendix III.

⁴⁶ Thereby, it can be argued that the comparison takes on a quasi-experimental character, evaluating the case before and after a regime change. George and Bennett (2005, 166 et seqq.) consider this to be one of the most efficient research designs in case studies.

Variable Type⁴⁷	Variable Specification	Data Collection	Data	Data Specification
Independent Variable	Resource Project / Resource Governance		Primary Documents, Secondary Material	Public documents, particularly GNRE reports and the environmental impact evaluation, national statistics, media coverage, civil society reports, public events.
		Semi-Structured Interviews	Interview Transcripts, Memory Protocols	Interviews with government representatives, private sector, civil society, analysts, and academia.
Dependent Variable	(Mobilizing) Grievances	Semi-Structured Interviews	Interview Transcripts, Memory Protocols	Interviews with local representatives (government, civil society, indigenous authorities), analysts, academia, national NGOs.
		Observations and Informal Conversations	Field Notes	
			Primary Documents Secondary Material	Government documentation on local consultation, local documents particularly on land claims, media coverage and civil society reports.

Table 2: Methods of Data Collection

⁴⁷ The application of a variable-based framework is difficult in this research project. The link investigated in most of the quantitative research of the past is between the resource (project) as the independent variable and the (resource) conflict as the dependent variable. In this research project, I want to understand the interactions between resource governance and mobilizing grievances as a trigger of conflict. Resource governance is therefore a context condition that can support grievance mobilization, rather than a variable. It is a mechanism which, as authors such as George and Bennet (2005, 181–204) and Beach and Pedersen (2013, chap. 3) stress, is often black-boxed in analyses of causal inference.

3.2.1 Primary Documents and Secondary Literature

Data was provided through the accessible primary documents as well as a review of secondary literature. Most primary documents related to the lithium program, particularly internal documents, were not openly accessible, since the program is ongoing and classified as a strategic government initiative. Based on a special petition to the Ministry of Environment and Water (Ministerio de Medio Ambiente y Agua – MMAyA), I obtained a copy of the environmental impact assessment from April 2013, which also includes documentation of community relations. Moreover, the present study relies on an analysis of the reports on the lithium program (“*Memorias*”) which have been published by the GNRE annually since 2010, as well as additional government documentation available on the websites of the GNRE, COMIBOL, and other government institutions.

Central secondary materials for the analysis were the relevant legal documents such as the National Constitution (Constitución Política del Estado – CPE) as well as the mining and the environmental legislation. Ulterior insights provided ministry press declarations and press coverage, including articles in COMIBOL’s institutional newspaper *Bocamina*. Other government publications, which outline the general agenda for the valorization of the Bolivian natural resources, were classified as background materials, for example the National Development Plans. During fieldwork, I also collected written reports from local analysts, NGO staff, and think tanks. These provided an important perspective and served as a check to the government publications. Also, a complete overview of the press coverage of the program from 2008 to 2016 was obtained through the Bolivian Documentation and Information Center (CEDIB) in Cochabamba.⁴⁸ The press overview was extended by a collection of press articles on the first lithium exploration attempt of the late 1980s and early 1990s, which I obtained from two of my interview partners. This information added to the evaluation of press coverage from this time carried out by Rupp (2013).

⁴⁸ The overview includes all articles with the search words “evaporite resources” and “lithium” in the 11 largest Bolivian newspapers from 2008 to 2016.

3.2.2 Semi-Structured Interviews

While the theory-based macro analysis can give general insights into the link between resource governance regimes and grievance development, it does not assess the specific perceptions and evaluations of the lithium program in Bolivia nor can it grasp the emergence of mobilizing grievances. Therefore, a micro analysis based on interviews aims at an actor-centered control of the macro analysis (Wolff 2008, chap. 1.3).

In applied social scientific research, interviews are widely accepted as a valuable tool to unravel structural causation. A profound case analysis that engages with local perspectives and meanings is not possible by only relying on secondary written accounts (Rathbun 2008). Interviews are the best tool to gain access to the unobserved behaviors, thoughts, beliefs, and ideas of actors in this case study. Moreover, since lithium exploitation is still in the pilot phase and has not started on a broad industrial level, grievances are expected to emerge on less visible levels within regional organizations and interest groups. These sources can best be accessed using interview techniques.

Interview Method

This research project employs a semi-structured, problem-centered interview method based on a directory of open ended questions. In this, the directory is considered a flexible tool, in which the number and order of questions can be adapted spontaneously. Follow-up questions can be added depending on the responses given. Semi-structured interviews allow for an in-depth understanding of the respondents' experiences and opinions while "generally stress[ing] context over generalizability, induction over deduction, and complexity over parsimony" (Rathbun 2008, 686). A semi-structured approach provides the necessary leeway to understand local responses within the context without weakening comparability and the search for objective facts. At the same time, open questions increase response validity by not restricting respondents to pre-formulated answer possibilities and adding to their general response willingness (Aberbach and Rockman 2002; Berry 2002).

The questionnaire was developed based on a synthesis of theoretical knowledge and the resulting analytical framework on resource governance dimensions (see Chapter 2.5 and Appendix I). The questions were clarified and extended twice, once after a trial interview before the first research

phase, and again after the first research phase, when the reactions of interview partners towards the questions (e. g. understanding, knowledge, new themes) were taken into consideration. Central interview topics were, however, kept constant to allow for evaluative comparability. The interpretative questions on the questionnaire relate to the perception of lithium governance and conflicts of interest around lithium and potassium exploitation, the expected benefits and costs of the program, as well as the development of lithium policies. While interviews with experts at the national level generally responded to all aspects of the directory, interviews with local actors were shorter and focused on their perception of the lithium project, its impacts in the neighborhood, personal expectations, and fears; while not targeting institutional matters such as the administrative organization of the initiative.

Besides the semi-structured interviews, additional unstructured background interviews were conducted. These did not follow a questionnaire and were interactive exchanges between the researcher and the interview partners. These background interviews do not enter the category-based data analysis but were conducted to identify potential interview partners and to gather facts about the project. These interviews helped inform about the historical development of the initiative and technical and legal aspects, since not all specificities were available in the written sources.

Interview Characteristics

A grand total of 105 interviews were conducted in two research phases (September to December 2015 and March to May 2016); 85 semi-structured interviews and 14 background interviews. Additionally, three background interviews were carried out in Argentina and three interviews (one trial, two background) in Germany. In Bolivia, interviews were conducted in the cities of La Paz, Potosí, Oruro, and Cochabamba and in different local communities in the salar region (see Figure 2).⁴⁹ In the province of Antonio Quijarro, different interviews were carried out in the regional and tourism capital Uyuni, which has about 18,700 inhabitants (Taucer and Anze 2013, chap. 4, 86) and is seat to most regional organizations. In addition, I conducted interviews in Colchani (700 inhabitants, 2012), a village close to Uyuni on the border of the salar, where salt exploitation is the dominant economic activity.

⁴⁹ The map in Figure 2 is based on a satellite image of the Salar de Uyuni and was taken and adapted from CEDIB (2012) with the explicit permission of the organization.

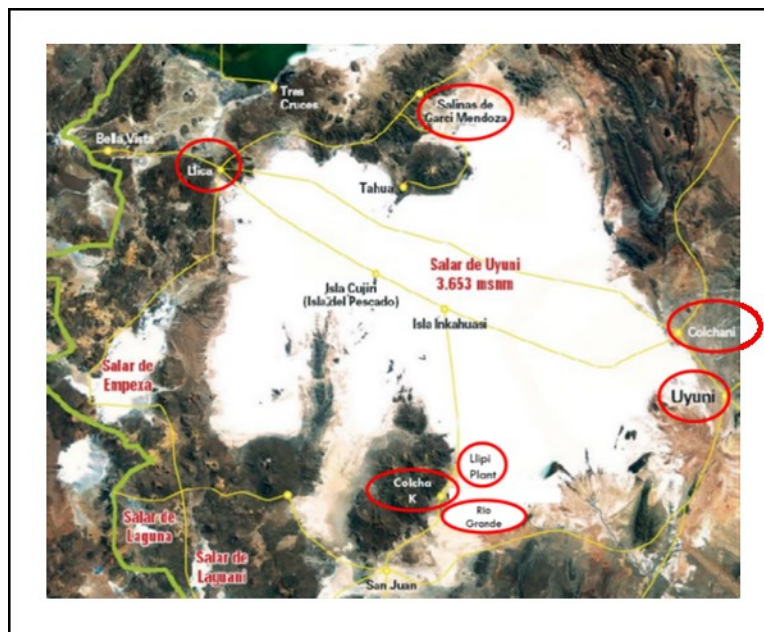


Figure 2: Local Communities visited in the Salar de Uyuni Region

In the northern province of Daniel Campos, I visited the regional capital Llica (600 inhabitants, 2001), home of the provincial teachers’ seminar. In the province Nor LÍpez, interviews were carried out at the GNRE camp, in the nearest village, Rio Grande (700 inhabitants, 2012), and in the provincial capital Colcha “K”. In the province of Ladislao Cabrera, Department of Oruro, data was collected in the provincial capital Salinas de Garcí Mendoza (600 inhabitants, 2001).⁵⁰ Individual

interviews were conducted with respondents from salar villages now residing in Uyuni or La Paz; this way two respondents originally from Tahua (Daniel Campos province) were also interviewed. The region where the lithium extraction takes place is introduced in Chapter 5.4.

If the respondents agreed and the interview situation allowed for it, interviews were recorded and transcribed using the software F4 (57 interviews in total were recorded). For all other interviews, memory protocols based on notes of the interviewer were written shortly after the interview. Moreover, field notes on the interview situation were made and observations by the interviewer noted down. Individual interviews lasted between ten minutes and three hours. The average interview time for analysts and policy officers was one hour. For local respondents, the average interview time was 20 minutes. Almost all interviews were held in Spanish, with several individual sessions conducted in German. Eight interviews (including formal and background interviews) were

⁵⁰ Inhabitant counts were taken, when available, from the interviews conducted in 2012 for the Environmental Impact Assessment (Taucer and Anze 2013, Annex VII). Data was provided either as numbers of inhabitants or as numbers of families. In the latter case, I multiplied the numbers with the average number of family members (3.54) as established by the 2001 census (Poveda Ávila 2014, 130). Data for Llica and Salinas de Garcí Mendoza is only available from the 2001 census, the current population is probably higher. According to data from Taucer and Anze (2013, Annex VII) only 112 families (about 400 people) live in Colcha “K” (village), which would make it smaller than Colchani or Rio Grande. From personal observations, I do not believe this to be the case and estimate that it has between 700 and 900 inhabitants.

carried out in a group with more than one respondent. In these cases, individual answers were linked to the specific interview partner in the transcript.

Segments from the interviews are included in this thesis to give voice to the perspectives of my respondents. Thereby, interviews were translated as closely as possible to the original, while leaving room for contextual interpretations when necessary. The original quotes (mostly Spanish) and comments on the translation are included in footnotes.

Interview Partner Selection

At the national and provincial level, interview partners were intentionally and systematically selected based on information gathered in document analysis and a thorough study of secondary literature as well as snowballing techniques in different contact networks. A central criterion for the selection of an interview partner was that he or she was affected by the lithium program, involved in its management, or particularly knowledgeable on the subject of lithium and mining politics in Bolivia.

At the government level, I sought to interview the relevant decision makers in the program. Interviewees included national and departmental civil servants who participated in the design of lithium policies and the implementation of the pilot project, including staff of the Ministry of Mining and Metallurgy, the public mining company COMIBOL, its sub-organization GNRE, as well as the mining and environmental agencies in Potosí. I also targeted individuals who held crucial positions during the development of the program, such as former authorities in the relevant organizations, and decision makers during the first lithium project of the late 1980s and early 1990s (see Chapter 5.2). Furthermore, I identified knowledgeable experts on lithium in academia, civil society, and the private sector based on publications on the topic and personal recommendations from other experts.

At the local level, I visited the central communities around the Salar de Uyuni and interviewed local representatives of government and civil society as well as heads of local businesses. To counterbalance official positions, I also sought out former authorities in the communities, indigenous representatives and engaged in informal conversations with local inhabitants. In result, interview partners from a wide range of organizations were approached, including institutions affiliated with the government and those in opposition. The selection of interview partners

encompasses, to the best of my knowledge, the most important decision makers and experts on the topic in the country and gives, at the local level, a balanced panorama of the opinions and perceptions of the lithium project. An overview of the interview partners is given in Table 3.⁵¹ Detailed information on the interviews can be found in Appendix III.

National Level				Departmental Level	Local Population
Public Sector	Private Sector	Academia	Analysts / NGO		
19	4	13	17	7	50
Local Interview Partners by Locality					
Uyuni	Llica and Tahua	Colchani	Rio Grande	Salinas de Garcí Mendoza	Colcha “K”
7	13	3	5	8	14

Table 3: Overview of Interview Partners

Ethical Considerations, Interview Partner Biases and Access to Information

My research has involved many people and I have engaged with them in a respectful and open manner, adhering to the *Ethical Research Guidelines of the University of Erfurt*. Interviews were conducted based on informed consent, meaning that the project as well as data use was outlined to the respondents, so that they could make an informed decision on whether to participate. They were given the option to participate anonymously, to deny recording, or to give responses only to certain questions (see recommendations by Wood 2006; Rathbun 2008). When I noticed that an interview partner was uncomfortable with a question, I did not push for an answer. Only with the respondents’ explicit approval were interviews recorded and transcribed.⁵² Moreover, to protect interview partners, transcriptions of interview sections were used and published based on the do-no-harm-principle, meaning that data that could be compromising to individual respondents was

⁵¹ Table 3 only includes interviews conducted with Bolivian interview partners, both formal and informal (background). Since some interviews were group interviews with more than one respondent, the number of interview partners is not identical to the numbers of interviews conducted. For more detailed information, see Appendix III.

⁵² With interview transcripts, I had help from a family member, who was not familiar with the project and had no specific interest in it. I outlined to her the importance of confidentiality and I verified that she deleted audio files and transcripts from her devices after the transcription process. Also, interviews with particularly controversial content were only transcribed by myself.

used anonymously.⁵³ Also, I did not reveal whom I talked to with other interview partners, unless I was recommended to them by other experts.

That interview partners represent very different segments of the Bolivian society gives the study a holistic view on the project. At the same time, on the individual interview level, the challenge persists to weigh responses against the personal interests, roles, and knowledge of interview partners, the social desirability, and the influence of my person on these responses. Robb, Moran, Thom, and Coburn (2015, 5) underline that a central challenge of conducting interviews in Bolivia is that “interview responses were often coloured by (...) political tensions and opposing viewpoints (...). Political positions and discontent thus strongly framed many of the interview responses.” In the preparation for my interviews and in the interpretation of my results, I reflected on these different biases.

I expected a positive evaluation bias from respondents working for the government, specifically the GNRE, since their income and professional status are directly tied to the initiative. At the same time, Bolivian bureaucracy is highly political and even lower management staff is usually replaced after a change in government (Bertelsmann Stiftung 2016). Therefore, support for the MAS, its political goals, and its flagship project of lithium industrialization in public administration is strong. With regard to voices critical of the lithium project, I noted that many influential mining analysts come from a political background other than the MAS and often held positions in former governments. At the same time, many analysts belong to a privileged and generally white sector of society and are not part of the indigenous power base of the MAS. This social and demographic divide nurtures mutual skepticism between these analysts and the government party. It is thus important to note that critical voices might also challenge the project for political reasons.

A further point that should be taken into consideration is that negative reporting on the lithium initiative frequently led to the exclusion of critical analysts from admittance to the project grounds and access to technical information (a point discussed in more detail in Chapter 6.2). I frequently

⁵³ Another strategy to confront challenges of personal exposure was to target, particularly on the national level, experts and analysts. Experts include bearers of specific knowledge on the subject, meaning figures of identification such as politicians, activists or unionists. Concerning the policy focus of the research, these experts are a more reliable source of information, since they are more knowledgeable on the program. Moreover, by targeting these public figures as representatives of their institutions, potentially compromising personal exposure is limited, as the positions of these institutions on the issues of concern are public knowledge (see Wood 2006).

experienced that analysts asked me for information about the status of the project since they did not have access to the relevant data, which impacts on the reliability of their analyses. I reflect on these biases and limitations throughout the analytical chapters, when juxtaposing different opinions and assessments of individual dimensions of the lithium program.

I also experienced that talking to critical experts and civil society groups was easier than approaching government sources. This created the risk of a selection bias towards critical interview partners, which I observed in many publications on the Bolivian lithium program that disproportionately interviewed critics of the program. The problem of accessibility of government sources was enhanced when, prior to the fieldwork phase, a NGO report (Guzmán Salinas 2014b) was published that questioned the viability of the project. This, I felt, resulted in a more careful and restrictive communication strategy on the part of the government, which made it more difficult for me to be granted access to high ranking decision makers in the program. Moreover, interviews with government employees, particularly of lower and middle rank, often involved seemingly standardized and superficial answers. Next to a lack of information, I noticed a fear of saying something “wrong” and reluctance to shed negative light on a project with which respondents were often personally invested.

Consequently, establishing contacts in the public sector was more time consuming. Nonetheless, I specifically targeted public sources to avoid a selection bias. To find contacts, I relied on accepted neutral actors, such as German organizations, as gate keepers. I also used personal acquaintances in Bolivia, went to official presentations of the involved institutions to establish informal contacts, and was persistent in calling on public institutions. Through this strategy, I managed to interview high ranking officials (such as two GNRE general managers and two department heads at GNRE, two members of the COMIBOL board of directors, and policy officers at the mining ministry). Moreover, the contact with all public institutions, when established, was forthcoming and informative. I particularly valued the opportunity to visit the plant in Llipi. While different non-government analysts have underlined in interviews with me that it is virtually impossible to access information from GNRE, I did not experience a closed-shop mentality. I could, for example, access the environmental impact study by writing a letter of request to the responsible institution.

This could be due to my German origin, granting me better access to government information. Different NGO interview partners stressed in their discussions with me that foreign nationals have

experienced a more open policy (e. g. interviews with O. Choque, 23.9.2015 and J. Campanini, 28.3.2016). Moreover, I felt as though my foreignness raised the interest in my project with many interview partners, particularly at the local level, supporting their decision to participate in the study. This was, on the one hand, because local inhabitants felt that finally they could voice their ideas and concerns about the project with a neutral actor. On the other hand, I was also frequently confronted with the expectation that I could transport local messages to people in charge. Following the premise of doing no harm – which also entails not creating false hopes and expectations – I was very clear about my research aim in the interviews. I clarified that I was conducting research to obtain a university title, that I had no connections to the government and could not influence policies. I also reiterated that the results of my study would reach the respondent in form of a short summary in Spanish (which I will send after the defense). My German origin was also a shortcoming when aiming at understanding Bolivian concepts and ideas. As I remain nested in my own cultural perceptions of the world around me, I need to accept that local Bolivian realities in the small salar communities, the way of life there, and particularly indigenous cosmologies underlying societal interactions will remain – to a certain extent – closed to me.

A gender-sensitive selection of interview partners was a challenge. My interviewees were mostly male. This results from the fact that most decision-makers that work in the mining sector (public, private, civil society) and on the lithium subject are men.⁵⁴ I, therefore, deliberately targeted knowledgeable female respondents to include their viewpoint in the analysis. In total, fifteen of my Bolivian interview partners were female; of which nine were interview partners at the local level. Five of my government interviews were with female respondents, yet none of my interviews with mining analysts. This also links to my own role as female interviewer in a male-dominated setting. Most of my interview partners were additionally considerably older than me, which, in some of my interviews, clearly influenced their viewpoints of me and their self-image in relation to me. In individual cases, I felt that I was lectured to rather than talked to and that I was asked to prove my knowledge about the context and the Bolivian mining sector in general to be accepted as an equal conversation partner. Yet, in general, I was treated with respect and openness by all respondents.

To limit the personal biases, I bring into the research, and the reactions this creates with interview partners, I aimed for an interviewer position that was as neutral as possible, not revealing my

⁵⁴ For example, Bolivia had 64 mining ministers since 1936, of which none was female (Espinoza Morales 2012c).

personal ideas and feelings about certain aspects of the project. At the same time, I was aware that I would not achieve complete neutrality because of my cultural background, my upbringing, and the fact that I unconsciously favor certain personalities and their opinions (compare Berry 2002; Diekmann 2005, 375–376). Throughout the research process, I reflected on these challenges and, when possible, remarked on potential intercultural biases in my field notes and was, at all times, open about the purpose of my research, my own role, and the (intercultural and technical) gaps of knowledge I had.

3.3 Methods of Data Analysis

For data analysis, I relied on triangulation, combining insights from literature review, document analysis, and interview evaluation. Data interpretation was conducted through content structuring qualitative content analysis (*inhaltlich strukturierende qualitative Inhaltsanalyse*) following Kuckartz (2005), while also relying on structuring techniques described by Mayring (2015). Data analysis was supported by the software program MAXQDA 12.

Content structuring qualitative analysis is a common strategy used to evaluate qualitative data, particularly interviews. Like all forms of content analysis, it seeks to reduce data complexity. It is based on an assessment of topic frequency, identifying similarities, differences, and the relationship between topics using a category and coding system. Codes are understood as a unit that captures the essential content of an interview sequence and are as such preliminary elements of structuring. Clustered codes form categories based on identified patterns in the data (Saldaña 2012) (Figure 3). The aim is to develop analytical categories that link content to theory (Kuckartz 2005, 43–44).

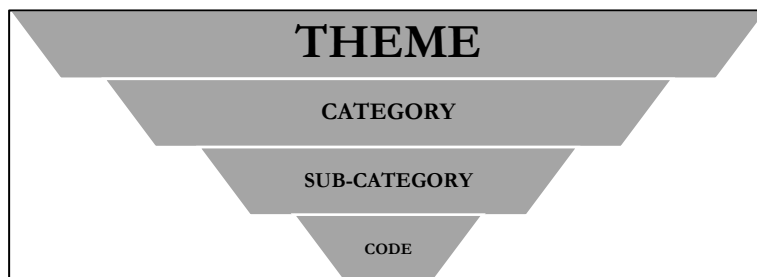


Figure 3: Relationship between Categories and Codes

Therefore, categories need to be identified both deductively, based on the theoretical model, and inductively, from the empirical material. Certain aspects, such as the local perception of lithium

governance, could only be assessed inductively through open coding. To support the analysis, interviews are clustered in groups of interview partners (members of the local, regional, or national government; academics and analysts; private sector employees; etc.). Moreover, different criteria are used to distinguish individual interviewees, for example, gender, political affiliation, or geography. This supports a balanced analysis down the road, which requires a consideration of different groups.

Prior to fieldwork, a theoretical model was developed from the existing literature which serves as a basis for the structured analysis (see Chapter 2.5 and Appendix I). It considers the different resource governance dimensions with relevance for local actor grievances. These dimensions serve as thematic categories for data evaluation and were used to develop the directory of interview questions and thus structured data gathering. In the model, resource governance was differentiated along four relevant components: project planning, stakeholder participation, revenue management, and cost management. Ownership is another important factor in this publicly organized extraction initiative. The model also delineates grievances along these governance dimensions, distinguishing between socioeconomic grievances, livelihood grievances, and political grievances. These grievances, it is hypothesized, also interact with factors beyond the resource project, linking to local experiences, values, beliefs, and perceptions.

In order to better understand the link between lithium governance and the development of grievances that can incite mobilization, four sequential steps were taken to evaluate the data.⁵⁵ Categories were developed and assessed, a coding manual was created, data was coded, and finally the material was evaluated.

⁵⁵ This structure was inspired by a process used by Hopf, Rieker and Schmidt (1995) in a study on authoritarianism and right-wing-nationalism as presented in Kuckartz (2005).

Development and Assessment of Categories

The evaluation began in the interview phase. Initial observations on relevant categories and sub-categories beyond the theoretically defined governance dimensions were annotated in the field diary. Structured evaluation then started with intensive text work, in which about 15 percent of interview material⁵⁶ was read carefully, guided by two questions:

- Which issues are mentioned by the participants relating to the governance of lithium?
- How do these issues shape the perception and interpretation of lithium and the lithium project; e. g. how do governance dimensions relate to positive or critical observations about the resource or the project?

The subsequently developed categories / sub-categories highlighted different aspects such as:

- Stakeholder involvement and individual interests vis-à-vis the lithium project
- Individual knowledge of the lithium project
- Assessment of costs and benefits of lithium exploitation
- Evaluation of lithium governance dimensions and government actuation

This first evaluation helped to further develop the coding manual, linking theoretically based categories on governance to response categories of the interview partners. Thereby, a focus was placed on indications of grievances and the identification of expectations towards the program, including local evaluations and expressions of values and beliefs in the salar communities linked to e. g. a mining-based development model. After distinguishing the main categories, the next code layer was established in which base categories were further specified and differentiated.

I coded based on the techniques described by Kuckartz (2005) and Saldaña (2012). New codes were added for unforeseen topics, developing additional sub-categories that had not been deduced from theory. If it was not clear how to describe a certain idea as a code, I used a paradigmatic quote as a provisional code or relied on paraphrasing techniques. Out of these indicators, more specific codes were developed at a later stage. Decisive quotes were also highlighted in the interview transcripts to be used as examples in the analysis. I also added memos to interesting or unclear text passages

⁵⁶ The 15 percent included interviews from all interview groups.

for further reflection in the evaluation phase. Text segments not relevant for the research were left uncoded and did not enter the evaluation.

Development of a Coding Manual

Based on data assessment, a coding manual was developed in which all categories, their sub-categories, and codes were defined and typical examples for each were given (see Appendix IV).

Coding of Material

In a second cycle, the complete material, including the material already revised in the first coding cycle, was analyzed and categorized based on the coding manual. The interview material was thereby matched with the categories and sub-categories. Already assigned categories and codes were in some cases changed and adapted. An example of a coded text segment is given in Appendix V.

Again, particularly interesting quotes, expressions and ideas were highlighted and commented on in memos. For each interview, a short summary was written. Bullet points summarized the interview partner's position towards the lithium project and important ideas of the interview. As interviews had been clustered in groups of interview partners based on certain characteristics such as origin, gender, and political affiliation, I could check based on these summaries whether certain ideas were more pronounced in specific regions or individual interview partner groups. At the same time, I could identify new groups based on similar ideas expressed by different interview partners.

Evaluation of the Material

After the categorization was finalized, MAXQDA was a helpful tool to gain an overview of category and code distribution by interview partner groups as a basis for an interpretative assessment of the research question. The structured summaries of the interviews were worked through again to gain an understanding of different groups-based interpretations of the lithium program and its governance.

The main actor groups and central categories of evaluation served as a structure for the interpretive part of this thesis. The analysis was carried out per chapter, combining relevant primary data,

secondary literature, and the interview material (by re-reading and re-checking notes and memos connected to the relevant categories for the chapter). Selected quotes from the interviews were included in the thesis, providing space for local opinions, and opening academic reasoning and categorization up to scrutiny.

While the outlined evaluation strategy allowed for a structured, controlled, and detailed evaluation of the material, it also embodies certain shortcomings. Methodological literature on content analysis, for example, recommends interview evaluation as group work with at least two researchers coding the material. Kuckartz (2005, 83), however, also underlines that this is an expensive and time consuming strategy which cannot always be followed, particular in PhD research. For the outlined reasons, I also coded alone and have consequently been dedicated to transparency in my data analysis process.

As recommended by Gerring (2004, 344), the secondary case on the Argentinean lithium program was analyzed predominately through a literature review, extended by three interviews with Argentinean academics. Consequently, the analysis process had less diversity in the data and was therefore less objective than the micro analysis of the contemporary lithium case, which is based on triangulation of a larger data set from different sources and the possibility of cross-checks. The Argentinean case can hence support an assessment of the validity of the study's findings beyond the Bolivian lithium program, but it is also limited in its scope, providing initial indications that would need to be assessed in more detail in further research.

The data analysis process is further specified in the Appendix, which includes the interview directory, the coding manual of applied categories, sub-categories, and codes as well as an excerpt from a coded interview as an example of the data evaluation process.

4 Resource Governance in Bolivia under Evo Morales (2006–2016)

4.1 Introduction to the Case Study Bolivia

To comprehend the dimensions of the conflict related to the Bolivian lithium program, it is important to understand Bolivia as a heterogeneous and deeply divided society while situating lithium industrialization in a long history of economic dependence on natural resource extraction. Since the Cerro Rico, the “rich hill”, was discovered near the city of Potosí in the sixteenth century, Bolivia has exported resources, exploiting first silver, then tin and rubber, and now mostly gas. The country is rich in natural resources. In addition to the world’s largest lithium resources, it owns the second largest gas fields in South America⁵⁷, and has important reserves of tin, silver, zinc, tungsten, lead, boron, gold, and bismuth (Vasters et al. 2010, 92). Not yet exploited are potential reserves of cadmium, chromium, indium, iron ore, nickel, palladium, platinum, and tantalum (Wacaster 2016). In 2013, eight percent of tin, five percent of silver, three percent of antimony, and three percent of zinc production globally came from Bolivia (ibid.). Yet, while Bolivia has nearly 500 years of mining history, it has no notable industry and predominately exports raw materials (PIEB 2014). In 2010, primary commodities accounted for 24 percent of GDP and 73 percent of exports (Rodrigues-Silveira 2014). Bolivia has one of the highest proportions of resource exploitation and fiscal dependency on natural resources and the worst performance on resource governance indicators in Latin America (ibid., 19–20).

Bolivia, which has a population of 11 million, is a diverse society with large social, cultural, and economic differences between regions and peoples. More than 60 percent of Bolivians are indigenous, belonging to one of 36 autochthonous nations. 30 percent of the Bolivian population auto-identifies as Quechua, 25 percent as Aymara (Bertelsmann Stiftung 2016, 3), while about 470,000 people belong to smaller lowland indigenous nations (Farthing and Kohl 2014, 9).⁵⁸ Bolivia

⁵⁷ These, however, only make up 0.2 percent of global gas reserves (Radhuber 2013, 134).

⁵⁸ Both quoted sources refer to the national census data of 2001. In the 2001 census, 62 percent of the population (older than 15 years) self-identified as indigenous (Instituto Nacional de Estadística 2015). The last Bolivian census of 2012 only registered an indigenous adult population of 41 percent (Instituto Nacional de Estadística 2015). When the census data was published, this provoked a controversy. In response, esteemed historian and ex-President Carlos Mesa concluded that “Bolivia is not an indigenous country by majority, but undoubtedly a country with a very important indigenous presence”, while other authorities such as the Minister of Culture, Marko Machicao, emphasized that the numbers do not challenge an indigenous population majority (Schipani and Mander 2015). Observers have highlighted that the drop in numbers can be assigned to technical shortcomings of the census which did not comply with UN standards. Moreover, the 2001 and 2012 surveys are, in general, incomparable as they were based on different types of questions (Tabra 2013). For a comparison of census data see CEDIB (2013b).

is divided into nine departments, 112 provinces, and 339 municipalities. Geographically, the country is comprised of eastern lowlands and western highlands.⁵⁹ Bolivia's geographic diversity has affected its social and economic development. The highland region is marked by mining and subsistent agriculture in inhospitable areas, while the lowland provinces profit from important gas fields and good soil for agricultural production. The agrarian reforms after the Revolution of 1952 abolished the hacienda system in the highlands but supported the rise of large agricultural industries in the Bolivian lowlands, the Crescent Region⁶⁰, mostly dominated by elite landowners with hardly any indigenous participation (Mesa, Gisbert, and de Mesa 2003, 650–659). In the Crescent Region, parallel centers of economic and political power developed vis-à-vis the seat of government in La Paz. Historically, culturally, and geographically anchored differences between the Bolivian lowlands and highlands have become more visible since the election of Evo Morales and his party MAS-IPSP⁶¹ in December of 2005 (Bertelsmann Stiftung 2016). In his first term in office (2006–2009), Morales' highland-based movement had to confront significant resistances from the Crescent Region in the Constitutional Assembly over gas rents, which resulted in lowland demands for regional autonomy.

As has been discussed, the MAS government is considered part of the “pink tide” or “new left” in Latin America. With its “socialism of the 21st century”, MAS has been a defining example of “new left” politics oriented towards the marginalized, indigenous population majority.⁶² It supported

⁵⁹ Bolivia is a decentralized republic composed of departments: La Paz, Oruro, Potosí, Tarija, Chuquisaca, Santa Cruz, Cochabamba, Beni, and Pando. The nine departments are governed by prefects elected every five years. They themselves are made up of 112 provinces administered by sub-governors and 339 municipalities governed by a mayor and a community council. Additionally, the Constitution (Art. 269 I) created the possibility to form Indigenous Original Peoples' Peasant Territories (AIOC) (see Chapter 5.4.4).

⁶⁰ The lowland provinces of Santa Cruz, Tarija, Pando, and Beni are jointly referred to as the Crescent Region (*media luna*). Sometimes Chuquisaca is also considered part of the area. The Crescent Region holds the main deposits of fossil fuels in Bolivia; 85 percent of gas reserves are in Tarija. Other sources of income include large agricultural industrial complexes (particularly in Santa Cruz) for soy, cotton, cattle, and sugar. Autochthonous population segments are smaller in the lowlands than in the highlands (e. g. 20 percent of the population in Tarija) and distributed over many different lowland peoples (Weisbrot and Sandoval 2008).

⁶¹ Movement towards Socialism – Political Instrument for the Sovereignty of the Peoples (*Movimiento al Socialismo – Instrumento Político por la Soberanía de los Pueblos*); the political movement or party of Evo Morales is often only referred to as MAS. Whether the MAS can really be considered a party is debatable, as it conserved union features without consolidating hierarchical party structures (Farthing and Kohl 2014, 14–15). According to Farthing and Kohl (*ibid.*), the MAS merges three competing philosophies (more or less successfully); indigenist, Marxist, and popular nationalist ideologies. Based on an electoral majority (the first since the reestablishment of democracy in 1982), Evo Morales was elected president in December of 2005. He took office in January of 2006.

⁶² Thereby, MAS politics have frequently been referred to as “populist”. There is an intense debate in the political sciences about the content of the term “populist” and the assignment of regimes to this group. Panizza (2005) outlines that the definition of “populist” is complicated by the fact that it may include diverging and contradictory (democratic and anti-democratic) political beliefs, while hardly any regimes described by the term will auto-identify as such. Most definitions of “populist”, however, concur that the term refers to a regime that discursively emphasizes a

political reforms, including the drafting of a new Political Constitution of the State (CPE), which was enacted after a national referendum in February 2009. The CPE redefines Bolivia as a pluri-national state. The idea of pluri-national, in comparison to “pluri-cultural” (as stated in the Constitution of 1994) is that the different cultures and languages in Bolivia stand equally beside each other. As Garcés (2011, 52) underlines, this ideology “would be a pathway towards self-determination (*auto-determinación*) as nations and peoples who would be able to define their own judicial systems” [highlights in the original].⁶³ The Constitution seeks to create a plurinational state by acknowledging diverse systems of production (such as communitarian economies), institutionalizing “indigenous originary peasant nations and peoples” (*pueblos indígenas originarios campesinos*, compare Chapter 5.4.4) and making the concept of “*vivir bien*”⁶⁴ the basis of policy making (CPE, Art. 8 and Art. 306). Especially because of this latter aspect, “among post-neoliberal visions, the pluri-national state project had the clearest anti-extractivist dimension (Andreucci and Radhuber 2017, 8).”

After the elections in 2005, expectations for the new government were high, with some indigenous groups seeking a *pachakuti*, a revolution that changes the societal foundation (Farthing and Kohl 2014, 17). Undeniably, the country’s first indigenous president has promoted indigenous political integration. His initiatives included the possibility of establishing indigenous autonomies, the recognition of the right to an intercultural education, the legalization of the coca leaf, and a requirement for public servants to learn an indigenous language. The 2009 national elections saw a historic surge in indigenous political representatives (Robb, Moran, Thom, and Coburn 2015, 8). During his first term in office, Evo Morales put emphasis on the national and international arena on the importance of indigenous and environmental rights.⁶⁵ For example, in 2007, he made the

divide between the “sovereign people” (which it represents) and an opposing group that symbolizes the status quo and the preexisting, dominant ideology (Deiwiks 2009). In this sense, populist can be used to describe some (yet certainly not all) “new left” regimes, which rose in opposition to political elites that had facilitated neoliberal structural adjustment and seek to represent the marginalized population majority.

⁶³ Garcés (2011), however, argues that pluri-nationalism as originally envisioned by indigenous organizations was tamed by the Constituent Assembly and that the new Constitution does not entail more than a minor support for indigenous participation in political decision-making.

⁶⁴ The good life – *sumak kawsay* or *vivir bien* (*buen vivir* in Ecuador) – denotes an alternative Andean form of living critical of excessive orientation towards economic growth. It was anchored as a basic principle in the Ecuadorian and Bolivian 2008 and 2009 Constitutions, respectively. The idea of *vivir bien* stresses, in contrast to the Western societal orientation towards individualism, the importance of communal life in harmony with mother earth as a basis for development. Development is not understood as purely economic, but as a component of wider societal change (Cortez and Wagner 2013).

⁶⁵ This is seen in his frequent repetition of the slogan “*pacha mama* or death”. The Quechua and Aymara word *pacha*, while usually translated as earth (also world, cosmos), simultaneously refers to time and space (Farthing and Kohl 2014, 24). As Fabricant and Gustafson (2011) point out, the *pachamamismo* is an important building block of the

United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) a domestic law (Law N° 3760 of 7.11.2007), giving indigenous peoples and nations the right to prior consent to extractive projects (later qualified by the new mining law; see Chapter 4.4). He also advocated far-reaching environmental rights, culminating in an own legal personality of mother earth (*pacha mama*), established in 2011 (Canessa 2012).⁶⁶

The heterogeneous MAS that paved Morales' way to the Presidency should not be understood as an indigenous or "ethnic" movement (Fabricant and Gustafson 2011; Schildt 2007). While Evo Morales' personal background helped him rise as an identification figure for the indigenous, particularly Andean indigenous, population, the MAS has always strongly catered to the interests of its base of coca growers as well as subsistent farmers, mining cooperatives, neighborhood organizations, and transport workers. These actors are often ethnically indigenous but do not always identify with their cultural traditions and ways of life (Canessa 2012). They supported the MAS not based on indigenous values but because of their mutual resistance to neoliberalism, privatization, and market opening to transnationals. Large mobilizations since 2003 brought the MAS into political power. It was only then that the organization emphasized an indigenous agenda and utilized Andean symbolism. In the so-called "process of change", its discourse was both nationalistic and ethnic and could therefore unite the population majority not represented by traditional political parties (Quiroga Trigo 2014). The MAS thus serves as an umbrella organization for very diverse social actors and, following Moira Zuazu (2009), should be understood as a heterogeneous movement that emerged in times of a fundamental crisis of the state by catering to a revolutionary nationalism deeply anchored within the Bolivian society.⁶⁷

While the Constitutional Assembly and the pluri-national ideology made Morales popular with the indigenous population majority, his nationwide electoral success is also strongly connected to the country's exceptional economic performance during an unprecedented resource boom. Between 2006 and 2012, mining generated annual average export values of 2.26 billion USD, a 448 percent increase compared to the period between 1995 and 2005 (Andreucci and Radhuber 2017, 6). In 2013, the economy grew by 6.8 percent and was one of the 25 fastest growing countries in the world

decolonial agenda of the MAS government. They also warn that this is a risky strategy, prone to the reduction of indigenous complexities to an easy "catch-all solution to the ecological and social challenges of capitalism" (ibid., 13).

⁶⁶ Through the Law on the Rights of Mother Earth (Ley de Derechos de la Madre Tierra), Law N° 071, 21.12.2010.

⁶⁷ Zuazu (2009) compares this to the rise of the *Movimiento Nacionalista Revolucionario* (Nationalist Revolutionary Movement – MNR) before the National Revolution of 1952. See subsequent chapter.

(Central Intelligence Agency 2014). Particularly gas revenues increased from 287 million USD in 2004 to 1.6 billion USD in 2007 (Kaup 2010), 2.8 billion in 2010 and 6 billion in 2014 (Strategic Forecasting, Inc 2015). This growth was, besides high prices before 2014, also related to the renegotiation of gas contracts by the Morales administration in 2006 and tax increases under his predecessor Mesa.⁶⁸ This resource boom as well as active social spending and massive public investments supported a notable improvement of living conditions and a decline in poverty.

Between 2005 and 2014, per capita GDP increased from 4,415 to 5,760 USD (PPP) (UNDP 2016) and poverty⁶⁹ declined from 60.6 percent to 39.3 percent (World Bank 2016), while income inequality was reduced below Latin American average (Bertelsmann Stiftung 2016, 13). The reserve assets soared to unprecedented 15 billion USD (nearly 50 percent of GDP) and provided the government with the funds to increase public spending (ibid., 16).

Socio-Economic Indicators	2005	2010	2014
GDP* (in billion USD)	9.55	19.65	33.2 ⁽²⁰¹⁵⁾
Per Capita Income* ^(2011 PPP USD)	4,415	5,054	5,760
GINI Coefficient**	58.5	49.6 ⁽²⁰⁰⁹⁾	48.1 ⁽²⁰¹⁵⁾
Poverty**	60.6 %	45 % ⁽²⁰¹¹⁾	39.3 %
Live Expectancy*	64	66	68
External Debt* ^(% of GNI)	75.3 %	32 %	27.5 % ⁽²⁰¹³⁾

Table 4: Social and Economic Indicators for Bolivia (2005–2010)

* Human Development Indicators of the UNDP (2016)

** Open Data of the World Bank (2016)

The increasing independence from international financial mechanisms allowed the MAS government to invest in expensive industrialization initiatives, such as the lithium program, as well

⁶⁸ The literature frequently talks about a nationalization of hydrocarbon resources under the Morales government but this is not the right term. Also under previous regimes, the natural resources were property of the state. The government of Sánchez de Lozada (called *Goni*) had, however, given private companies control over hydrocarbons in the moment of extraction (Supreme Decree N° 24806, 4.8.1997) (Kaup 2010). The Morales administration redeemed the decree and mandated the negotiation of new contracts (Supreme Decree N° 28701 “*Heroes del Chaco*”, 1.5.2006) but did not expropriate the private companies active in the sector (In these contracts, state oversight and an exclusive commercialization right for the state petrol and gas company YPFB was established and royalties were increased. For some sites, the state share of the revenues was raised from 50 percent or 60 percent to 75 percent and 82 percent; while for other sites previous conditions were kept (Behrens 2006). A substantial increase of royalties from 18 percent, established in 1997, had already been implemented under the government of Carlos Mesa (ibid.). Yet, the regulatory changes under the Morales government did not affect the nature of the Bolivian hydrocarbon sector which is still dominated by transnational companies that profit from structures implemented in the neoliberal era (Kaup 2010). Kaup (ibid.) consequently speaks of a “neoliberal nationalization” of the Morales’ administration and also more radical fractions within the MAS movement were very critical of foreign companies not having been expropriated (Farthing and Kohl 2014).

⁶⁹ Percentage of population living below the national poverty line.

as in poverty reduction campaigns. Social programs include the introduction of a public pension and cash transfers for school children and mothers, financed partly by the public oil and gas company YPFB and the mining corporation COMIBOL.⁷⁰ The minimum wage was increased by 40 percent since 2006 (Schmalz 2013, 57), public infrastructure was extended, and basic services for the poor were subsidized (Radhuber 2013). Resource money thus secured what the Bertelsmann Stiftung (2016, 3) calls a “project of neo-developmental⁷¹ modernization that combines a focus on state-led, socially inclusive development, characterized by high levels of public investment and an active social policy, with countercyclical macroeconomic policies.” Because of the resulting positive economic effects and a reduction in poverty levels, the governing MAS and President Morales have long enjoyed widespread and relatively stable public support. In October 2014, Morales was re-elected securing the two-thirds parliamentary majority the MAS held since 2009 (ibid., 29).

Yet, as Radhuber (2013, 261–264) outlines, these cash-transfer initiatives target population segments selectively and do not contribute to structural changes in the social systems which remain highly fragmented and underdeveloped. Moreover, as will be outlined in the subsequent chapters, the continued economic orientation towards resources as economic backbone exposes inconsistencies in MAS policy making; an expansion in extractive initiatives contradicts environmental protection and indigenous sovereignty over land as advocated by the Constitution. These discrepancies resulted in a breach within the miscellaneous MAS power base. Critics also

⁷⁰ The state minimum pension *Renta Dignidad*, which was introduced in 2008 as a tool for poverty reduction, offers a public retirement benefit even for those not insured through social security. The benefit is financed to 27 percent from a direct tax on oil and gas (Pellegrini and Ribera Arismendi 2012). The total cost amounted to 255 million USD in 2011. In this context, it needs to be noted that a similar program, the state pension *Bonosol*, was introduced in the first government of Sánchez de Lozada. It was abolished under his successor, Banzer, and then reestablished in a much smaller version during the second *Goni* Presidency (Mesa, Gisbert, and de Mesa 2003, 765–779).

The program *Juancito Pinto*, introduced in 2006, is an annual cash benefit paid to families whose children attend 1st to 8th grade. The cost reached approximately 52 million USD in 2010 and is partly covered by YPFB and COMIBOL (Radhuber 2013). Introduced in 2009, the *Juana Azurduy* program provides cash benefits for pregnant women, pre- and post-natal health services, and the care for children under two years of age (ibid.).

⁷¹ Neo-developmental refers to the developmentalist approach followed by Latin American countries from the 1940s to the early 1970s. *Desarrollismo* as the predominant economic strategy was based in the idea that technological innovation, entrepreneurship, and consumption are key components of development, while external factors are irrelevant. This linear modernization agenda was widely challenged by the Latin American dependency school (most importantly Prebisch 1949 and Dos Santos 1970). This school outlined the significance of the position of the region in the global economic system (in which industrialized countries control e. g. technology and prices) and the existing dependence structures between Latin America, the periphery, and the industrialized countries, the core (see Wallerstein 1976; Galeano 1979; for a summary see Halperin Donghi 1991, 496 et seqq.). In line with the interpretation of the Bertelsmann Foundation above, neo-extractivism research argues that “pink tide” governments such as the MAS in Bolivia are again strengthening these extractive enclave economies as a basis for socioeconomic development, reviving the developmentalist agenda (Gudynas 2013, 2015a; Svampa 2012, 2013).

comment on the selective or divisive nature of MAS policy making, saying that it privileges indigenous over non-indigenous Bolivians, MAS followers over the independent civil society, and highland indigenous interests over the demands of lowland peoples (Canessa 2012; Radhuber 2013).

Since 2015, these emerging perceptions seem to affect Morales' electoral results. After losing support in the 2015 regional elections in February 2016, the president lost a referendum that would have allowed him to run for another term in office. This can also be linked to a love and corruption scandal involving Morales personally (Londoño 2016).⁷²

Also, resource prices began to decline after 2012, reducing the government's income stream. By 2013, the value of mineral production had decreased by 18 percent compared to 2012 (Wacaster 2016). The market for most Bolivian minerals, including silver, tin, zinc, lead, and tungsten tumbled. Silver prices, for example, dropped from an all-time high of over 4,000 USD (per fine ounce) in 2011 to 1,730 USD in June 2016, which is similar to price levels during the crisis in 2007 and 2008 (Index Mundi 2016). Tungsten dropped from more than 50 USD per kilogram in 2012 to 27 USD in June of 2016 (InfoMine 2016). Also, gas prices have declined and productivity of Bolivian hydrocarbon fields has considerably lowered (Chavéz Rodríguez, Szklo, and Lucena 2015). These price drops have a direct effect on the budgets of the central, departmental, and many local governments. While mining rents had already declined by 23.9 percent between 2014 and 2015, they continue to diminish in 2016. Rents were 18 percent lower in the first trimester of 2016 compared to the previous year.⁷³

This links back to the theoretical discussion on price volatility in the resource sector which is exacerbated by the low tax regime in Bolivia that is traditionally compensated for with income from commodities (Held 2013). In the light of declining prices, how well prepared the Bolivian economy is to confront a negative price shock and how long popular cash-transfer and investment programs

⁷² The goal of the referendum in general was to change Article 168 of the Constitution and to remove presidential and vice-presidential term limits. Shortly before the referendum, a Bolivian reporter revealed a past secret relationship between the president and a young lady named Gabriela Zapata, out of which a child had been born. Problematic detail is that Gabriela Zapata might have profited personally from this relationship since she held (despite questionable qualifications) a high paid position at the Chinese company CAMC which was, among other projects, contracted by the Bolivian government for the construction of the potassium plant (Londoño 2016).

⁷³ Rents decreased in six departments and increased in three, the latter mostly because of gold production expansion (Mamani 2016). Rent declines are only significant in Oruro and Potosí, where rents account for 17 percent and 32 percent of departmental budgets respectively, while in other departments mining budgets contribute between 3 percent and less than 1 percent (Sandi Bernal 2014, 43). For Oruro, however, effects were dramatic, with rent declines of 45.5 percent (Mamani 2016).

can be sustained under worsening economic conditions without massive debt creation become important questions (see Chapter 2.3.1). The following chapter on the history of mining in Bolivia will outline how previous resource busts have resulted in textbook resource curse predictions. Learning from lessons from the past and the management of the ongoing resource price crisis will be central for the political survival of the MAS government. High-value lithium with stable price increases could be a trump card in this calculation.

4.2 The Bolivian Mining Sector from a Historic Perspective

The Bolivian lithium program is administered by the state mining company COMIBOL in the traditional mining region of western Bolivia. The program can thus be better understood when placed within the historic context of Bolivian mining and its significance in the collective memory of the country. As many of my interview partners echoed, “Bolivia is a mining country with a very long tradition” (interview with J. C. Montenegro, 5.11.2015). Particularly in the highlands, mining shapes the people’s socioeconomic reality, cultural perceptions, and their relationship with the environment. Bolivians both depend on and suffer from mining. Mining grievances cannot be separated from the entrenched internal and external dependence on raw material exploitation. On the following pages, the historic development of Bolivia as commodity exporter, and, to a certain extent, an example of the resource curse theory, is briefly outlined as a basis for understanding continuities and contradictions in mining and lithium politics.

Mining has played a central role in Bolivia’s economic, political, and social history since colonial times. In 1545, the largest silver deposits in the Americas were discovered in the Cerro Rico, which produced 50 percent of global silver and gold for a century (Farthing and Kohl 2014, 25). The boom resulted in the foundation of the city of Potosí and the discovery of silver caused a fundamental and continuing orientation towards primary commodity exportation in western Bolivia. According to Wallerstein’s world system theory (1976), inspired by Latin American dependence theories (see Prebisch 1949; Dos Santos 1970; see Footnote 71), the domination of Europe over the mining economies of the Americas represents the initiation of the modern global economic system, where primary resource extraction in the periphery supported industrialization and accumulation processes in the core. At the same time, colonial mining based on the exploitation of indigenous and rural labor laid the groundwork for structural poverty (Galeano 1973) and the

emergence of structures of discrimination that are still omnipresent in modern day Bolivia (Orihuela and Thorp 2012).

On the foundation of primary resource exploitation, Potosí grew to be one of the richest and most populated cities on the planet in the 16th and early 17th century (Galeano 1973) and coined the Spanish saying “it’s worth a Potosí” (a fortune). Bolivian independence in 1825 did not change much about the working conditions for the poor and, according to Orihuela and Thorp (2012), resulted in further deterioration of the living conditions for the indigenous labor force. After independence, the extractive orientation of the country reached a new peak when tin was discovered in 1861. By the end of the century, tin, a crucial war material, surpassed the declining silver returns and controlled the Bolivian political economy until the 1980s (Klein 2003, 155 et seq.). By the turn of the nineteenth century, Bolivia was one of the leading tin producers worldwide and tin mine owners became some of the wealthiest individuals of their time – dominating Bolivian politics and society for half a century (Orihuela and Thorp 2012).⁷⁴ While tin wealth initiated modernization and urbanization processes (Mesa, Gisbert, and de Mesa 2003, 547), these “mining operations of the late 19th century contributed little to national economic development because for the most part, they were organized in “enclaves” isolated from the functioning of the national economies”(North, Clark, and Patroni 2006, 3).

The Bolivian economy did not diversify. According to the Argentinean historian Halperin Donghi (1991, 407), Bolivia in the tin era “exemplified the ideal type of an oligarchic republic on the consolidation phase of a neo-colonial order.” Until well into the 1930s, Bolivia was fundamentally a rural society, marked by a tremendous divide between the wealth of the tin barons and the poverty of the indigenous and mestizo majority who lacked political representation. A major turning point was the 1932 to 1935 Chaco War with Paraguay.⁷⁵ The military aggression, triggered by the

⁷⁴Three names stand out: Simon I. Patiño, who controlled about 50 percent of the Bolivian tin industry and was Bolivia’s most important private banker; Mauricio Hochschild, a German-born Jewish engineer; and the Aramayo family. The latter two shared the other half of Bolivian tin production. Patiño also possessed substantial non-Bolivian holdings, controlling large tin smelters and refineries in Europe and North America. The budget of each of the three enterprises far surpassed the Bolivian national budget (Knudson 1970). The sheer unimaginable wealth of the Bolivian tin barons, as they are frequently called, cannot solely be attributed to the extent of the tin resources, mining luck, or beneficial investments. Their wealth is also the result of poor tax policies and the high price of tin in the international market in times of major military events, most importantly World War I (Klein 2003).

⁷⁵The Chaco War between Bolivia and Paraguay was one of the bloodiest military confrontations in Bolivian history and continues to be a central element in the country’s collective memory (expressed in the fact that the hydrocarbon nationalization decree of the Morales government of 2007 was called “Heroes of the Chaco”). The Chaco War is often seen as directly linked to the expansionist politics of the US-company Standard Oil in Bolivia and British Dutch

government of Salamanca, left 65,000 dead (about 25 percent of the Bolivian soldiers) and led to an alienation of a whole generation with the existing elite-based political system (Klein 2003). Moreover, the links of the origin of the Chaco conflict to interests of the foreign oil companies ensured widespread public support for resource nationalization (see Footnote 75). As put by the historian Klein (2003, 184); “this radical reinterpretation of the Bolivian reality was a fundamental attack on the racist consensus of Bolivian society and the oligarchic nature of its political and economic life.”

In 1936, Bolivia nationalized oil and gas and founded the state hydrocarbon company YPF as well as several left-wing parties. In the mining sector, the post-war period brought an economic depression and increased organization of laborers against precarious working conditions. The Bolivian mine workers became a radical opposition force (Quiroga Trigo 2014). Among many strikes and violent confrontations, the Catavi massacre of 1942⁷⁶ was the most dramatic. The continuous violent suppression of popular participation demands and radical change supported a stronger integration of the opposition groups and rallied them towards a fundamental overthrow of the traditional system, culminating in the National Revolution of 1952.⁷⁷

Oil in Paraguay. Yet, the causes of the war were manifold and the incompetence in political and military leadership in both countries should not be underestimated. Nonetheless, the interpretation of the Chaco War as an oil conflict is central to the post-war period; the war led to specific political and economic decisions such as the nationalization of Standard Oil and the foundation of YPF (Klein 2003). The Chaco War and subsequent nationalizations did not, however, curtail foreign involvements in resource management. In 1942, in the light of the resource demands of World War II, the US government presented the famous Bohan Report with economic suggestions that the Bolivian government eagerly implemented, further cementing the country’s position as raw material exporter (Radhuber 2013, 137–38).

⁷⁶ Catavi was a worker’s camp for several mines owned by Simon I. Patiño and the location of strikes for labor rights and wage increases in 1942. The military government of President Peñaranda catered to Patiño’s interests and sent military forces against the protesters, leaving many dead; government sources claimed 19 casualties, while opposition politicians and miners estimated the death toll to be between 400 and 700. The Catavi incident was crucial for the political developments of the post-war years; it supported the fall of President Peñaranda and the ascent of the opposition party MNR to power (Knudson 1970).

⁷⁷ In the National Revolution of 1952, the MNR, supported by organized labor, seized government power after several days of street fighting. The National Revolution brought universal suffrage and made indigenous people citizens with equal rights (Knudson 1970). The MNR also initiated an agricultural reform that abolished the large private land holdings (*latifundios*) in the altiplano (yet not in the eastern lowlands) and increased investments in agriculture in the Crescent Region (particularly Santa Cruz) which laid the groundwork for the large agro-industrial wealth of the present (Mesa, Gisbert, and de Mesa 2003, 650–659). Orihuela and Thorp (2012, 35) point out that the land reform could have been a major step to eradicate inequalities but that its poor planning and underfinancing “ended up democratizing poverty and re-creating power relations.” In 2007, five percent of the Bolivian population still controlled 70 percent of agricultural land (Farthing and Kohl 2014, 1). Moreover, as will be outlined in Chapter 5.4.4, the land reform also weakened indigenous community organizations and supported a re-definition of indigenous identities as rural farmers (Albó 1994).

The National Revolution was the first important caesura in the privately organized mining sector. It resulted in the creation of the state mining company COMIBOL in 1953 and the subsequent nationalization of the largest tin mines in the country. As a consequence of the expropriation, COMIBOL administered two-thirds of the tin mining industry in the country (Klein 2003, 213) with an estimated capital of 34.5 million USD (Burke 1987).⁷⁸ It was briefly the second largest tin producer in the world (Espinoza Morales 2010, 116). In 1952, the mining industry represented 80 percent of Bolivian national income (Mesa, Gisbert, and de Mesa 2003, 660). As Burke (1987) summarizes: “Henceforth, the prosperity and growth of the Bolivian economy was intimately linked to that of COMIBOL.”

Simultaneously, first mining cooperatives were formed in the post-revolutionary years. Mining cooperatives are self-organized groups of workers that exploit mines without being employed by a public or private organization. While the Cerro Rico in Potosí has been worked by cooperatives since 1929, it was only after the National Revolution that mining cooperatives were legalized and started to support COMIBOL activities (Caselitz 2013). In 1968, the Federation of Cooperative Miners (Federación de Cooperativas Mineras – FENCOMIN) was founded (Quiroga Trigo 2014).

The phase of public mining control continued well into the 1960s. This period is characterized by low global resource prices and declining mineral output due to neglected investments into technology since the 1930s (Mesa, Gisbert, and de Mesa 2003).⁷⁹ Moreover, decision-making power at COMIBOL was substantially influenced by organized labor. Unions held significant rights, including veto powers concerning labor conditions and welfare issues, and supported an increase in the COMIBOL labor force as well as in wages and benefits⁸⁰ (Espinoza Morales 2010). This resulted in a further decline of mineral output and huge financial losses, which surpassed 10 million USD per year by the end of the 1950s (Burke 1987).

⁷⁸ COMIBOL also exploited lead, silver, zinc, tungsten, bismuth, copper, and gold and owned a train line, power stations, farms, hospitals, housing complexes, and schools (Espinoza Morales 2010, 128).

⁷⁹ The year of Bolivia’s largest tin output remains 1929. The decline of tin resources and the tumbling mining sector were among the reasons why the tin barons did not oppose nationalization more vigorously (Klein 2003, 211–12). Political pressure from the US-government and economic pressure by Patiño’s smelting monopoly secured 16.2 million USD in reimbursements for confiscated mines (Espinoza Morales 2010, 114).

⁸⁰ Thereby, COMIBOL often re-employed earlier laid-off miners who were not in the condition to work underground. As a result, by the early 1960s, two-thirds of its employees worked in administrative positions, while on the global scale two-thirds of the labor force would work in the mines (Burke 1987).

In addition to the crisis at COMIBOL, land reform implemented as a result of the National Revolution added costs which could only be offset by accepting significant monetary aid from abroad. By the late 1950s, Bolivia was the largest recipient of US foreign aid in the world; its budget depending to one third directly on US capital (Klein 2003, 218). In return for the monetary support, the Bolivian government guaranteed hydrocarbon interests of private US companies in the country. The inefficient public mining industry with high costs and little investments would have collapsed, had tin, oil, and gas prices not started to rise from the mid-1960s onwards (interview with J. Villalobos, former mining minister, 4.12.2015). High prices and low interest rates supported a renewed export-led development boom as well as the contraction of further international debt by the different military juntas that ruled the country nearly without interruption from 1964 to 1982 (Cortez and Wagner 2013, 222 et seq.). The fragile balance collapsed in the severe downturn that followed the boom years of the 1970s. In the light of the oil and tin crises, in the early 1980s Bolivia entered the most severe depression of its history, marking the end of predominantly state controlled mining.

As analyst Pablo Villegas from the NGO CEDIB elucidated (interview, 23.3.2016), “the price curve for minerals is the history of Bolivia.”⁸¹ Bolivia’s export-oriented development model was completely dependent on a volatile international market for unprocessed commodities. There is a striking resemblance of the post-1952 history of ups and down in the Bolivian political economy and the dynamics described by Auty and Gelb’s (2001) classic article on the resource curse, *Political Economy of the Resource-Abundant State*. In boom years, the seemingly infinite inflow of rents relaxed market discipline and the efficiency of investments. To disguise clientele politics, the government employed indirect, nontransparent forms of rent distribution such as job creation in the public sector. This led to an over-extended state and an unsustainable dependency on resource rents, which could only be kept running based on debts when prices decreased. In the moment of economic decline, the accumulated debt resulted in macroeconomic imbalances, which supported economic collapse and the rise of neoliberalism in the years to come.

⁸¹ Original quote: “La curva de precio de minerales es la historia de Bolivia.”

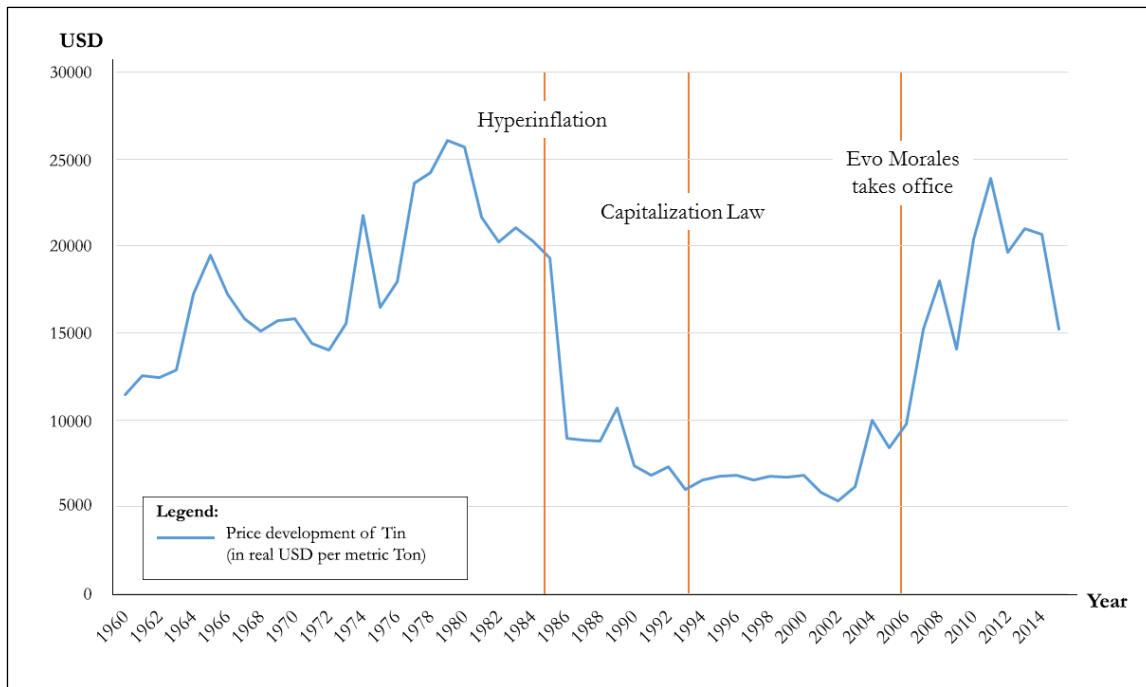


Figure 4: Tin Price Development in Real US Dollars (1960–2014)

In addition to the fragile economic situation, Bolivia also had nearly two decades of military dictatorships. In 1982, democracy was reestablished in Bolivia. Yet, democratic structures were weak and the governance system worked only as a “pacted democracy”; traditional parties, whose members came from old powerful and rich non-indigenous families, developed a rotating system for the Presidency. The indigenous population majority could only participate in national politics by choosing between hand-selected candidates, none of whom represented their interests. This model of governance produced political stability, but at the same time resulted in mounting distrust in the democratic system (Bertelsmann Stiftung 2012).

At the same time, the economic picture in the beginning of the 1980s was bleak: prices fell (see Figure 4), state companies had low productivity, and there was tremendous public debt. Accelerated by the tin market crash⁸², international market conditions resulted in negative growth rates and inflation rose to 25,000 percent by the end of 1985 (Mesa, Gisbert, and de Mesa 2003, 745). Under

⁸² In 1985, after the insolvency of the International Tin Council (ITC), the global tin market collapsed (see Figure 4). ITC members had manipulated tin prices to confront the decline of demand (Klein 2003, 246). In the wake of the crash, the ITC had stocked the equivalent of one-and-a-half years of world tin consumption and when the ITC could no longer obtain funds to buy tin, the market crashed, and with it, the Bolivian economy (interview with economist R. Jordan, 7.4.2016). Bolivia was particularly hard hit by the tin market crash, as it was the least efficient mayor tin producer in the world with the highest cost product (Klein 2003, 246).

the Washington Consensus⁸³, the government of Victor Paz Estenssoro implemented a radical structural adjustment program in 1985, cementing economic orientation towards export-led growth (Arze and Kruse 2004). The neoliberal reform package included: deregulation, floating exchange rates, subsidy cuts for social policies, currency depreciation, and dismantling the public sector, including state mining (Arze Vargas and Kruse 2004; Schildt 2007). In 1986, COMIBOL was divided into five independent subsidiaries and two autonomous smelting companies. Its unprofitable mines were closed, leading to the layoff of nearly 25,000 miners (Espinoza Morales 2010, 115). Hence, COMIBOL became a mere administrative institution which managed mining activities by shared-risk contracts and was not allowed to become directly involved in exploration or exploitation.

While COMIBOL was in de-facto hibernation, state mines were taken over by private cooperatives organized by unemployed miners. This laid the groundwork for the rise of cooperative mining during the Morales government (Espinoza Morales 2010). The weakening of public mining institutions and the lay-off of thousands of miners debilitated the Union Federation of Bolivian Mine Workers (FSTMB), the National Workers Union (COB) and traditional left-wing parties (Fabricant and Gustafson 2011; Farthing and Kohl 2014). While many miners migrated to urban centers, supporting a rise of informal economies, urban poverty, and the expansion of the city of El Alto, other highlanders migrated to the lowlands and became coca growers, transport workers, and/or subsistent farmers, particularly in the Chaparé tropical region in Cochabamba. Thereby, the powerful mine worker force fragmented and became more integrated into the capitalist system.⁸⁴ This explains the limited protests of mining and workers' unions against the political system in the 1980s and 1990s, an opposition that was largely taken up by communal organizations, peasant

⁸³ Financial aid from the World Bank and the IMF (the Bretton Woods Institutions in Washington, hence the name “Washington Consensus”) was bound to neoliberal structural adjustment programs, also referred to as shock therapy. The program was piloted in Bolivia, where the deepest reforms were implemented (Arze and Kruse 2004). In the 1990s, institutional reforms expanded shock therapy strategies to provide investment opportunities for (foreign) private companies.

⁸⁴ A result of the migration to the lowland tropics was also a surge in coca and cocaine production, which supported an extension of the US “war on drugs” in the region (widely accepted by acting Bolivian governments). Increasing eradication of coca plants and resulting violence led to a politicization and radicalization of the union-experienced former miners (Farthing and Kohl 2014). Somewhat ironically, it was particularly the decentralization supported by the Law of Popular Participation of the neoliberal *Goni* government that in 1994 provided political opportunity structures for newly mobilizing groups, such as the coca growers in Chaparé, the neighborhood councils of El Alto or the landless movement (Fabricant and Gustafson 2011). Additionally, Law INRA of 1996 allowed for collective land rights and created autonomous governance areas on the local level (ibid.; see Chapter 5.4.4). In the Chaparé, union leaders could frequently secure local political offices and gain experiences, ultimately paving the way for the ascent of Evo Morales to nation-wide political leadership (Farthing and Kohl 2014).

unions⁸⁵, and the evolving indigenous rights movement (Tapia 2008). The initiation of a visible “indigenous awakening” in Bolivia was the 1990s March for Territory and Dignity from the Bolivian low- to the highlands, leading to further mobilizations of indigenous peoples against existing political, social, and economic structures in the years to come (Canessa 2012).⁸⁶

In the years following the economic breakdown and in light of rising social protests, the Bolivian government urgently needed money. Already under military regimes, Bolivia had started to develop its hydrocarbon resources (which in 1983 had replaced tin as Bolivia’s most important export good) but the government lacked capital to further explore gas deposits. Strongly supported by the World Bank, the central government encouraged private investments in hydrocarbons. In 1994, the capitalization law was passed. This allowed for private majority investments in state companies, whereby decisive control over hydrocarbons and most of the rents were transferred to transnational corporations. In 1996, YPFB was privatized and a new hydrocarbon law was approved (Law N° 168, 30.4.1996). In 1997, a new mining code was passed (Law N° 177, 17.3.1997). Both legal frameworks further liberalized the sectors, gave clear preferences to foreign investments and enhanced the benefits for private capital. The most dramatic measure was the reduction of the tax on hydrocarbon income from 50 percent to 18 percent (Kaup 2010). As a result of private investments in exploration, large gas fields, the *mega campos*, were discovered. These findings increased the estimated gas resources more than tenfold between 1997 and 2003 (Mesa, Gisbert, and de Mesa 2003, 766–767).

During these difficult economic times Bolivia made its first step towards lithium industrialization. In the late 1980s, the US-company Lithium Corporation of America (LITHCO, now: FMC) started negotiations for lithium exploitation in the country. However, the contract signed in 1990 was annulled by the Bolivian government following parliamentary struggles and regional protests against

⁸⁵ This refers to the land movement which evolved after the National Revolution. In 1979, the peasant union federation CSUTCB (*Confederación Sindical Única de Trabajadores Campesinos de Bolivia* – Unique Federation of Farm Workers of Bolivia) was founded. As will be outlined further on, the CSUTCB member organization, the regional union FRUTCAS, was, as a close ally of the MAS movement, an impetus giver for the lithium project.

⁸⁶ Clear differences existed between lowland and highland indigenous mobilizations. Lowland peoples organized later than highland groups (their national organization CIDOB was only founded in the early 1980s) and rallied around indigenous emancipation demands. In comparison, highland identities often merged with class consciousness as a result of the National Revolution. An example is the Aymara intellectual movement *Katarismo* of the 1970s (see Albó 1994). Also, the revolutionary MNR government actively supported an identification through rural (campesino) origins rather than indigenous identities as a modernization project (Farthing and Kohl 2014). Consequently, as Canessa (2012, 12) sustains, in the highlands in the 1980s and 1990s “many of these people mobilizing were not doing so as indigenous peoples per se but, rather, as Bolivian citizen who happen to be indigenous.”

the distribution of lithium benefits (Rupp 2013) (see Chapter 5.2).⁸⁷ As will be outlined in the subsequent chapters, these protests were not as intense as the mass mobilizations over water and gas that followed in the new millennium. These resulted in the collapse of the “pacted democracy” and a fundamental change in national government.

The nationwide uprising began with the Cochabamba Water War in 2000.⁸⁸ These large-scale protests against water privatization in Bolivia’s third largest city became known internationally as the first successful protests of a local population in the Global South against neoliberal market reforms (Simmons 2016b, 105). As Farthing and Kohl (2014, 29) put it, with the Cochabamba Water Wars “Bolivia morphed again from the neoliberal poster child to a leading light of the anti-globalization movement.” The mobilizations in Cochabamba were followed by nationwide protests, the Gas Wars of 2003 and 2005, which resulted in the resignation of two consecutive Bolivian presidents and paved the way to power for coca grower union leader Evo Morales and his MAS movement.⁸⁹ Against the backdrop of spreading discontent, the MAS was able to unite a coalition

⁸⁷ For the Bolivian policy analyst Fernando Molina, the lithium protests were a first signal of the recovery of the left-wing nationalists (vis-à-vis the privatization supporters) after their great defeat through the structural adjustment policies of 1985 (interview, 13.4.2016).

⁸⁸ The Water Wars are often incompletely interpreted as a mobilization of a local community against increasing water tariffs following privatization (Simmons 2016b). Water had for a long time been a sensitive issue in Cochabamba. The agricultural region around Bolivia’s third largest city (the breadbasket of the country) suffered from periodical water shortages which soaring migration after the collapse of the mining industry only intensified. The inability of local governments to confront this problem led to the development of elaborated communal irrigation and water distribution systems. A central project idea in the 1980s and 1990s was the construction of the Misicuni Dam to solve the region’s water problem. Yet, the expensive project was set aside when the government of Sánchez de Lozada, also following pressures from the World Bank, offered the municipal water company to private investors. In 1999, a 40-year monopoly on water supply was granted to Aguas del Tunari, which was only at a later point identified as a subsidiary of the multinational Bechtel corporation. Soon afterwards, prices increased by up to 50 percent, while the contract also affected water structures that had been built and maintained by the communities. This, together with the end of the Misicuni dream, supported the escalation of water grievances as the contract severely questioned local water practices and customs (Simmons 2016b). These water grievances initiated a resistance movement which included protesters from all parts of Cochabamban society, crosscutting longstanding cleavages of class and ethnicity, while inspiring movements to come (Simmons 2016a, 2016b). The protests escalated in different waves and after many days of street fighting, culminating in the death of a teenager, the emergency status was declared in April 2000. The same month, the government annulled the contract with Aguas del Tunari. In 2001, Bechtel and a Spanish consortium partner sued Bolivia for 50 million USD in damages and lost profits before the International Centre for Settlement of Investment Disputes of the World Bank, but the lawsuit was withdrawn in 2006 following an international civil society campaign (Earthjustice 2006).

⁸⁹ In 2003, 21 heterogeneous organizations, including neighborhood organizations, workers’ unions, and war veterans, supported by the indigenous Unity Pact of lowland and highland indigenous peoples and headed by the coca growers and their union President Evo Morales (Farthing and Kohl 2014), protested against tax increases, neoliberal resource practices, and the American free trade zone (Radhuber 2013). They advocated for the implementation of a constitutional assembly (ibid.). These protests intensified after confrontations with the military resulting in more than 30 fatalities. A deal that allowed US oil companies to export Bolivian gas through Chile further incited the uprising (ibid.). In October 2003, an unconditional strike was proclaimed: demands included gas nationalization, rewriting the Constitution, and the resignation of President *Goni*. This strike resulted in street fights with at least 60 deaths, more than 400 injured, and the escape of *Goni* to US exile (ibid.). In 2005, under successor

of indigenous, working-class, and nationalist groups against neoliberal reforms and the governing elites with two central demands: During the first Morales government (2005–2009), democratic institutions were strengthened and a new social contract was implemented through the installation of a Constitutional Assembly empowered to rewrite the Constitution. Second, the government nationalized resources, including gas (Farthing and Kohl 2014; Radhuber 2013).

This brief historic overview outlines the tremendous importance resources and mining have had for the economic and social history of Bolivia. The mining economy's ups and downs, which resulted both from international trends and national governance failures, have been triggers of Bolivia's major political and economic crises. From the colonial era when silver was discovered until long after its independence, Bolivia has only interacted with the global economy through primary commodity exports. This has resulted in unequal partnerships between Bolivia and other countries. This historic legacy of a primary commodity dependence, combined with unequal power relations fostered by a global capitalist economy, can be seen as the root-cause of structural poverty of the Bolivian mining regions and the country as a whole (Galeano 1973). Internal migration to the mining centers, which began in the colonial era, resulted, for example, in the depopulation of rural areas around Potosí and a destruction of agricultural systems. This produced the extreme poverty that characterizes these regions even today (Tejada Soruco 2011, 16). Bebbington (2012, 3–4) concludes that “both historical and contemporary political economy cannot be understood separately from extractive industry (and vice versa) and therefore, by implication, that in the Andean region at least, development cannot be theorized separately from the subsoil.”

This is also true for Bolivia under Evo Morales. Current mining policies and lithium industrialization can best be understood if contextualized within the long Bolivian history of extractivism and dependence on resource exports shaped by international market developments and global technological trends.

President Mesa, new discontent emerged between the strong social movements and the government over tax and rent participation in gas income; Mesa resigned as well. For a more complete description of the MAS rise to power and the Gas Wars see Schildt (2007), Zelaya Sánchez et al. (2013), and Radhuber (2013).

4.3 The Organizational Structure of the Mining Sector

The MAS “process of change” was, particularly in the beginning of Morales’ rule, widely supported by miners and mining organizations. Consequently, resource politics (particularly regarding gas) became a central topic of the political agenda, focusing on a stronger role of the central government in resource management. According to the first National Development Plan 2006–2010 (Plan Nacional de Desarrollo – PND), Bolivia is a productive country that manages its resources in a sovereign manner and industrializes them in the country in order to regain national dignity (Ministerio de Planificación del Desarrollo 2007). Amongst the first government initiatives in the resource sector were the renegotiation of gas contracts with transnational companies and the reestablishment of COMIBOL as a public mining company in 2007. Yet, while the government revenues in the gas sector were substantially increased, public mining continues to be of secondary importance. In the aftermath of the neoliberal restructuring, the Bolivian mining sector is still predominately organized around private capital; also ten years into MAS rule. The Bolivian lithium project is one of COMIBOL’s few large public mining projects.

The Bolivian mining sector can be divided into three branches: state mining, private medium-scale mining, and cooperative mining. There is also small-scale subsistence mining, which is of negligible national importance.⁹⁰ In 2012, the sector directly employed around 140,000 workers (Sandi Bernal 2014, 42), while an additional 300,000 indirectly depended on mining (Caselitz 2013). As Table 5 shows, each of the three branches contributes very differently to the national economy.⁹¹

2012	Work Force	Production Value	Tax Revenues ⁹²	Rents
State Mining	5.8 %	5.5 %	6.6 %	5.3 %
Private Mining	5.6 %	67.1 %	92.7 %	70.9 %
Cooperative Mining	88.6 %	27.4 %	0.7 %	23.8 %

Table 5: Mining Sectors in Bolivia (2012)⁹³

⁹⁰ Subsistence miners work outside of defined structure or in loose organizations, typically made up of less than 10 miners working with rudimentary equipment (Espinoza Morales 2010, 116–117).

⁹¹ All mining sectors are mutually intertwined, as the example of the San Bartolomé silver mine exemplifies. Cooperatives lease mining rights for Bolivia’s second largest silver deposits from COMIBOL. The cooperatives again have subleased them to a Bolivian daughter company of the US-based multinational Coeur d’Alene Mines, which has been working these mines since 2008 (Robb, Moran, Thom, and Coburn 2015).

⁹² Include profit tax, added value tax, and transaction tax.

⁹³ There is no official statistical data on the mining sector publicly available. Data used in different academic publications is often contradictory. Tendencies are, however, similar across all sources with employment domination

Private Mining

The nationalization of the mines of the tin barons following the 1952 Revolution let the private mining sector diminish to few smaller enterprises. In times of the industry dominance of COMIBOL, these medium miners (*mineros medianos*), as they are still referred to presently, worked deposits of lesser importance. In the 1970s, some 30 private (mostly Bolivian) mining entrepreneurs were registered in the country (interview with J. Villalobos, 4.12.2015; Espinoza Morales 2010). During the economic and financial crisis, both COMIBOL and the national private sector closed most mines and large international corporations entered the market (often through Bolivian subsidiaries).⁹⁴ In 2014, the biggest mining employer was the Japanese San Cristóbal Mine, an open-pit silver, tin and zinc mine in the Department of Potosí on the border of the Salar de Uyuni, close to the lithium exploitation site (Arze Vargas 2014). Besides San Cristóbal, all international mining companies work COMIBOL areas with risk-sharing or leasing contracts.

While the private sector has less workers (only 10 percent compared to the cooperative workforce), it produces 67 percent of production value and accounts for over 90 percent of tax revenues (Sandi Bernal 2014, 42). Nonetheless, private international investment in mining is low in Bolivia compared to neighboring countries (Robb, Moran, Thom, and Coburn 2015). These mines tend to be smaller, unlike the large open-pit mines in Chile or Peru (with the exception of San Cristóbal). Reasons for this development can be seen in the historical concentration of Bolivian mining on many smaller deposits in the Altiplano and the investment conditions. In 2016, the renowned Fraser Institute (Jackson and Green 2017) ranked Bolivia one of the worst countries for private mining investments for its insecure legal system, unfavorable tax scheme, and land right insecurities.⁹⁵ In Bolivia, already high government mining revenues increased under the MAS government, which

in the cooperative sector while productivity, rents and taxes are mostly burdened by the private sector. The quoted data is taken from Sandi Bernal (2014) who obtained it from internal statistics of the mining ministry.

⁹⁴ These include Japanese Sumitomo (Bolivian subsidiary Minera San Cristóbal SA, mine: San Cristóbal), Swiss Glencore (subsidiary Sinchi Wayra A.A., mines: Porco, Bolívar, Poopó and Caballo), as well as U.S.-based companies Coeur d'Alene Mines (subsidiary Empresa Minera Manquiri S.A., mine: San Bartolomé) and Pan American Silver (mine: San Vicente) (Espinoza Morales 2010).

⁹⁵ The Fraser Institute conducts an annual survey of mining companies on investment conditions. In this survey, Bolivia repeatedly ranked in the lowest quarter in global comparison. In the 2016 report, the Bolivian legal system was ranked worst in global comparison in its potential to encourage mining investments. Bolivia was also attested a particularly unfavorable taxation system (2nd worst in South America, only followed by Ecuador) and a high uncertainty vis-à-vis the administration, interpretation and enforcement of existing regulations (2nd least attractive in South America, only followed by Venezuela). In South American comparison, it also scored last in political stability and community development.

sought to strengthen public mining actors. Yet, as will be discussed later on, these nationalizations were counteracted by political support for (private) cooperative mining.

Cooperative Mining

Cooperative mining has become increasingly important in the last decade in Bolivia, particularly related to the exploitation of former COMIBOL mines and gold mining.⁹⁶ Since 2006, cooperative working areas have increased by 700 percent; covering 70 percent of former COMIBOL reserves. They have also doubled in personnel and encompass nearly 90 percent of mining employment (Sandi Bernal 2014, 42). It is difficult to quantify the phenomena due to limited registration of cooperative miners. Based on data from the Vice-Ministry of Mining Cooperatives, Quiroga Trigo (2014, 29) estimates that the number of cooperative miners increased from 65,000 in 2011 to nearly 115,000 three years later. However, Sandi Bernal (2014, 42) considers 125,000 cooperative miners more realistic for 2014. Even though cooperative miners produced 27.4 percent of mining value in 2012, they only contributed 0.7 percent of tax revenues (*ibid.*) (Table 5). One important reason for this development can be seen in the low tax obligations for this sector.⁹⁷

In terms of members, organizational forms, income, and work safety standards, considerable differences exist between individual cooperatives (Caselitz 2013). While some cooperatives are made up of less than 100 miners, others have a workforce more than 1,000 strong (Bolivia Information Forum 2012). Not all miners working in a cooperative are members (*socios*) of the organization and participate in the mining income. Since cooperatives function according to a capitalist logic, they often employ miners for low wages without social security (Stefanoni 2016). Moreover, transnational companies sub-contract cooperative miners to bypass international working and social standards (Robb, Moran, Thom, and Coburn 2015, 15–16). Achtenberg (2014)

⁹⁶ In 2013, mining cooperatives were responsible for 91.2 percent of the total gold mined in Bolivia. Since cooperative miners pay hardly any taxes, tax returns from gold are even lower than for other minerals, although gold prices were particularly high. While in 2012, 1,200 million dollars' worth of gold was mined in Bolivia, only 7 million USD or 0.6 percent went to the national treasury (Gandarillas, Jiménez, and Campanini 2014).

⁹⁷ Law N° 186 of 17.11.2011 exempts cooperative miners completely from paying VAT (Arze Alegría 2014). Moreover, they are freed from paying both regular and additional profit tax (when mineral prices are high) because of their social character (Law N° 3787 of 24.11.2007). Instead of taxes, cooperative miners used to pay a one percent lease over the value of production to COMIBOL but through the transformation of all leasing contracts between COMIBOL and cooperatives into administrative contracts of unlimited duration, cooperatives no longer pay these fees (CEDLA 2014).

estimates that 75 percent of the workforce in mining cooperatives do not have pension or health insurance.⁹⁸

Public Mining

In juxtaposition to the cooperative and private sectors, public mining only increased slightly in importance during the MAS administration, despite considerable subsidies. Law N° 3720 of 31.7.2007 enabled COMIBOL to directly participate as a productive actor in mining again. The public company was charged with the administration of all fiscal reserves (*reservas fiscales*) in the country. Nonetheless, in 2012, COMIBOL accounted for only 5.5 percent of mining production value, 6.6 percent of mining tax revenues, and 5.3 percent of overall rents (Sandi Bernal 2014, 42). In 2016, COMIBOL supervised five subsidiary operations, the Productive Mining Companies (Empresas Mineras Productivas – EMP), which include mining areas and smelters. COMIBOL is also responsible for the National Management Committee for Evaporite Resources (GNRE), the responsible institution for the lithium and potassium program.

The most important COMIBOL production site is Huanuni, multiple tin mines of the Patiño patrimony. The Huanuni mines, which had been privatized as a result of the structural adjustment program, were re-nationalized in 2007 after violent encounters between cooperative miners, COMIBOL employees, and the police resulted in 16 casualties and 100 injuries (Andreucci and Radhuber 2017, 6).⁹⁹ As a compromise, the workforce at the Huanuni mines was increased, employing 4,000 former cooperative workers in addition to the 1,000 COMIBOL miners (Espinoza Morales 2010, 132).¹⁰⁰ The supplementary labor costs add to already high salaries and benefits for the Huanuni workforce which could only be absorbed due to good market conditions. In the light

⁹⁸ Most miners do not have a contractual relationship with the cooperative. They work as day laborers and do not receive any benefits or security (also in case of injury or death) (Caselitz 2013). This, of course, considerably lowers the social cost of cooperative work which makes it economically possible (at least at boom prices) to exploit even the impoverished COMIBOL veins with high profits. This allowed, as Farthing and Kohl (2014, 29) describe it, “Bolivia’s first Hummers [to appear] on the narrow streets of Potosí driven by wealthy cooperative miners.”

⁹⁹ The Huanuni mines were nationalized by Simon I. Patiño following the National Revolution in 1952. In 1987, they were de-centralized and belonged to the Subsidiary Mining Company of Oruro. In 1992, they were transferred to COMIBOL and were finally privatized in 2000, based on a shared risk contract between COMIBOL and Allied Deals, a company that later collapsed in one of the largest American fraud scandals to date. In July of 2006, this contract was annulled and the mines were placed under the control of COMIBOL under the name Empresa Minera Huanuni (Corporación Minera de Bolivia n.d.).

¹⁰⁰ Policy analyst Huascar Pacheco described how miners often work part-time for COMIBOL (which would not pay them full-time) and the rest of the day they would process left-over minerals from the COMIBOL mines as day laborers of a cooperative (interview, 18.4.2016).

of decreasing prices, Huanuni produced a historic loss of 17.8 million USD in 2015 which resulted in discussions whether the unproductive EMP should be closed (Página Siete 2016).

Next to Huanuni, the Colquiri tin and zinc mines were nationalized on the demand of cooperative miners in 2012 (Bolivia Information Forum 2012).¹⁰¹ COMIBOL also supervised the formerly closed copper mines of Corocoro in the La Paz department which were re-opened in 2009. In 2012, the EMP Corocoro was founded (COMIBOL 2016). Mallku Khota, an area with potentially large indium and silver deposits was likewise nationalized after protests by locals (Campanini and Jiménez 2012).¹⁰²

COMIBOL also supervises two smelters, including the tin smelter Vinto, which is Bolivia's only working smelter. It was opened in 1971 to process tin from Huanuni and Colquiri. In 1999, it was sold to the US company Allied Deals, which went bankrupt soon after. The profitable smelter quickly changed hands and ended up as property of Swiss Glencore in 2005. Vinto was re-nationalized in 2007 (Espinoza Morales 2010, 295 et seqq.). COMIBOL also oversees the lead and silver smelter Karachipampa, a classic example of a white elephant project. A West-German company, using Soviet technology, planned and constructed the smelter between 1977 and 1984 with an enormous overcapacity. This, combined with corruption, led construction costs to surpass 180 million USD. Yet, from the beginning, the smelter lacked the necessary mineral inputs; the Bolivian mines did not produce enough. Therefore, it never started production. When prices collapsed in 1985, the plant was abandoned. Under the Morales government, demands increased to re-open Karachipampa and it was taken over by COMIBOL in 2011. Yet, the Karachipampa dream has taken its toll on the MAS government and its nationalization strategy. After various costly intents to restart the plant, minor production began in 2014. Operation has,

¹⁰¹ The Colquiri mines in the department of La Paz, exploited since colonial times, were an important backbone of Simon I. Patiño's mining empire. Later they belonged to COMIBOL. In 1999, they were sold to COMSUR, a company owned by former President Sánchez de Lozada, and purchased by Swiss Glencore in 2004, after *Goni* fled the country. The second most important private mines in Bolivia were nationalized after cooperatives threatened to take them from Glencore's Bolivian subsidiary Sinchi Wayra in 2012. In result, 400 cooperative miners were incorporated into the COMIBOL workforce while also granting them access to the best veins. This latter part of the deal resulted in conflicts between COMIBOL and the cooperative workforce (Bolivia Information Forum 2012).

¹⁰² The Canadian company South American Silver (SAS) explored Mallku Kota through its subsidiary Compañía Minera Mallku Khota, which obtained concession rights between 2003 and 2008. After popular protests against the transnational company and violent encounters with the police, the central government revoked the rights from SAS and the area is now administered by COMIBOL, yet not as EMP. SAS has sought international arbitration against COMIBOL (Campanini and Jiménez 2012).

however, been frequently interrupted due to technical problems. Critical voices claim that efficient production at Karachipampa will never be possible (El Diario 2014a).¹⁰³

Moreover, in the public mining sector, the Ministry of Mining and Metallurgy supervises the public iron ore company Empresa Siderúrgica Mutún (ESM), which is independent from COMIBOL. ESM is responsible for the world's most important reserves of iron ore and manganese. At the *Mutún* deposit in the Department of Santa Cruz, more than 40,000 tons of iron ore with particularly high iron content are expected to be recoverable (Sanabria Rocha 2009).¹⁰⁴

The lithium organization GNRE is also supervised by COMIBOL. While plans were announced to found an independent lithium company in February of 2017 (Quintanilla 2017), GNRE was, at the time of writing, not an EMP but a part of the institutional structure of COMIBOL. In April 2008, the Morales government by Supreme Decree N° 29496 made the exploitation of the evaporite resources a national priority and charged COMIBOL with the implementation of the project. Thereby, lithium and potash industrialization became by far the largest project in size, funding, and complexity to be administered by the state mining company, just one month after recovering its authority to carry out productive mining projects (Law N° 3720, 31.7.2007). Through the Directorial Resolution N° 3801/2008, COMIBOL founded a sub-organization to steer the program, the National Directory on Evaporite Resources (Dirección Nacional de Recursos Evaporíticos – DNRE). In 2010, this Directory was promoted to Gerencia Nacional, or GNRE (Echazú Alvarado 2015, 321). In October 2010, GNRE presented the “National Strategy for the Industrialization of the Evaporite Resources of Bolivia” for the exploitation, industrialization and commercialization of both lithium and potassium (see Chapter 5.3).

¹⁰³ The importance of the Karachipampa trauma in the collective memory should not be underestimated. Although I never asked about it, ten of my interview partners talked about the project, repeatedly comparing it to lithium.

¹⁰⁴ Different joint ventures to exploit the resources have failed. After taking office, the Morales administration redeemed the license of the Brazilian company EBX for environmental reasons, which sparked protests in the eastern lowlands. The government then contracted the Indian Company Jindall Steel and Power in 2007, which abandoned the project in 2012 and is now suing the Bolivian government for damages. In January of 2016, a new contract was signed between the ESM and the Chinese company Sinosteel (El Diario 2016). For a detailed analysis of the Mutún project see Espinoza Morales (2010, 282 et seqq.) and Tejada Soruco (2011, 66 et seqq.).

4.4 Mining Legislation

The following chapter gives a brief introduction to mining legislation in Bolivia, placing a specific focus on the Constitution of 2009, the new mining law, and regulations on evaporite resources. Further legal reference is included in the relevant case study chapters.

The Bolivian mining sector has long been regulated by directives inspired by foreign legislation, first by the Spanish Mining Codes and later during the neoliberal era by US legal tradition (Espinoza Morales 2010). Under the Morales government, the basis for a new mining framework was established with the Constitution of 2009. One of the most important political projects in the second term of the MAS government (2009–2014) was the Mining Code of May 2014; according to the Ministry of Mining and Metallurgy (2014) “in the historic process of change, the laws are neither perfumed with foreign odors nor with foreign language.”¹⁰⁵

The CPE specifies the ownership rights of the Bolivian natural resources as “the property and direct domain, indivisible and without limitation, of the Bolivian people, and their administration corresponds to the state on behalf of the collective interest” (CPE, Art. 349 I).¹⁰⁶ While this has been deemed revolutionary by the government, critical voices see merely a nominal change since public ownership is established only for resources in their natural state in the soil or subsoil while the mining production becomes property of the extracting companies¹⁰⁷ (CEDLA 2014; Radhuber and Andreucci 2014). The CPE in Article 351 further specifies that the state controls all aspects of the value-adding-chain of strategic resources through public companies, cooperatives, or community entities that can contract private enterprises, while Article 369 II declares that evaporite resources such as lithium and potassium are such strategic resources.

The Mining Code of 2014 aims at aligning mining regulations, while also clarifying them in relation to the Constitution. The law reinforces public ownership of natural resources (LMyM, Art. 2); underlines the strategic nature of mining resources; and emphasizes the superior role of the central

¹⁰⁵ Original quote: “*En el histórico Proceso de Cambio, las leyes no están perfumadas con olores extranjeros ni con lenguaje extranjera.*”

¹⁰⁶ Original text: “*Los recursos naturales son de propiedad y dominio directo, indivisible e imprescriptible del pueblo boliviano, y corresponderá al Estado su administración en función del interés colectivo.*” English translation taken from the Constitute Project (“Constitute Project” 2009).

¹⁰⁷ See LMyM, Art. 95.

government in administering, exploiting, and industrializing them (LMyM, Art. 8). The state has exclusive authority over mining politics and the creation of public mining companies (*ibid.*).¹⁰⁸ Article 26 of the LMyM, in correspondence to the CPE, declares that the pluri-national state can reserve strategic minerals for exclusive exploitation by state companies, respecting pre-constituted rights. In the administration of these strategic resources, the central government takes clear priority over departmental and local state authorities, which are not able to form mining companies or participate in the exploration, exploitation, concentration, refinement, or commercialization of strategic resources. They can, however, jointly with the central government, participate in the industrial transformation of these resources (LMyM, Art. 8 and 23).

Article 26 of the mining law establishes that salt flats are strategic areas and lithium and potassium are strategic resources that fall under the authority of the central government. COMIBOL is given administrative control over the exploitation of these strategic resources. Article 73 I assigns COMIBOL the complete value-adding chain for evaporite resources and establishes that the mining corporation could, in accordance with the Law of Public Enterprise (Law N° 466 of 26.12.2013), found an EMP for evaporites. Moreover, the former Industrial Complex of Evaporite Resources in the Salar de Uyuni (Complejo Industrial de Recursos Evaporíticos del Salar de Uyuni – CIRESU), an investigative institution for evaporite resources formed in the 1980s (compare Chapter 5.2), is transferred completely to GNRE-COMIBOL (LMyM, Art. 73 II and III). For evaporite resources, the basic processing chemistry must be developed with 100 percent state participation, while private and international companies are only allowed to participate in semi-industrialization¹⁰⁹ and industrialization (LMyM, Art. 73 IV).

The LMyM also mandates organizational changes in the mining sector by re-directing power from COMIBOL to the newly founded Judicial Administrative Mining Authority (Autoridad Jurisdiccional Administrativo Minero – AJAM). With this reform, two central institutions dominate the mining sector: the ministry, which sets the political guidelines, and the AJAM, which is the highest administrative institution, replacing the less powerful mining superintendent

¹⁰⁸ The different state competences are defined in the CPE (Chapter 8, Art. 297 et seqq.). Exclusive competences must be differentiated from private competences. The central state level has exclusive legislative power, as well as regulative, and executive competences. The latter two competences can be transferred to other state levels. Private competences, on the contrary, cannot be transferred or delegated, and belong exclusively to the central state level. Thus, the central government could not delegate regulative and executive authority to other authorities.

¹⁰⁹ As Olivera (2014, 72) points out, the term “semi-industrialization” is not defined in the law.

(Superintendencia General de Minas – SGM). While COMIBOL manages the five EMPs and certain strategic resources (e. g. lithium), AJAM supervises all mining activities and manages the territorial mining rights. It thus decides whether mining contracts are granted, denied, or revoked (LMyM, Chapter III, Art. 39 et seqq.). The AJAM is also responsible for prior consultations in mining (LMyM, Art. 208 II). Other public mining actors include the geological service SERGEOMIN, the Research Institution CEIMM (Centro de Investigación Minero Metalúrgico), and the National Registry and Control Service for the Commercialization of Minerals and Metals (Servicio Nacional de Registro y Control de la Comercialización de Minerales y Metales – SENARECOM) as well as two mining funds (for cooperative and small-scale mining) (Figure 5). With the foundation of AJAM, the Mining Code also formalized a (limited) reform of the concession system. While this does not have a direct impact on the lithium project, as the strategic nature of lithium and potash impede private concessions for these minerals, the changes in the concession system have significantly modified power structures in the mining sector. They thereby indirectly impact all mining initiatives, including lithium.

Former Bolivian mining laws guaranteed mining concessions for state and private actors. In 2006, the Bolivian Supreme Court ruled the concession system, as established in the Mining Code N° 1777 of 1997, unconstitutional (Sentencia Constitucional N° 0032/2006, of 10.05.2006).¹¹⁰ In response to the Supreme Court ruling, newly elected President Morales signed Supreme Decree N° 29117 in 2007, which eliminated the concession system and declared the national territory a state-run reserve to be exploited and administered by COMIBOL. The presidential decision was later abandoned by Supreme Decree N° 29165 (9.1.2008), which ordered a gradual revocation of the fiscal reserve through the subscription of lease contracts for mining areas. The new mining law finally annulled the fiscal reserve on the national territory (LMyM, Art. 16 V) (re-stating previous fiscal reserves), while existing concessions held by private companies or cooperatives need to be transferred into mining contracts. Unused mining areas and concessions are administered by the AJAM (LMyM, Art. 42).

¹¹⁰ The court challenged that while the mining code established that the state, as the representative of the Bolivian people, owned all mineral deposits, the government can give far reaching concessions that essentially concede these rights to third parties. The court ruled that at least partial public ownership must be conserved when cooperating with private entities. Moreover, it urged the government to pass a new mining law by 2008 (which did not happen until 2014).

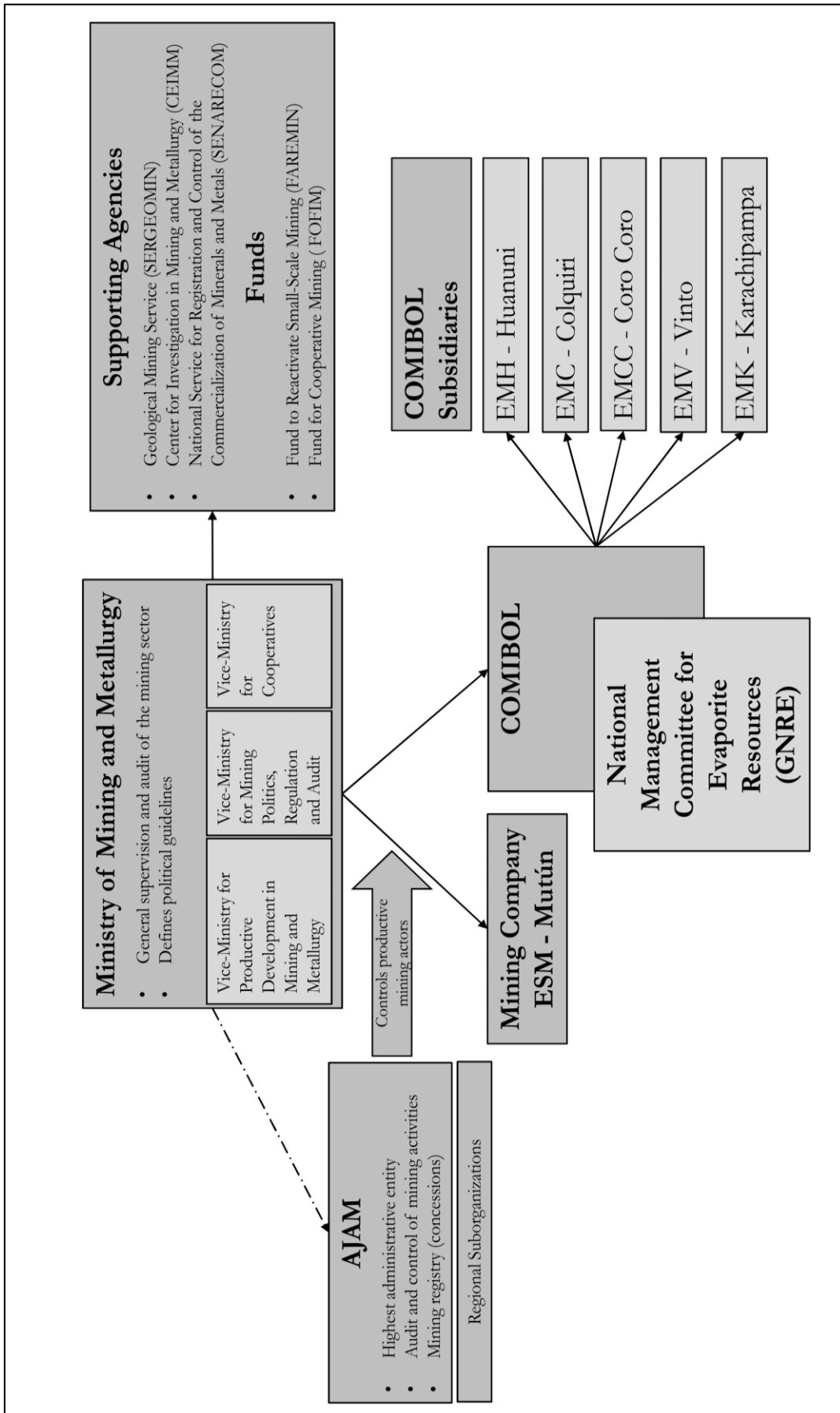


Figure 5: The Institutional Structure of the Public Mining Sector

The conversion of the concession system in favor of AJAM weakened COMIBOL as a mining actor. The Morales administration was forced to qualify COMIBOL's powers in the light of conflict experiences with nationalizations and bureaucratic structures of the national mining company. Consequently, its competences are now confined to few nationalized mining zones (LMyM, Art. 62), while it has lost influence over areas that have not been nationalized. Researcher Carlos Arze of the NGO CEDLA (interview, 26.10.2015) summarizes the fate of COMIBOL as simply another company with state participation:

“Beforehand, COMIBOL had the authority to grant concessions – today not anymore. From 1952 onwards, COMIBOL had the part of the entity that fixes politics. Losing the monopoly on productive activities, it also lost this capacity and it is the ministry, the central government, that fixes politics, and it is the AJAM that grants contracts. COMIBOL is just another productive company with the state as shareholder. The AJAM is the authority that fixes concessions and the ministry fixes the big politics.”¹¹¹

While COMIBOL could secure administrative authority over strategic resources, its inflexible structures and generally weakened position have brought it to the sideline of the grand public mining projects. As will be further elaborated in the subsequent chapters, the Management Committee for Evaporite Resources could secure a far-reaching autonomy from its “mother organization” COMIBOL in administering the lithium and potash program.

The administrative and institutional changes implemented with the new mining law have been controversially discussed in Bolivia. The policy analyst Huascar Pacheco (interview, 18.4.2016) claimed that:

“while the mining law has some interesting concepts of conservation, fiscalization etc., it is essentially a law that directly benefits one sector, which is the cooperative sector, while the state sector is touched only transversally and for the private sector, some requisites are hardened, but also it is not intervened more severely.”

Nonetheless, voices from the private sector strongly challenged the new law, particularly the forced conversion of private concessions into contracts which, they claim, restricts on entrepreneurial

¹¹¹ Original quote: “COMIBOL antes tenía la potestad de otorgar concesión – ahora ya no. COMIBOL tenía el papel, desde 1952, de entidad que fijaba las políticas. Perdiendo el monopolio de la actividad productiva, también perdió esa capacidad y es el ministerio, el gobierno central, que fija la política, y es la AJAM que otorga los contratos. COMIBOL es solamente una empresa más productiva con participación accionaria del estado, AJAM es la autoridad de fijar concesiones y el ministerio fija las grandes políticas” (interview with C. Arze, CEDLA policy analyst, 26.10.2015).

freedom and discourages investments in the mining system (El Economista 2013).¹¹² Examples of such restrictions include the control of the associations of private miners, restriction of the transfer of private mining areas which cannot be inherited or marketed (LMyM, Art. 13), and the guaranteed government majority of 55 percent in any private public partnership (LMyM, Art. 148).¹¹³

Cooperative actors, in comparison, could secure substantial financial privileges and preferential access to high yielding reserves (El Diario 2014b).¹¹⁴ This sector has also been involved in drafting the law, while other interest groups, particularly indigenous organizations, have been mostly excluded (Radhuber and Andreucci 2014). Nonetheless, the fiercest criticism of the law, resulting in violent upheavals, emanated precisely from the cooperative sector. Cooperative protests centered on the question of to what extent cooperative miners should be allowed to sign contracts with private partners (ibid.). The Bolivian Senate had challenged this privilege, claiming that cooperative miners should then lose their status as social mining actors and follow regulations established for private businesses (including higher tax rates). The resulting violent protests of cooperative miners left two miners dead and over 100 miners and policemen injured (Radhuber and Andreucci 2014). As a compromise, the law now bans future contracts of cooperatives with the private sector but guarantees present agreements and upholds the possibility of joint ventures through COMIBOL.

Civil society actors and indigenous groups have also challenged the new mining law (Radhuber and Andreucci 2014; Robb, Moran, Thom, and Coburn 2015). Criticism includes the claim that the new law contradicts constitutional rights and facilitates neoliberal continuities. For example, formerly granted concessions for transnational companies are upheld (now as contracts), even if the territories of exploitation were on indigenous lands (Arze Vargas 2014). Also, indigenous peoples are not recognized as productive mining actors (LMyM, Art. 31) and consultation rights are limited to exploitation, not exploration (LMyM, Art. 207 II). The UNDRIP declaration on indigenous

¹¹² This idea was also expressed in many of my interviews, including with analysts C. Sandy (9.11.2015), C. Coallaviri (15.11.2015), J. Villalobos (4.12.2015), anonymous interviews with private mining entrepreneurs (30.10.2015 and 4.11.2015), and a mining analyst (27.11.2015).

¹¹³ Original quote: “*La Ley Minera es una ley que, si bien, tiene algunos principios interesantes de conservación, de fiscalización y demás, en el fondo es una ley que beneficia directamente a un sector; que es el sector cooperativista, y que al sector estatal se lo toca así muy transversalmente y al sector privado se le endurecen algunos requisitos y demás, pero tampoco se interviene de manera más dura.*”

¹¹⁴ Cooperatives are also granted access to COMIBOL areas. As Carlos Arze, investigator of CEDLA, points out, this is “something that was never done in Bolivia, COMIBOL areas were never transferred to private [actors], since 1952” (interview, 26.10.2015). Original quote: “*Algo que nunca se ha hecho en Bolivia, nunca se ha transferido a privados las áreas que eran de la COMIBOL, desde 1952.*”

rights, which was made a national law in 2007, however recognizes the right of prior informed consent to mining operations.¹¹⁵ Nonetheless, the mining law establishes that

“the natural resources are of strategic character and of public interest for the development of the country and their administration, direction and control, in the collective interest, corresponds to the State in the name of the Bolivian people, which is why the ILO Convention 169 of the International Labor Organization (ILO) and the United Nations Declaration on the Rights of Indigenous Peoples do not give the subjects of consultations the right to veto the execution of activities of mining exploitation” (LMyM, Art. 208 III).¹¹⁶

This restriction of previously established rights outlines important contradictions in the Morales indigenous rights agenda.

Further criticism of the law centers on the fact that it upholds restrictions on environmental protection in mining. This exposes a limited concern for mother earth. In this, water is an especially challenging topic. Since the water law of 1879, water resources in mining regions have belonged to the mine owner and all mining codes, including the mining law of 2014, guarantee free water use in mining areas (Campanini 2014).¹¹⁷ This contradicts the constitutional right to the non-marketability of water (CPE, Art. 20 III).¹¹⁸ The LMyM of 2014 also establishes the free use of “area resources”, such as timber, on mining lands (LMyM, Art. 107), and allows mining in protected areas (LMyM, Art. 220). Environmental groups have challenged that environmental licenses for mining projects are no longer issued by the Ministry of Environment and Water but by the Ministry of Mining and Metallurgy (LMyM, Art. 222), establishing a conflict of interest (Radhuber and Andreucci 2014).

¹¹⁵ The Bolivia Constitution establishes the need to consult and inform indigenous peoples affected by extractive initiatives before the start of exploitation (CPE, Art. 343, 352). Bolivia has also ratified ILO Convention 169 in 1991, which similarly establishes a right of indigenous peoples to prior consultation. In an internationally widely recognized act, Bolivia made UNDRIP a domestic law in 2007 (Law N° 3760 of 7.11.2007). UNDRIP thereby goes beyond the ILO convention and the CPE, guaranteeing indigenous groups the right to self-determination and prior informed consent to extractive activities, not only to consultation and information. Consequently, a contradiction exists in Bolivian law on the extent of – particularly – indigenous consultation rights. The mining law, as outlined, severely restricts prior consultation rights. Similarly, the electoral law (Law N° 26, 30.7.2010, Art. 39) mandates that consultation results are not binding (compare Schilling-Vacaflor 2012, 2013).

¹¹⁶ Original quote: “*Los recursos naturales minerales son de carácter estratégico y de interés público para el desarrollo del país y su administración, dirección y control, en función del interés colectivo, corresponde al Estado a nombre de todo el pueblo boliviano, asimismo el Convenio 169 de la Organización Internacional del Trabajo – OIT, y la Declaración de las Naciones Unidas sobre los Derechos de los Pueblos Indígenas, no otorgan a los sujetos de la consulta previa el derecho a veto a la ejecución de las actividades de la explotación minera.*”

¹¹⁷ Compare LMyM, Art. 111.

¹¹⁸ On this contradiction, the new mining law is particularly vague, saying in Article 12 that the pluri-national state shall incentivize the integral use of mineral reserves “without infringing on the use of the water for life (...)” (Original quote: “*sin vulnerar el uso del agua para la vida (...).*”)

The new mining law mandates certain institutional changes. One of the most significant changes is the creation of a new mining actor, the AJAM, and the subsequent weakening of COMIBOL. At the same time, mining legislation has given precedence to cooperatives over the “old” private sector, indigenous groups, and civil society. These privileges for cooperative miners strengthened informal mining activities outside of social and environmental rigor. As will be discussed in the subsequent chapter, the new mining law is a legal abandonment of *vivir bien* principles established in the CPE and a victory for the neo-extractive policy orientation over indigenous concerns. Simultaneously, inconsistent mining politics are often attempts to square the circle by finding ways to strengthen COMIBOL; curtailing “old” private investors in Bolivia (as part of the “socialism of the 21st century”) without harming the “new” cooperative privateers.

This legal and institutional panorama has many diverse effects on the lithium and potash project. These resources’ newly establish strategic nature and the weak regulations concerning prior consultations and environmental management are important to consider in the discussion of the program.

4.5 Conflicts in the Bolivian Mining Sector

The heterogeneous Bolivian society has always been highly politicized and prone to conflict. Bolivian social movements are considered among the most radical in the region (Farthing and Kohl 2014, 32). With large inequalities and deficient institutions to negotiate social demands, taking to the streets has often been the only mechanism for social groups to voice their concerns. Since 2000, Bolivia has seen particularly high levels of conflict; the surge of social movements has intensified existing regional, ethnic, and social tensions (Mähler and Pierskalla 2014; Quiroga Trigo and Avejera Udaeta 2014; Radhuber 2013; Simmons 2016b). According to Fundación Unir, Bolivia experienced an average of 97 social conflicts per month between 2010 and 2014¹¹⁹ (Arze Alegría 2014, 57).¹²⁰

¹¹⁹ Study period January 2010 to April 2014. This timeframe refers to all quotes from the *Fundación Unir* study.

¹²⁰ There are certain limitations on conflict data for Bolivia. The data either does not exist for long periods of time, is not disaggregated by conflict motives, or not available for further research. Mähler and Pierskalla (2014) have created a new data set for regional conflicts and registered 3,731 conflict events (violent and non-violent collective action beyond formal institutions) between 2000 and 2011, yet this data is not freely accessible. Another important source is *Fundación Unir*, which will be cited throughout the PhD; however, their data collection methods are not fully transparent. This non-profit foundation began analyzing social conflict in Bolivia based on 14 local news outlets (newspaper, radio, etc.) in 2006. It also has a crowdsourcing platform where observed conflicts can be reported as confrontation, manifesting, and latent conflict (grouped according to certain pressure instruments while also registering casualties and injuries). Their definition of “conflict” is, however, not published.

Previous studies found a link between these rising conflict levels and decreasing natural resource management capacities in Bolivia triggered by rentier state developments (Evia, Laserna, and Skaperdas 2008; Rodrigues-Silveira 2014), an increasing intertwining of resource demands with indigenous identity mobilizations (Mähler and Pierskalla 2014), the structures of the economic system shaped by clientelism, and the disadvantageous integration of Bolivia into the global market (Radhuber 2013). Bolivian resource conflicts during the Morales administration often diverged into two central questions, ownership in resource management and benefit distribution. At the same time, with the orientation towards indigenous values expressed in the CPE, a third important cleavage evolved between extractive continuities and indigenous and environmental rights as well as alternative visions of development. Neo-extractivism research argues that mining conflicts were sparked by a combination of these factors; a failed mining sector reform which culminated in the LMyM of 2014, continuities in the development model and inconsistencies with the promoted decolonial agenda of the government supported indigenous identity mobilizations and civil society protests.

When analyzing resource conflicts in Bolivia, it must be considered that many studies, such as Mähler and Pierskalla (2014) cited above, focus on the hydrocarbon sector and that it is not always possible to separate conflict motives by resource.

When looking at resource conflict development since 2000, three phases can be identified. In a first phase, prior to Morales' election, the idea that the private sector in general and transnational companies in particular would have a stronger role in handling Bolivian resources initiated resistance. When looking at the Gas Wars, it becomes clear that a central demand of the social movements of this first phase was not to curtail the extractive orientation but rather to support public instead of private gas resource management (Andreucci and Radhuber 2017). After Evo Morales took office, it was particularly this demand of a stronger central government control of resource exploitation that supported the escalation of a political crisis with the lowland departments Santa Cruz, Tarija, Beni, and Pando bordering on civil war. Disagreements in the Constitutional Assembly intensified the antagonism between the Crescent Region and the central government which further escalated over rent sharing in the gas sector in 2008 (Humphreys Bebbington and Bebbington 2010).¹²¹ After 2009, these regional and national conflicts subsided when the

¹²¹ The conflict between the MAS government and the lowlands rich in hydrocarbons escalated in 2008 over the state pension *Renta Dignidad*. By decision of the central government, the social program was to be financed partially by a

government integrated agro-industrial lowland interests in its political agenda. This truce gave way to a third phase of disputes over singular issues such as benefits for particular groups, environmental demands, cooperative sector interests, and indigenous rights (Bertelsmann Stiftung 2016, 29).

During the first Morales government, the hydrocarbon sector played an important role in conflict development. Since 2010, however, the prevalence of conflict increased in the mining sector (Arze Alegría 2014; Garzón Martínez 2014). Between 2010 and 2014, Fundación Unir registered 203 conflicts involving mining actors¹²², with frequent incidents of violence (Arze Alegría 2014, 61). 10 percent of all social conflicts included violent encounters compared to 17 percent of mining conflicts (ibid., 64). 74 percent of mining conflicts between 2010 and 2014 emerged in the mining departments of Oruro, Potosí, and La Paz. Conflicts arose in the latter department because of cooperative gold mining and the expansion of mining into non-traditional extractive areas and indigenous territories (ibid., 72).

On the following pages, two central types of mining conflicts in Bolivia will be outlined; economic mining conflicts and mining conflicts related to environmental and indigenous rights.¹²³ Trends and developments will be discussed using concrete examples from the Bolivian resource sector.

tax on fossil fuels, which had previously been destined mainly to production areas. In the lowland provinces, resistance formed against the government plan, including a general strike, occupations of public buildings and sabotage of resources infrastructure. In Tarija, conflicts resulted in over 80 injuries when youth attacked MAS affiliated vendors at a market. In other departments, particularly in Pando, the protests resulted in dozens of fatalities (Humphreys, Bebbington, and Bebbington 2010). The central government subsequently sent military forces to five departments. The situation could be deescalated in negotiations between the government and part of the opposition, without affecting the financial plans for the *Renta Dignidad* (ibid.). Farthing and Kohl (2014) argue that conflict with the lowlands was also a result of an underestimation on part of the MAS government of eastern economic and political power and the mobilization potential of regional autonomy demands.

¹²² According to the Fundación Unir, mining conflicts represented about 4 percent of all social conflicts between 2010 and 2014, with an increasing tendency in the latter years. However, it needs to be considered that it is difficult to clearly separate mining from other conflict topics as there are often multiple reasons for mobilization. Hydrocarbons made up an additional 2 percent of registered social conflicts (Arze Alegría 2014).

¹²³ Not all mining conflicts during the Morales government connect to economic, environmental, or indigenous demands but these conflict motives are most relevant quantitatively and in relation to the lithium project. Other issues also supported conflicts, such as labor rights and working conditions, the change of legislation or outside factors. An example includes the declaration of the *Cerro Rico* of Potosí as a National Patrimony and the possibility that all mining activity could be stopped to avoid a collapse of the mountain (Arze Alegría 2014, 79).

4.5.1 Economic Mining Conflicts

All throughout Bolivian history, natural resources have been considered the backbone of the economy: “In Bolivia (...) the gaze on natural resources from the spheres of power to the common citizen, is loaded with expectations of development and rapid enrichment (Arze Alegría 2014, 71).”¹²⁴ The government of Evo Morales places a specific economic focus on natural resources. Both the National Development Plan (Ministerio de Planificación del Desarrollo 2007) and the Patriotic Agenda for the Bi-Century 2025 (Morales Ayma 2013) define resources as the basis of economic policy making and a means to eradicate poverty. It is also because of this monetary vision of resources that economic grievances are central in Bolivian mining projects.

Between 2010 and 2014, economic demands were behind roughly 80 percent of mining conflicts (Arze Alegría 2014, 72). Economic conflicts result from the vertical distribution of rents between levels of government and the horizontal sharing between the government, non-government actors, and between different types of non-government stakeholders. In Morales’ first term, resource conflicts (then particularly related to gas) emerged over the tributary system and the regional sharing of revenues between the central and regional governments in the Crescent Region. In the case of mining, the Department of Potosí demanded a greater share in specific resource projects. For example, in 2015, the Potosí Civic Committee (*Comité Cívico de Potosí – COMCIPO*) demanded 50 percent of potential taxes gained on lithium exploitation (Opinión 2015). Different municipal governments have also demanded a higher share of resource income.

Parallel to this development, more violent forms of conflict emerged between different mining actors, principally over the access to lucrative mining areas and over income distribution. Examples include economic mining conflicts that connect to increasing rents from mega-projects such as the private mines San Cristóbal and San Bartolomé, which only entered into production under the Morales administration, or the reactivation of the iron-ore project Mutún. Yet, in the general conflict panorama of the mining sector, conflicts involving cooperative miners are most relevant. During the MAS administration, conflicts with this group intensified quantitatively and in level of intensity. In 2013 alone, the Ministry of Mining and Metallurgy had to intervene in 37 conflicts between cooperatives (Gandarillas, Jiménez, and Campanini 2014), while cooperative miners were

¹²⁴ Original: “En Bolivia (...) la mirada en torno a los recursos naturales, desde las esferas de poder hasta el ciudadano común, está cargada de expectativas de desarrollo y enriquecimiento rápida.”

often also in dispute with regularly employed miners or local communities over land rights and access to mining reserves (Arze Alegría 2014).

Through their National Federation FENCOMIN, cooperative miners could exert considerable pressure on the central government. In 2014, in the wake of the conflicts over the new mining law, FENCOMIN's former President Alejandro Santos claimed that “just as FENCOMIN and all of the cooperatives of the country ensured that President Evo would be the president of Bolivia, just as easily can we bring him down (...)” (Peralta Miranda 2014).¹²⁵ Threats like this by a plentiful and well-organized sector, which is part of the legitimizing base of the MAS administration (interview with mining analyst H. Pacheco, 18.4.2016) and which could indeed threaten government stability (anonymous interview with a mining analyst, 27.11.2015) have helped to ensure far-reaching political support of cooperative mining. Yet, cooperative miners as “private entrepreneurs in the making” (interview with a private mining entrepreneur, 30.10.2015), follow a free-market logic of resource exploitation and are consequently in opposition to a MAS project of a larger public control of mining.¹²⁶ This is also a central reason why the MAS government refrained from further nationalization initiatives during its second term in office (Quiroga Trigo 2014, 32–33).

Conflicts involving powerful cooperative organizations with a long mobilization history are marked by high levels of violence, including the occupation of mines, dynamite and firearm use as well as kidnapping. Prominent examples include the Huanuni conflict in 2007 and the Colquiri conflict of 2012, which were both solved through the nationalization of the mines and a generous participation of cooperative miners in the exploitation. In 2012, violent encounters could be observed over access to gold mines, when a high gold price promised rapid enrichment (Arze Alegría 2014).¹²⁷ A highpoint of violence was reached in August of 2016, when Vice-Minister of the Interior Rolando

¹²⁵ Original quote: “*Si bien la FENCOMIN y todas las cooperativas del país hemos llevado a que el Presidente Evo sea el presidente de Bolivia, así también podemos bajarlo.*” Translation from Robb, Moran, Thom, and Coburn (2015, 15).

¹²⁶ “Original quote: “*las cooperativas son empresas privadas en potencia, son empresarios privados en potencia.*”

Cooperative mining unquestionably follows the capitalist market logic, “it is the most pragmatic example of a storybook capitalism” (interview with H. Pacheco, 18.4.2016). (Original quote: “*El cooperativismo minero es el ejemplo más pragmático de capitalismo del libro.*”) In their self-understanding and their discourse, cooperative miners, however, auto-identify as a collective mining actor which seeks collective employment for individual miners (who have been laid-off from the public mining sector) and thus fulfills a social function (ibid.). In Bolivian legislation, mining cooperatives are consequently treated as social mining actors, a category that secures different financial benefits.

¹²⁷ Examples include the Arcopongo gold conflict (La Paz department) in 2014, which was fought with war equipment, including automatic weapons and the use of a helicopter, resulting in at least two casualties (Gandarillas, Jiménez, and Campanini 2014). Also, in 2014, two people were killed with fire arms in a dispute over access to gold mining areas in Choro Grande (La Paz department). In October of 2015, the confrontations between cooperative miners and community members reemerged and left one person dead and four injured (Luizaga 2015).

Illanes was taken hostage and beaten to death while negotiating with cooperative miners (Romero 2016). In response, Evo Morales issued five decrees regulating the sector (HIIK 2017, 107).

Declining mineral prices can be seen as a reason for increasing tensions in the recent years. Cooperatives often exploit impoverished veins at particularly high costs with a slim margin of profitability and have no entrepreneurial structure to organize for the ups and downs of global markets (Espinoza Morales 2012c). Linking back to the resource curse theory, mining cooperatives do not follow counter-cyclical spending frames or prepare for bust years through a long-term vision in financial management. Rather, mining cooperatives are only profitable at boom prices, resulting in the bankruptcy of many organizations after 2013. With declining prices, cooperative miners started to demand government subsidies, technology donations and access to better mining areas (Página Siete 2015b). While cooperatives have been a major impediment for mining sector reforms, they have also been a very important source of employment for the rural poor, generating nearly 90 percent of mining employment (Sandi Bernal 2014, compare Table 5). A massive failure of the cooperative mining sector in the future could confront the government with a large number of unemployed miners without formal labor market qualifications. With declining mineral prices and falling gas income, the Bolivian government might also lack funds to redistribute income selectively to its peers, which has been an important strategy to calm protests and secure rural support for extractive initiatives (Andreucci and Radhuber 2017).

4.5.2 Conflicts over Environmental Impacts and Indigenous Rights

While environmental impacts of mining have been at the core of mining grievances in case studies around the world, conflict escalation over environmental issues has been of limited quantitative importance in Bolivia, only representing 0.5 percent of overall social conflicts and 12 percent of mining conflicts between 2010 and 2014 (Arze Alegría 2014, 65).¹²⁸ There are two possible readings of this. First, the widely discussed power imbalances curtail the leverage of local actors to voice their concerns against extractivism (see Bebbington 2012; Svampa 2013; Engels and Dietz 2014). Second, mining has historically been the backbone of the Bolivian economy, meaning that the local population is familiar with the industry and is often not opposed to mining as a development model despite the environmental damages it might produce (see Revette 2017). The former COMIBOL

¹²⁸ 87.5 percent of environmental mining conflicts evolved around water issues (Arze Alegría 2014, 66).

President Héctor Córdova (interview, 21.10.2015) expressed this societal mining orientation as follows:

“Also, it is necessary to consider that this area of Potosí has **always** been a mining area, and therefore, the vision of a preservation of the environment is a far-away vision, which **does not exist in reality**. Preserving the environment for the mine worker does not exist. And in this area, it is little that you can discuss. There are only external organizations that talk about the environment, but **nobody** there talks about the topic, (...). But the peasant organizations, yes, at some point they have talked about the environment, they mention it, but not as an element that could condition the continuity or validity of the project but rather as an element that has to provoke compensation later on.”¹²⁹

The secondary role of environmental preoccupations has also been enforced by mining governance. While the environmental policy discourse is strong, environmental protection receives limited attention in practice. Particularly, small-scale or cooperative mining projects often do not possess environmental licenses¹³⁰ and demand further liberalizations (Arze Alegría 2014, 65). Moreover, in public mining projects, the environmental legislation is applied inconsistently, since environmental concerns have become subordinated under economic development and rent distribution (Bertelsmann Stiftung 2016, 20).

Although environmental and indigenous issues are quantitatively not at the core of local mining conflicts in Bolivia, these dimensions have become central in the national mining debate as they visualize inconsistencies in the MAS economic agenda and its environmental-indigenous discourse. While it seems that the close alliance between indigenous groups and social movements has restricted conflict action in the first Morales government (Bebbington 2012, 12–13), this connection disintegrated after 2010, when conflicts between former MAS allies escalated. The most notable expression is the ongoing conflict over whether a highway should be built through the indigenous

¹²⁹ Original quote: “Después también hay que ver que siempre esta zona de Potosí ha sido una zona minera y, por lo tanto, la visión de preservación del medio ambiente es una visión lejana, que **no existe en realidad**. Preservar al medio ambiente para el minero eso no existe. Y por la zona es muy poco lo que se puede hablar, todos son organizaciones externas que hablan del medio ambiente, pero ahí **nadie** habla del tema (...). Pero las organizaciones campesinas sí en un momento han hablado del tema ambiental, lo mencionan, pero no como un elemento que vaya a condicionar la continuidad o la vigencia del proyecto, si no como un elemento que ha de provocar compensaciones más tarde.” Words emphasized by the speaker are in bold. Similarly, policy analyst Fernando Molina (interview, 13.4.2016) argued that environmental concerns only become a “resistance flag” when a project does not create rentier structures.

¹³⁰ Environmental impacts of cooperative mining are severe, particularly in (often illegal) gold mining. One reason is the uncontrolled use of mercury, which is directly dispatched into rivers, with severe impacts on fauna and flora (particularly in the Amazonas basin) as well as on traditional agriculture (Campanini 2015). Grave environmental impacts are for example notable in Riberalta (ibid.) and in the Riverbed of Suches which discharges into the Titicaca lake on the Bolivian-Peruvian border (interview with mining analyst H. Pacheco, 18.4.2016). This region has also been affected by conflicts over passage routes for illegal mined gold (ibid.).

territory TIPNIS (Territorio Indígena y Parque Nacional Isiboro Sécuré), thereby opening it for resource exploitation (Dargatz 2013). The TIPNIS case incited major national mobilizations in 2010, 2011 and again in 2017 both in favor of and against the road construction (Achtenberg 2013), while it is not clear how the project will continue.¹³¹ The MAS government has not reacted coherently to these tensions within its neo-extractivist development model and has mostly responded with threats or by providing individualized compensations (Bertelsmann Stiftung 2016, 26).

The TIPNIS case and oil exploration in the Lliquimuni region in Northern La Paz¹³² were the most visible environmental debates in the Bolivian resource sector – but these are not mining cases. Environmental conflict cases in mining have not received similar media attention.¹³³ Examples include the protests of Weenhayek indigenous communities against mining contamination of the Pilcomayo river which affects local fishing (Madrid Lara 2014, 183), the formation of a local movement in Cantumarca against the contamination with mining residuals (Tapia Montecinos et al. 2010) and the environmental disaster at *Huanuni*. By Supreme Decree N° 335 of 2009, the Huanuni tin mines were declared an environmental emergency zone after the rivers leading to lakes Poopó and Uru Uru were contaminated with mine waste.¹³⁴ Yet, this unprecedented legal measure, which followed local protests, led to almost no changes in practice (Andreucci and Radhuber 2017, 8). State dormancy is problematic in environmental mining conflicts which are often based on demands that have been voiced for many years without being addressed (Arze Alegría 2014).

¹³¹ After the TIPNIS National Park was protected in 2011 by a law which prohibited construction activities to smooth the tensions, the conflict re-emerged in 2017, when the protection status was lifted. This opens the legal possibility of the construction of the road (Neher 2017).

¹³² The oil exploration project in the Lliquimuni block in the province of Caranavi is paradigmatic of the ambivalent approach of the Morales government towards resource governance. Lliquimuni, launched as a joint venture with Venezuela in 2007, is the first development project in a non-traditional extractive area under the MAS. The problem is that the area borders the national parks Pilon Lajas and Madidi and overlaps with the territories of the Mosenet, Chimane, and Leco indigenous peoples (Pellegrini and Ribera Arismendi 2012). In 2008, the consultation process for the project started. The hydrocarbon ministry focused its efforts first on pro-government migrant workers (who did not belong to the mentioned indigenous peoples), with whom consultations could be finalized quickly based on compensation payments. When the negotiations with the indigenous organizations turned out to be more cumbersome, the government opted for intimidation and selective payments to individual community leaders bypassing local indigenous organizations (Schilling-Vacaflor 2012; Pellegrini and Ribera Arismendi 2012; Canessa 2012). In 2016, the exploration was declared a failure as it did not reveal the expected oil reserves (Opinión 2016).

¹³³ This does not mean that mining contamination was limited, but rather that protests did not reach critical or visible levels. See Gutiérrez Agramont (2009) and Tejada Soruco (2011) on mining contamination in Bolivia.

¹³⁴ By 2015, lake Poopó, once the second largest lake in Bolivia, had dried up completely. Reasons are seen in continued drought and the “*El Niño*” phenomenon, the redirection of water sources for mining and agriculture as well as political mismanagement (Clark Howard 2016).

At the same time, environmental conflict cases often connect to indigenous rights. A frequent issue of contestation is whether indigenous groups have a right to prior consultation or consent when their natural resources will be affected. Between 2010 and 2014, Fundación Unir registered 21 mining conflicts involving indigenous groups, mostly demanding their right for a prior consultation and the protection of ancestral territories (Madrid Lara 2014, 181). The first attempted consultation process in mining after the promulgation of the CPE was the case of the Corocoro copper mines in the La Paz department (*ibid.*, 182 et seq.) When the Morales administration announced the reactivation of the COMIBOL mines in 2009, local indigenous groups demanded they be allowed to exercise their newly established constitutional right. The initiated consultation process was, however, abandoned due to protests of local miners and because of the limited administrative capacity of the government which had not yet defined regulations for the consultation process. These administrative regulations of consultations were only established with the LMyM in 2014 (*ibid.*).¹³⁵

Another example for a conflict over consultation rights is the Mallku Kota case. The concession rights that the transnational company South American Silver obtained between 2003 and 2008 for the promising Mallku Kota reserves had been criticized as illegal by indigenous communities. SAS had been awarded mining rights on indigenous territory in an environmentally sensible area without any consultation with the communities. The subsequent violent conflicts, which included the taking of company hostages, were, however, also fought over access of local communities to the mining resources and resulted in a revocation of the mining concession in 2011. Now that the area is explored by COMIBOL, the public mining company also negates the right to prior consultation (Campanini and Jiménez 2012). The Mallku Kota case shows again that many place-based indigenous actors in Bolivia do not generally oppose extractive practices but more frequently voice territorial and participatory concerns. It is a paradigmatic example of how different motives merge in mining conflicts, involving demands of project involvement, fulfillment of constitutionally anchored indigenous rights, and environmental protection. As Mähler and Pierskalla (2014) argue

¹³⁵ Consequently, finalized consultation processes nearly exclusively connect to hydrocarbons. For the hydrocarbon sector, consultation rights are specified in Supreme Decree N° 29033 (16.2.2007), the first degree of its kind in Latin America (Schilling-Vacaflor 2013). Yet, Schilling-Vacaflor (2013), who analyzed consultation processes in the gas sector, identified significant shortcomings in the legislation and its implementation. Examples include exploration work beginning prior to consultation, bribing of local decision makers, and privileging better organized groups and actors closer to the MAS government.

for conflict levels in the Bolivia gas sector, high-value natural resources are important catalyzing frames for indigenous mobilization over territory.¹³⁶

Against the background of economic dependence on natural resources and simultaneous demands by parts of the social movements to strengthen environmental and indigenous rights, the government has opted for a combination of legitimizing strategies for its mining expansion. Vice-President Álvaro García Linera (2012) argued for a transition period, when Bolivia needs to expand extractivism to subsequently overcome it. The Morales administration also opposed critical arguments from civil society and consultation demands by claiming that the MAS would already represent these popular demands as an institution constituted by the Bolivian social and indigenous movements. Following this logic, there is no need for the old way of incorporating their interests through prior consultations since the indigenous population is part of the government (Schilling-Vacaflor and Mähler 2015). Frequently, the administration reframes critiques of mining and hydrocarbon expansion as an attack on the national development strategy and poverty reduction initiatives (Canessa 2012; Gudynas 2013). Particularly on criticism from outside core MAS, such as from NGOs and lowland indigenous peoples, the government has reacted in an increasingly aggressive manner (Bebbington 2012, 13).¹³⁷

Success of protest action against extractivism is consequently often linked to the political and cultural closeness of the protesting groups to the MAS movement (Canessa 2012; Schmalz 2013), while petitions of critical groups to receive consultation rights, for example, are rejected. Rejections often refer to the economic needs of the Bolivian population or the cooptation of protest groups by the interests of international organizations (Canessa 2012). In several cases, such as in Mallku Kota, TIPNIS, and Lliquimuni oil exploration, the government opted for a strategy of direct contacts and informal negotiations with representatives of individual communities in the affected area. The administration thereby often bypassed the communal and indigenous organizations and directly compensated individual local actors in extremely poor and disadvantaged areas (see example

¹³⁶ Mähler and Pierskalla (2014) found that in Bolivian provinces with gas, the share of indigenous population had a positive and statistically significant effect on social conflict between 2000 and 2011.

¹³⁷ The conflict with four NGOs escalated in 2015. Vice-President García Linera claimed that the organizations Fundación Tierra, CEDIB, CEDLA, and Fundación Milenio (which was originally founded by former President Sánchez de Lozada) were defending international interests and were conspiring against the Bolivian government. The government threatened to revoke their licenses, which sparked international protests (Página Siete 2015c). Policy analyst Jorge Campanini (interview, 28.3.2016) sees this as a reason why environmental NGOs in Bolivia have lowered their profiles and have not investigated the big industrialization projects, including the lithium project, any further. The campaigns to defend themselves against this criticism have, moreover, bound their resources.

in Footnote 132). Pellegrini and Ribera Arismendi (2012) see these negotiations as a state version of the “divide and conquer” strategies used by transnational companies throughout Latin America.

When comparing economic with environmental and indigenous conflicts, clear differences in mobilization patterns, power structures, and success in reaching individual goals are visible. While economic conflicts are frequently initiated by powerful mining actors, conflicts regarding environmental issues and the protection of indigenous rights stem from community-based concerns of less organized groups. Miners, both cooperative and employed, have a long tradition of protest and are a particularly influential electoral group. Therefore, they could increasingly reach goals by resorting to violence. While cooperative miners might have gone too far in their recent violent escapades, losing considerable government support, they have obtained substantial benefits and preferential access to lucrative resources as a result of persistent resistance.

In comparison, environmental and indigenous conflicts are less violent but they are also more cumbersome; they take longer and are less often successful. They expose state selectivity, shortcomings in the legal framework, and its implementation. While in some instances, local protests for environmental and indigenous rights have resulted in legal change, as in the case of Huanuni, this is no guarantee that actual measures of protection are ever taken. Moreover, as Arze Alegría (2014) points out, in most conflict constellations, the Morales government has failed to intervene when conflicts were latent and only took action when they had already turned violent, thereby again giving preference to the more powerful mining stakeholders over other place-based actors.

4.6 Implications of the MAS Mining Politics for the Lithium Project

Policy making in the “process of change” is burdened by the inconsistency of the different political goals of the Morales administration. In the MAS movement, the discursive orientation towards *vivir bien* stands in contradiction with the extractive orientation that marked the Bolivian economy for nearly 500 years and is also named the basis of economic policy making in the new Constitution. The MAS has successfully used resource income for social spending, job creation, and poverty alleviation. These positive impacts, however, come with the downside of extractive expansion in indigenous and protected areas. In the light of these developments, particularly urban groups within and outside of MAS found their post-developmental strategies rooted in the concept of *vivir bien* no longer represented in the commodity-based modernization project implemented by the government of Evo Morales (Bertelsmann Stiftung 2016). Yet, resistances against extractivism as a development model and the resulting environmental and social impacts proved less relevant than economic mining conflicts over rent distribution.

Nonetheless, critical scholars describe Bolivia as a profoundly neo-extractive society. As the Argentinean sociologist Maristella Svampa (2013, 79) formulates it, Bolivia has developed from the neoliberal Washington “Consensus of Monetization” to a “Consensus of Commodities”. Under President Morales neoliberal criticism, popular politics and a discourse of sovereignty coexist with a commodity-based development model which incentivizes an extractive expansion that has in many cases violated the rights of local communities (ibid.). At the same time, the mining sector has “been used as a political tool to strengthen the discursive claim of the recuperation of the natural resources” (interview with mining analyst H. Pacheco, 18.4.2016).¹³⁸

Attempts to consolidate public mining in Bolivia did, however, fail. After more than 10 years of the “process of change”, mining in Bolivia is, just as in the times of the tin barons, fundamentally organized around private capital (Fundación Jubileo 2012; CEDIB 2013). Many scholars agree that the initially proposed structural transformations in mining have not taken place (Fundación Jubileo 2012; Molera Simarro and Paz Antolín 2013; Quiroga Trigo 2014; Radhuber and Andreucci 2014; Ströbele-Gregor 2015). Despite the unique opportunity of a particularly long mining boom and

¹³⁸ Original quote: “Entonces, es una minería que no ha mejorado en términos de inversión, no ha mejorado en temas de tecnología de explotación y demás, y solamente ha sido utilizado como una herramienta política para fortalecer el discurso reivindicativo de recuperación de los recursos naturales.”

stable political majorities, the Morales government did not use its leverage for systematic reforms and investments in mining exploration and modernization. Rather, they continued a political mining project initiated during the neoliberal structural adjustment period of the 1980s. The government also stayed committed to procyclical resource-money-based investment policies, which are only beneficial at high resource prices. In boom years, this has deepened rentier state developments, as the mushrooming of mining cooperatives demonstrates, while the current bust years could, similar to post-1952 developments, support debt creation and macroeconomic imbalances (compare Auty and Gelb 2001).

A central problem in the public mining sector is that different cash transfer programs were directly linked to resource income. Additionally, the expansion of personnel in the sector, for example in Huanuni and Corocoro became a financial and social challenge. High mineral prices and state selectivity have also favored the politically influential cooperative sector, which could expand and consolidate as a mining actor. Cooperative miners counteracted the change process in mining, opposing the nationalization of mines and the reestablishment of a strong public mining industry (Quiroga Trigo and Avejera Udaeta 2014).¹³⁹ The rise of cooperative mining coincided with a surge in violence, which, in the light of decreasing prices, is accelerating further. Simultaneously, price declines limit the government's ability to distribute income selectively to pacify the cooperative sector and other mining actors. Consequently, nationalizations in mining were, rather than part of a strategic industrialization agenda, reactions to popular demands.

The failure of political reform in mining resulted in the disappointment for the members of the MAS movement that had hoped for more profound structural changes in mining. Former MAS senator and mining professor Carlos Sandy (interview, 9.11.2015) expressed this sentiment in an interview with me:

“And everybody thought that with the government of Evo Morales we would return, would take another turn at state exploitation, the creation of new businesses. What has happened is the complete opposite; everything has been handed over to the mining cooperatives.”¹⁴⁰

¹³⁹ This was also mentioned in interviews with mining analysts C. Sandy (9.11.2015), J. Campanini (28.3.2016), H. Pacheco (18.4.2016) and J. Villalobos (4.12.2015).

¹⁴⁰ Original quote: “*Y todo el mundo pensaba que con el gobierno de Evo Morales íbamos a retornar, retomar otra vuelta a la explotación estatal, creación de nuevas empresas. Ha ocurrido totalmente lo contrario; todo se lo han entregado a las cooperativas mineras.*”

The swelling mining violence, the power of cooperatives, the failure to transform the mining sector structurally, the near bankruptcy of state mining sites, and widespread problems in government industrialization initiatives (Karachipampa, Mutún etc.) reflect negatively on the MAS. Evo Morales has made government leadership in resource extraction a central pillar of his political agenda, while the multiple shortcomings of state mining prevent real change. It is against this problem-laden panorama that the importance of the lithium program becomes clear. Lithium does not face all of these challenges and is hardly affected by the difficulties that burden state mining in general.

First, lithium and potassium industrialization is free of historic cooperative demands. With both resources declared strategic, meaning they can only be exploited by the central government, cooperatives have limited access to these projects. Moreover, the complexity of lithium industrialization does not make it a good target for cooperative mining, which lacks the technical and professional capacity (interview with mining analyst H. Pacheco, 18.4.2016). Against this background, cooperative lithium exploitation is improbable, making the lithium project a flagship initiative for the agenda of public mining sovereignty envisioned by Evo Morales in the beginning of his presidency. Second, lithium, in comparison to traditional mineral resources, has not seen price declines and the impoverishment of deposits. Rather, its value is increasing and Bolivia holds the largest resources worldwide. Third, after many historic failures of industrialization in the mining sector, the most visible being the ruin of Karachipampa, the lithium program has taken steps to begin lithium-ion battery production. This is indicative of technological industrialization in Bolivia, a notable development.¹⁴¹ Fourth, contrary to resources that were already exploited under previous governments and within existing contractual frameworks, the MAS administration is able to design resource politics with less preconditions and fully within the logic of its own political project. Finally, unlike all other COMIBOL projects, lithium exploitation has not resulted in any major conflicts. Thus, the lithium project could, through its non-cooperative, strategic, industry-focused, and peaceful character, be a real alternative to traditional mining endeavors. It stands out as the only MAS mining project that has real potential for long-term success and consequently has developed into a poster child of the government's industrialization strategy in mining.

President Morales has personally pushed the lithium project from the very beginning and has charged his confidante and former Minister of Mining and Metallurgy Alberto Echazú with the

¹⁴¹ Critical voices question the industrial quality of the project. This will be further discussed in subsequent chapters.

implementation of COMIBOL's largest initiative. While COMIBOL was weakened in the struggles with cooperative miners and by the new mining law, the lithium organization GNRE grew stronger and more autonomous over the same period. The GNRE received funding for its flagship project and, as will be shown, can act with administrative autonomy. In result, the public, sovereign approach to natural resource governance originally envisioned by the MAS administration is visible in lithium mining and processing. To what extent is discussed in the following case study chapters.

5 Lithium Exploitation in Bolivia

5.1 Introduction to Evaporite Resources

Evaporite resources are “any of a variety of individual minerals found in the sedimentary deposit of soluble salts that results from the evaporation of water” (Encyclopedia Britannica 2007). Evaporites are frequently found in brine, salt solution, deserts, and saline lakes. The Bolivian Program for the Industrialization of Evaporite Resources focuses on several brine minerals, most importantly lithium but also byproducts of lithium processing, such as potassium and magnesium.

Lithium (Li) is a soft, silver white metal. The name lithium was adapted from Greek and means stone. The element was discovered in 1817 by the Swede Johan August Arfwedson. Under standard conditions, it is the lightest and least dense solid element in the world. It belongs to the group of alkali metals¹⁴² and is the third element in the periodic table of elements. Amongst alkali metals, it possesses the highest melting and boiling point (Kunasz 2006). Lithium also has the largest specific heat capacity¹⁴³ in solid elements and is thus a good heat and electrical conductor; but it is also flammable and potentially explosive. Since the metal is highly reactive, it does not occur freely in nature but in compounds only (ibid.).

Commercial production of lithium was started in 1925 by the German Metallgesellschaft (formerly Foote Minerals, now Chemetall GmbH), which still is one of the biggest lithium producers in the world (Kunasz 2006). First industrial uses were in the glass and lubricant industries. Yet, it was not until the 1940s that the properties of this light metal were fully understood in military tests – for example as material for emergency signaling and as component of submarines and rockets (ibid.). Large scale industrialization started after the Second World War, when the United States began to produce tritium, an important component for hydrogen bombs, from lithium (Cardarelli 2008, 219). Between 1953 and 1958, the US government through its Commission for Nuclear Energy was the largest global lithium consumer. This supported the rise of the two North American lithium giants Lithium Corporation of America (later FMC) and the above mentioned Foote Minerals (Nacif 2012). When government interest in the resource diminished, the industry was left with

¹⁴²The group of alkali metals is the first group of the periodic system of elements and consists of the six chemical elements lithium (Li), sodium (Na), potassium (K), rubidium (Rb), cesium (Cs), and francium (Fr).

¹⁴³The specific heat capacity is the amount of heat energy required to increase the temperature of a unit of quantity (mass or mole) of a substance by one degree.

overcapacities¹⁴⁴ and invested in commercial markets – such as ceramics, greases, aluminum, pharmaceuticals, and batteries (Kunasz 2006, 599).

Lithium is extracted from hard rock minerals found in pegmatites (26 percent of extractions)¹⁴⁵; from lithium-rich brines such as continental brines (salt flats), geothermal brines, and oilfield brines; clays (66 percent); and from sediments (8 percent) (Espinoza Morales 2012b). As for pegmatite lithium deposits, the resource can be found in nearly 150 different minerals but only a few – especially spodumene, ipidolite, and petalite – are commercially viable sources of extraction (Kunasz 2006). Industrial uses of lithium saw a clear shift from pegmatite resources to continental brine deposits in the last decades, since production from mineral resources is more energy intensive and costlier than from brine (Kunasz 2006, 599; Sieland 2014, 3). Lithium obtained from hard rock minerals is more frequently employed in the production of glass and ceramics (Rüttinger and Feil 2010, 4). Industrially, lithium is used in three different forms: as lithium ores and concentrates (46 percent), as lithium chemicals¹⁴⁶ (36 percent), and as lithium metals (18 percent).

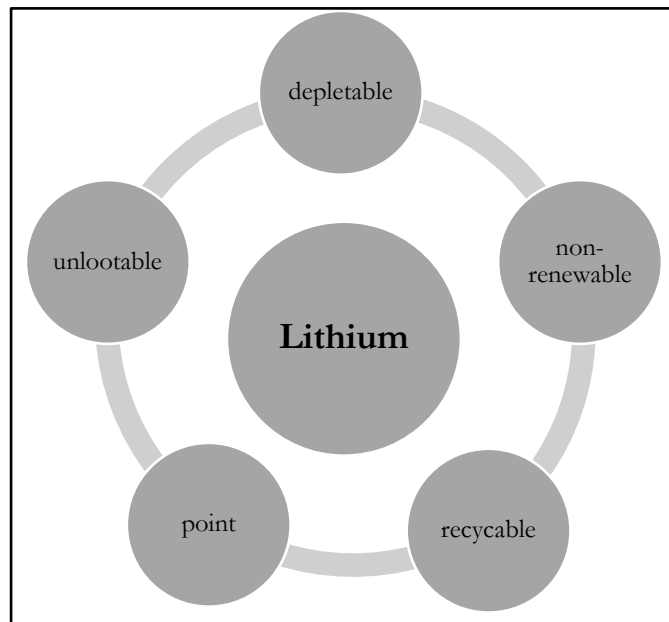


Figure 6: Characteristics of Lithium in Bolivia

Linking back to the earlier described typology of natural resources used in the political sciences, lithium can be defined as a depletable, non-renewable, and recyclable resource. It is a point resource found in a defined region of Bolivia. With regards to conflict research categories, it is an unlootable resource, due to the advanced technology necessary to extract and process it (Figure 6). This valuable commodity is also a good example of the human construction of commodities.

¹⁴⁴ According to Garret (2004, 99), in the 1960s after the end of the US state lithium program, only 20 percent of industry capacities were used.

¹⁴⁵ Pegmatites belong to the group of igneous rocks. Igneous rocks originate from cooled and solidified magmatic fluids. Pegmatites, in comparison to other types of igneous rocks, form through crystallization and are very coarse minerals. Most pegmatites can be described as granite rocks (Encyclopedia Britannica 2006).

¹⁴⁶ Lithium chemicals include lithium carbonate (Li_2CO_3), lithium hydroxide (LiOH), lithium fluoride (LiF), lithium chloride (LiCl), and lithium hydrochloride (LiClO). Li_2CO_3 , which is used in batteries and is consequently the focus of the Bolivian industrialization program, is nearly exclusively produced from brine (Cardarelli 2008, 221, 229).

Before the discovery of its uses in the ceramic and glass industry in the 1920s, lithium had no commercial value. With the emergence of portable electronic devices dependent on rechargeable batteries, the lithium market expanded significantly adding to the commodification of the metal.

5.1.1 Industrial Uses of Lithium

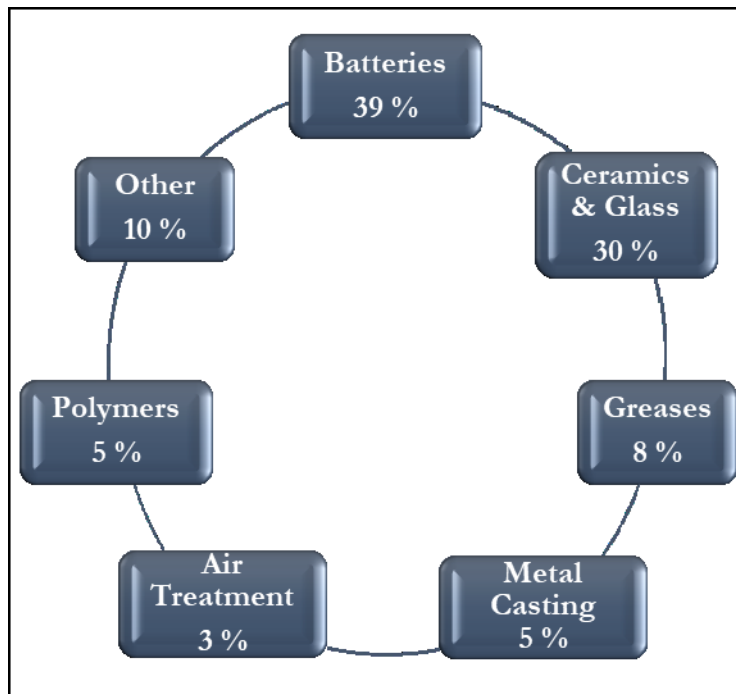


Figure 7: End Uses of Lithium (2016) (USGS 2017)

Lithium is a crucial component of primary and rechargeable batteries for electronic devices such as laptops, cellphones, and electric cars (Figure 7). It could also become an important technology for grid electricity storage based on lithium-ion accumulators (Fox Davies Capital 2013). Lithium ores and concentrates are used in the ceramic and the heat resistant glass industry. Lithium is, for example, employed in the production of bottle glass, fiber glass, and special glass components for monitors, sanitary products, tiles,

crocery, ceramic cooktops, stove windows, or telescope glass (Cardarelli 2008, 228–230; Kunasz 2006, 610–611). Purified lithium carbonate is necessary for certain medical products and is an important component of drugs that treat bipolar disorder and depression. Lithium is used in the aluminum industry; aluminum lithium is employed in aircraft technology, as it improves strength and elasticity (Kunasz 2006, 610–611). It is also important in the production of air conditioning, lubricating industrial greases, and nuclear bombs (Angerer et al. 2009; Jaskula 2013) (Figure 7).

According to Jaskula (2013) of the United States Geological Survey (USGS), industry consultancies lack consensus on the market shares of the different lithium production segments. The battery market segment has, however, been growing constantly and surpassed other market segments. For the use in batteries, consumer electronics were most important (64 percent), followed by industrial applications (22 percent), and automotive uses (14 percent) (ibid.). 85 percent to 90 percent of

lithium-ion batteries are produced in China and South Korea, making Asia the biggest lithium consumer (*ibid.*).

Lithium is an important resource for battery production; it has several important advantages over other power storage materials. It has the highest electric output per weight unit and the highest charge to weight ratio, meaning that batteries are lighter and recharge quickly (Garrett 2004, 190–192; Kunasz 2006, 610). Its wide range of operating temperatures makes it a preferred choice for accumulators (*ibid.*). Moreover, lithium-ion batteries are not affected by the “memory effect”; battery life does not diminish when accumulators are recharged after not being fully used (Fletcher 2011). In EV sector¹⁴⁷, lithium-ion batteries are the most prominent technology. A regular EV battery needs about 12 kilograms of highly purified lithium carbonate (> 99 percent) (Sieland 2014, 2). A standard smartphone accumulator, in comparison, is equipped with only 2 to 3 grams (signumBOX, cited in Fox Davies Capital 2013, 8).¹⁴⁸ Ships, planes, and submarines have also started to use lithium-ion batteries, which has driven up demand in the transport sector (Ströbele-Gregor 2014, 137).

Besides lithium, the Bolivian program also envisions an industrialization of potassium chloride, a halide salt composed of the alkali metal potassium and chloride. Potassium or potash is a comparatively abundant resource; it is present in all living organisms and supports photosynthesis in plants as well as transport between cells in animals (Dye 2016). Commercially, potassium is hardly used as a metal, but is mostly converted into potassium compounds. Potassium chloride is interesting mainly as a fertilizer; 95 percent of commercial potassium use is in agriculture. There are small markets in the chemical industry, for medical applications, and food processing. It is also poisonous, which is why potassium is employed in lethal injections in executions (*ibid.*).

In 2014, potassium fertilizers were produced at 71 exploitation sites around the world, mainly in Russia, Canada, USA, Belarus, Germany, and China (Rauche 2015, 14 et seqq.). The potassium

¹⁴⁷ Different EV types are sold. Full EVs, called battery electric vehicles, are completely dependent on an externally rechargeable battery. Hybrid electric vehicles have a fuel engine and an electric motor. They use internal energy produced through braking, for example, to recharge the internal battery and do not have a plug to connect the battery to the grid. Plug-in hybrid vehicles combine the externally rechargeable battery of full EVs with the electric motor and the internal combustion engine of the hybrid (Angerer et al. 2009, 15–16). In 2015, the market was dominated by hybrids & plug-in hybrid vehicles, while full EVs made up less than one percent of the market, due to the still limited driving range in battery mode (Hocking, Kan, James, Young, Terry, and Begleiter 2016, 5).

¹⁴⁸ SignumBOX and Roskill are business consultancies that issue special reports on the lithium market. However, these were not accessible to the author because of the elevated cost. It is thus only possible to cite secondary sources or abstracts of the reports available online

chloride price has considerably declined over the last years. While the mineral sold at 870 USD per ton in March 2009, prices stabilized at 215 to 230 USD per ton in the period between July 2016 and June 2017 (Index Mundi 2017).

5.1.2 Global Lithium Resources and Market Development

While lithium is more common in the earth crust than, for example, lead and tin, it frequently occurs in low concentrations which are not economically viable to exploit.¹⁴⁹ To assess regional lithium abundance, it is important to differentiate between lithium resources, reserve base, and reserves. While resources are deposits of the metal in a concentration that is potentially exploitable, the reserve base is a subset of the identified resources that fulfills minimal physical and chemical conditions for exploitation. Reserves are again a subset of the reserve base. The term describes the part of the reserve base for which exploitation is at the moment economically and technically viable (USGS 2016).

The amount of global lithium resources and reserves is disputed.¹⁵⁰ Sieland (2014) estimates the resource total, including brine, mineral, and clay deposits, at 64 million tons, of which 52.3 million are in brine resources. The USGS¹⁵¹ sets global lithium resources at 47 million tons (USGS 2017), while earlier studies by Evans (2008, 12) and the industry consultancy Roskill (2009; cited in Angerer et al. 2009) report 28.5 million and 28 to 30 million tons respectively. Most reserve estimations range between 9.9 and 28.5 million tons (Espinoza Morales 2009). The USGS (2016b) sets them at 14 million tons, while Tahil (2008, 24) believes that there are only four million tons of realistically recoverable lithium reserves.¹⁵²

¹⁴⁹ The average amount of lithium in the earth crust is between 20 ppm and 60 ppm, while its concentration in sea water is 0.18 ppm (Angerer et al. 2009, 7). Ppm means parts per million and accounts for the millionth part of a unit of weight. 20 ppm would hence mean 20 mg of lithium per kilogram of rock or brine.

¹⁵⁰ See Olivera (2014, 92–93) for a detailed overview of deposits and resource estimates from different sources.

¹⁵¹ As observed by Ströbele-Gregor (2012, 18), the validity of USGS data is hardly testable as research methods are not published. USGS data is also partly confusing. Although the organization adheres to the above quoted definitions of resources and reserves, it does not include Bolivia in its reserve estimates and states equal numbers for Chilean resources and reserves.

¹⁵² Tahil is quoted frequently (see Angerer et al. 2009; Salazar and McNutt 2012; Sieland, Schmidt, and Merkel 2013), but his estimations are also criticized as being scientifically unfounded by Jaskula (2013) (see Mandel 2010).

In 2009, 17 countries had identified lithium resources (Roskill cited in Ströbele-Gregor 2011, 15), with many more uninvestigated locations such as potential reserves in Afghanistan (Risen 2010).¹⁵³ The highest lithium concentration is found in the “Lithium Triangle” between Argentina, Chile, and Bolivia (Tahil 2008, 4; Göbel 2013b, 165). In 2017, the USGS adapted its resource estimates for Argentina to 9 million tons, equaling Bolivian estimates (USGS 2017).

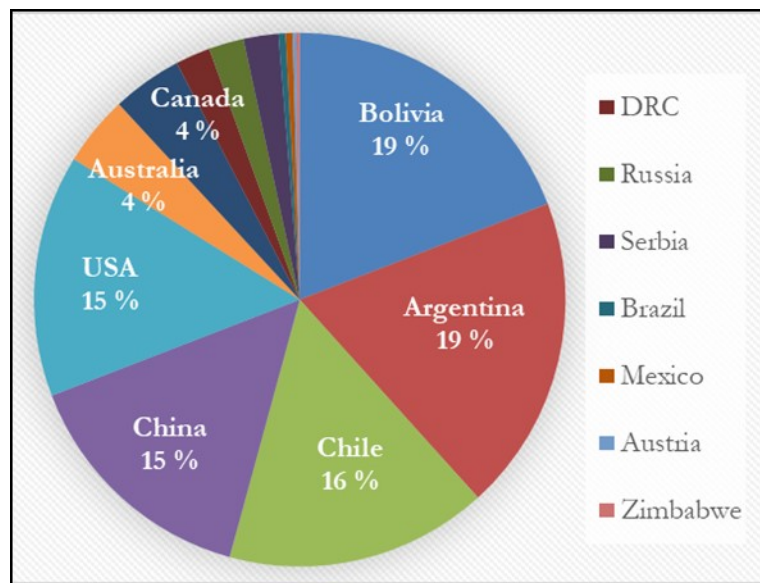


Figure 8: Global Lithium Resources (2016) (USGS 2017)

However, in the scientific debate until 2016, Bolivia was unanimously considered the largest holder of lithium resources (Echazú Alvarado 2015; Garrett 2004; Hocking, Kan, James, Young, Terry, and Begleiter 2016; Rüttinger and Feil 2010; Sieland, Schmidt, and Merkel 2013). Other important brine resources can be found in China and the USA. Hard

rock lithium production is dominated by Australia. Smaller production sites for hard rock lithium can be found in Brazil, Canada, China, Portugal, and Zimbabwe (Salazar and McNutt 2012, 5–6) (Figure 8).

The lithium market is often described as an oligopoly of four multinational corporations that control the global production chain, from exploitation to battery production. The most important corporations are the German Chemetall belonging to the US Rockwood Holdings Inc., the US company FMC Lithium, the Chilean Sociedad Química y Minera (SQM), and Australian Talison Minerals. While these companies dominate the lithium business and hold the most important

¹⁵³ Jaskula from the USGS spoke on the subject in an interview with the New York Times: “There's a lot of lithium out there, and the more they explore, the more they're finding (...) With lithium, it hasn't been looked for with such scrutiny as it is right now, so there's probably a lot of untapped sources of lithium out there that we just don't know about because we haven't been looking in a certain area” (Mandel 2010).

patents, the market has been diversifying in the last years. With lithium demand on the rise, new lithium producers are expected to generate 25 percent of the output by 2020 (Jaskula 2013).¹⁵⁴

While lithium is globally available, the production capacities are concentrated. Chile, Argentina, and Australia account for more than 90 percent of lithium production (USGS 2017) and two large brine operations, the exploitation of the Salar de Atacama in Chile and the Salar del Hombre Muerto in Argentina, secure about half of global production (Nacif and Lacabana 2015, 8). 64 percent of lithium used in the EU is imported from Chile (European Commission 2010, 79). In the last years, Argentina and China could extend operations. In Argentina, production grew by 17 percent between 2014 and 2015 and by a stunning 60 percent in 2016 (USGS 2016b). China could increase production capacities by 20 percent in 2016 (USGS 2017).

Production increase is linked to a continuous expansion of demand. According to the USGS, world lithium consumption reached 37,800 tons in 2016, an increase of 13.5 percent compared to 2015 (USGS 2017). Average growth of lithium consumption was 6.4 percent between 2000 and 2012 (Jaskula 2013) but increased by 16 percent in 2016 (USGS 2017). These developments have also impacted the lithium carbonate price. Fixed contract prices have increased by an average of 14 percent while prices for spot sales were up 40 percent to 60 percent in 2016, briefly even 300 percent, from the previous year (ibid.).¹⁵⁵ The industry consultancy Roskill (2013) calculates a continuous demand increase of 8 percent annually in the base scenario, while signumBox (2012, cited in Fox Davies Capital 2013) predicts 27.3 percent annual growth in the EV battery sector until 2025. It estimates that in 2025, lithium demand for batteries will dominate 60 percent of the global lithium market. Based on a large market study, the Deutsche Bank believes that EV sales in 2025 will reach more than 16 million vehicles including three million cars in pure electric mode (which would mean 2.6 percent of global sales and six times the 2015 market) (Hocking, Kan, James, Young, Terry, and Begleiter 2016, 5). Yet, market development is linked to difficult to predict factors such as the question whether consumers can be convinced by EV technology and whether in the long term, lithium will be considered the best technology for EV batteries.

¹⁵⁴ Salazar and McNutt (2012, 3) point out that the lithium market did not grow steadily over the last years; lithium use decreased from an average of 25,400 tons in 2007 and 2008 to 18,000 tons in 2009 due to the global economic crisis. In the same period, lithium battery use decreased by 35 percent. Later, growth picked up again.

¹⁵⁵ Lithium carbonate price is depending on the quality of the product and the development of demand and supply. While a ton of high-purity (99.5 percent) lithium carbonate sold at 6,500 USD per ton in 2014, spot price estimates were up to 21,000 dollars in 2016. The Deutsche Bank estimates future prices to stabilize between 10,000 USD and 12,000 USD. For lithium of 98.5 percent purity, price estimates settle at 6,000 USD to 7,000 USD (ibid.).

There is still room for improvements in lithium-ion batteries. Battery weight is too high, affecting driving range in pure electric mode. Flammability of lithium-ion batteries has been an issue and EVs are also considerably more expensive than regular vehicles. Factors such as technology innovations, production costs, government subsidies, and fuel price development will determine whether EVs will indeed soon replace conventional cars on a massive scale (Salazar and McNutt 2012). Yet, the market has also seen some important innovations and new EVs, such as the TESLA 3, have overcome important shortcomings with particularly powerful batteries, an all-electric range of 350 kilometers, and half-an-hour charging time (Bignall 2016). Thus, while the extension and timing of a lithium boom is debated, the fact that the lithium market will continue to grow in the next years is undisputed among analysts.

5.1.3 Characteristics of the Bolivian Lithium Resources

Bolivian lithium resources are mostly located in the Salar de Uyuni (Salar de Tunupa or Jacha Jayu Khota¹⁵⁶) in the southwestern part of the country, department of Potosí (Figure 9)¹⁵⁷. The Salar de Uyuni is the largest salt flat in the world (about 10,000 km²) (Risacher and Fritz 1991, 212). Smaller lithium deposits can be found in other salt flats and lagoons in the highlands¹⁵⁸, the most important is the second largest salt lake Salar de Coipasa (about 2,500 km²) in the Oruro department (ibid.). Beyond lithium, the Salar de Uyuni holds boron, bromine, magnesium, and potassium (Sieland, Schmidt, and Merkel 2013, 32–33).

The Bolivian lithium resources are considered among the largest in the world (only Argentinean resources might be equally large) (USGS 2017). Estimations range between 5.4 and 10.2 million tons of lithium resources (Sieland 2014), while reserves have never been calculated seriously (interview with geologist O. Ballivián, 15.12.2015). The USGS (2016b) estimates Bolivian resources

¹⁵⁶ Now mostly referred to as Salar de Uyuni after the largest city in the region, the salt lake was historically called Salar de Tunupa after the Tunupa volcano. Salar de Tunupa is considered the rightful name by many local inhabitants outside Uyuni, but not is used by the government. The original name in Aymara is Jacha Jayu Khota, which means “the great lake of salt.”

¹⁵⁷ This map was taken from www.laenderservice.de/landkarten/suedamerika/bolivien.aspx under the CC BY-SA 3.0 open source license.

¹⁵⁸ According to the mining law (LMyM, Art. 26 II), the following salares or lagoons have been declared strategic areas, which can only be explored and exploited by the central government unless previous exploitation rights exist: Uyuni (10.582 km²), Coipasa (3.300 km²), Chiguana (415 km²), Empexa (158 km²), Challviri (155 km²), Pastos Grandes (118 km²), Laguani (92 km²), Capina (58 km²), Laguna (33 km²) and the smaller salares Cañapa, Kachi, Colorada, Collpa, Lurique, Loromayu, Coruto, Busch or Kalina, Mama Khumu, Castor, Coranto, Celeste, Hedionda, Kara, Chulluncani, Hedionda Sud, and the salares in Saucarí, Sajama, and Sajama Sabaya.

to equal nine million tons. The newest estimates, based on more than 30 drillings in the Salar de Uyuni by the Universidad Autónoma Tomás Frías of Potosí (UATF) and the University of Freiberg in Germany, consider the extent of the extractable lithium resources at 7 million tons (+/- 1.1 million tons) (Sieland 2014). The GNRE has in the past suggested lithium resources in the Salar de Uyuni to be as high as 350 million tons, nearly nine times the USGS world estimate. The GNRE further claimed reserves of over 100 million tons of lithium (530 million tons of lithium carbonate) (Montenegro Bravo and Montenegro Pinto 2014, 73) and two billion tons of potassium (3.7 billion tons of potassium chloride) (Echazú Alvarado 2015, 334).¹⁵⁹ In more recent publications, however, the GNRE has refrained from these grand statements and refers, at least for lithium, to USGS estimates.

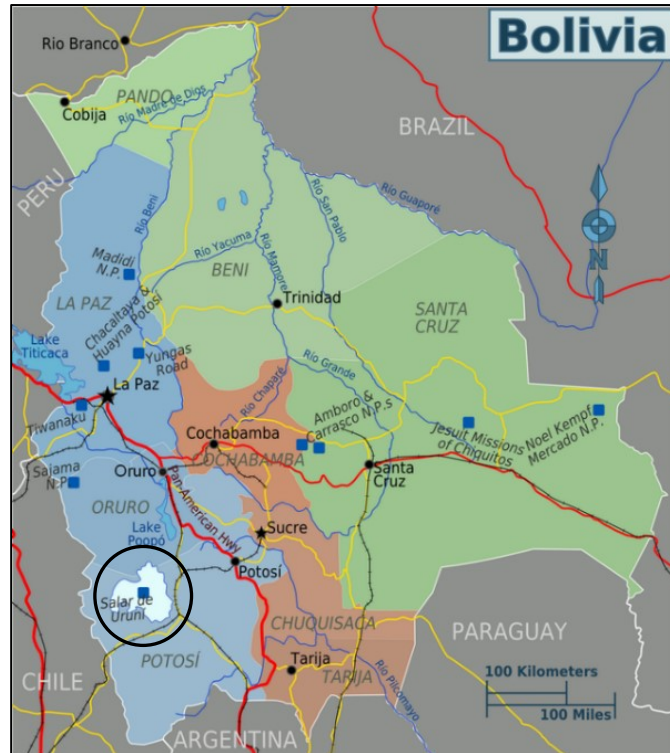


Figure 9: Location of the Salar de Uyuni

The Salar de Uyuni was formed from prehistoric lakes. Evaporite resources were pooled in the area because, besides evaporation, no natural drainage of the incoming river water and rain exists. The salar is covered with a solid salt crust, up to ten meters thick (Sieland 2014, 8–9). Due to historic changes in dry and wet periods, different layers of salt and clay alternate below the crust. Lithium and other resources are found in small hollow spaces (pores) in the brine in the salt layers. Thus, the porosity of the layers is decisive to calculate lithium concentration (ibid.). Sieland (2014) has shown that the porosity in the Salar de Uyuni is not equal in all the layers but that it diminishes with the depth; as more salt layers lie above each other compressing hollow spaces. He assumes that

¹⁵⁹ According to Echazú Alvarado (2015, 334), this would make the Bolivian potassium reserves the second largest in the world, after Canada.

lithium concentration in the deeper salt layers is lower and does not add significantly to the resources estimated for upper layers, justifying more conservative reserve estimates (ibid).¹⁶⁰

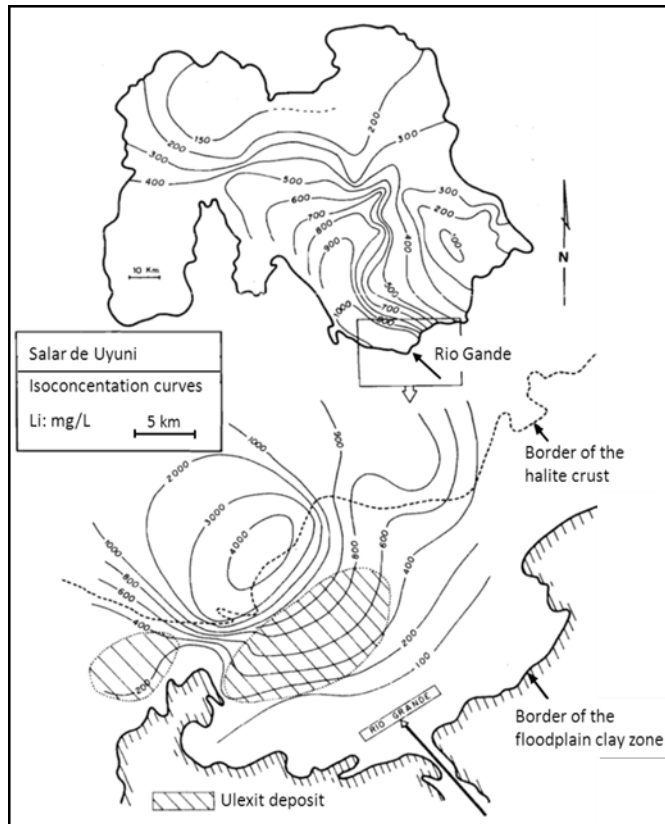


Figure 10: Lithium Concentration in the Salar de Uyuni

Moreover, it is important to consider that lithium concentration varies in the different parts of the Salar de Uyuni. Researchers such as Risacher and Fritz (1991), Sieland (2014), Garret (2004), and Tahil (2008) agree that lithium concentration is highest in the southeastern part of the salar, in the river delta of the Rio Grande de Lipez. In this area, concentrations of up to 4.700 ppm have been measured (Risacher and Fritz 1991), while the economically interesting area of average concentration above 3,000 ppm is no larger than 50 km² (Figure 10).¹⁶¹ In the rest of the Salar de Uyuni, median concentration is estimated between 321 ppm (Garrett 2004, 27–28), 500 ppm (Sieland, Schmidt, and Merkel 2013), and 500 to 600 ppm (Tahil 2008).

Lithium industrialization in Bolivia also faces important shortcomings. While the Salar de Uyuni holds the largest resources, experts agree that the natural conditions are less optimal and that the resource quality is inferior in comparison to neighboring Chile (Sieland 2014, 4).¹⁶² This in turn

¹⁶⁰ This also explains the misleading Bolivian resource and reserve estimates which Sieland, Schmidt, and Merkel (2013, 28–29) assume result from a lack of data on the distribution of lithium in the salt layers and different interpretations of the limited scientific information on salt layer depth. While individual drillings have shown that the salt and clay layers can go as deep as 220 meters and possibly beyond, there is no scientific information about porosity of the pores and lithium concentration. GNRE data is, however, based on a multiplication of estimations for the upper salt crust assuming equal distribution and a continuous depth of 220 meters.

¹⁶¹ Figure 10 was taken from Sieland (2014, 12) with the explicit permission of the author. The graphs is a modification of Ballivián and Risacher (1981).

¹⁶² Similarly, interviews with J. C. Zuleta (2.12.2015), J. Claros (18.11.2015), S. Escalera (25.3.2016) and an anonymous mining analyst (27.11.2015). See also Tahil (2008), Rüttinger and Feil (2010) and Ströbele-Gregor (2015).

makes the exploitation in the Salar de Uyuni costlier. The salt lake holds less brine per surface unit, the lithium in the brine is less concentrated than in Atacama, the deposits are spread out over a larger surface, and evaporation rates are lower (Tahil 2008). Thus, Tahil (2008, 12) considers the exploitable lithium reserves in the Salar de Uyuni to be only 300,000 tons, if significant environmental damage is ruled out. He also expects that the dry and hot Atacama Desert will continue to be the most profitable global exploitation site, even after a commercialization of the Bolivian reserves.

Analysts identify two major problems for lithium industrialization in the Salar de Uyuni, the high concentration of magnesium and the prevalence of seasonal rains and floods (Hollender and Shultz 2010; Mares 2010; Tahil 2008; Sieland, Schmidt, and Merkel 2013; Espinoza Morales 2009). In the Salar de Uyuni, the ratio between lithium and magnesium is 1:20 compared to 1:1 in the Salar de Atacama (Sieland, Schmidt, and Merkel 2013, 32). This is an important shortcoming, since a separation of magnesium from lithium is technically difficult due to the similar chemical behavior of both elements. Moreover, between December and March seasonal rains reach the area and the salar is often flooded, while it dries up the rest of the year (Risacher and Fritz 1991, 213). This extends the evaporation time, thereby raising production costs (Espinoza Morales 2009).¹⁶³

5.1.4 Industrial Processing of Evaporite Resources

Lithium cannot be commercialized as a raw material but needs to be processed at the extraction location (Sieland, Schmidt, and Merkel 2013, 26). To produce lithium carbonate in a salt flat such as the Salar de Uyuni, a frequently used method is the “Footo Process” developed by the Footo Corporation.¹⁶⁴ With variations this procedure is also used in the Bolivian project. In this method, the brine is extracted from the porous salt layers and collected in industrial pools for natural evaporation. During the evaporation period of several months, varying with the natural conditions,

¹⁶³ The traditional evaporation process takes eight to twelve months. Rain can prolong the process or, if the pools are flooded, dilute the brine to an extent that it affects the whole process. The former scientific advisor to the GNRE program Guillermo Roelants (interview, 20.5.2016) sees this as a challenge, as it extends the evaporation process in Bolivia by about a month, but not as an unmanageable problem. Tahil (2008, 12), on the contrary, points to the solar evaporation rate which is less than half of that of the Atacama desert, while Sieland, Schmidt, and Merkel (2013, 30) conclude that an all-year-round evaporation process as practiced in Chile and Argentina is not feasible in Bolivia.

¹⁶⁴ Most brine operations in salt lakes use a variation of this process. In 2013, the Korean company POSCO caused considerable furor when it presented a potential alternative processing method that produces lithium carbonate in only eight hours. In a joint venture, POSCO is testing this method in a brine operation in Chile. If this should prove feasible on an industrial scale, it could revolutionize lithium processing and tremendously reduce production time and costs (Ströbele-Gregor 2015). A shortcoming is that it does not consider side-products such as potassium.

the lithium concentration in the brine is increased. Depending on the environment, the saturation point can be as high as the direct production of lithium chloride (Garrett 2004). The concentrated brine is then further purified of residual magnesium and other substances in a recovery plant. In the next stage, the lithium-rich brine reacts with sodium carbonate to create lithium carbonate (Espinoza Morales 2012a; Garrett 2004).

In Bolivia, the evaporation process is based on a production line of nine pools of diminishing size. GNRE targets 25 of these pool cycles (interview with R. Martínez, 12.11.2015) covering more than 2,600 hectares in the Salar de Uyuni (GNRE 2015). In the process, other brine resources precipitate in different pools and at different moments of the process.¹⁶⁵ Potassium, for example, is harvested as potassium chloride before lithium and is further processed on the plant to increase potassium content to 99 percent (interview with L. Villaroel, head of GNRE potassium plant, 12.11.2015). In the Bolivian project, the evaporation process needed to be adapted to the natural conditions, particularly the seasonal rains. The evaporation cycle is estimated to take with twelve months considerably longer than in neighboring countries (Montenegro Bravo and Montenegro Pinto 2014). Espinoza Morales (2009) points out that evaporation pools could be designed to be larger and shallower so as to reach sufficient evaporation in the eight to nine months' dry period. Yet, pools are laid out with costly geotextiles to make them impermeable, so larger pools would raise infrastructure costs considerably.

The chemical compilation of each brine is different and the production process needs to be designed for the individual brine. In Bolivia, a central problem is the high magnesium content. One solution that was first envisioned was the enrichment of the brine with calcium hydroxide or lime, called limewash, before solar evaporation. This would support the reduction of sulfate and, in consequence, magnesium contents in the brine and also lower boron concentration (Taucer and Anze 2013, chap. 2; Zuleta Calderón 2013a).¹⁶⁶

¹⁶⁵ The first pool is with 30 hectares the largest. In this initial stage, sodium chloride (salt) can be harvested. In the second pool, which is with 15 hectares half the size of the first pool, potassium chloride of low content (12 to 14 percent) is produced. Lithium only emerges in pools seven and eight, while magnesium chloride precipitates in the last pool, the smallest of the line (interview with Raúl Martínez, head of GNRE community relations, 12.11.2015).

¹⁶⁶ Magnesium in the brine can be controlled by lowering or eliminating sulfate contents. In Uyuni, however, sulfate concentration in the brine is high. This is also true for Chile, where this problem was resolved by mixing high and low sulfate containing brines from different parts of the Salar de Atacama. This procedure is, however, not an option in Bolivia (interview with G. Roelants, former head of the Scientific Committee of GNRE, 20.5.2016). Consequently, lime processing was (or is) considered an alternative procedure to reduce the high amounts of magnesium chloride salts ($MgCl_2$). When $MgCl_2$ is mixed with limewash or calcium hydroxide $(OH)_2Ca$, magnesium hydroxide $Mg(OH)_2$ and calcium chloride $CaCl_2$ are produced (Calla Ortega 2014, 35). In this reaction, magnesium precipitates to

The limewash process could, however, produce a considerable amount of waste containing calcium sulfate, magnesium hydroxide, and borates (see Chapter 6.5). Moreover, this process would need large quantities of lime which would have to be produced or imported and transported to the production site which would raise production costs (anonymous interview with a mining analyst, 27.11.2015).¹⁶⁷ After criticism of this technical choice, the lithium management committee GNRE is now investigating a different separation process seeking the precipitation of lithium sulfate in ambient temperatures. This process would not need initial limewashing and considerably reduce the lime needed in the process. Another way might be a combination of both processes (Montenegro Bravo and Montenegro Pinto 2014, 92 et seq.). It is not clear which process will be followed in the industrial production, since the German consultancy K-UTEK, which GNRE has contracted for the industrial plant design, had not published its results until the end of 2016. Moreover, the waste holds marketable minerals and GNRE aims to establish spin-off industries that reuse the waste. However, this is still being investigated at the UMSA University of La Paz and no concrete steps have been taken (interview with S. Cabrera, UMSA, 19.5.2016).

Considering these shortcomings, different analysts question whether the traditional evaporation pools are a feasible and cost-efficient approach in Bolivia (Espinoza Morales 2012a; interviews with J. C Zuleta; 2.12.2015, J. Claros; 18.11.2015; S. Escalera, 25.03.2016; and anonymous interview with a mining analyst, 27.11.2015). The German University of Freiberg has developed high intensity evaporation cones which have been tested in a pilot project with the UATF of Potosí.¹⁶⁸ COMIBOL has opted to use traditional technologies in its pilot lithium project, making a potential switch in the approach difficult to implement following pilot activities (Guzmán Salinas 2014a, 18–20). Possible environmental implications of the outlined technical choices will be further discussed in Chapter 6.5.

magnesium hydroxide and is replaced by calcium in the brine. The sulfates in the brine react with calcium and eliminate it, leaving lithium-enriched brine (*ibid.*).

¹⁶⁷ Similarly, G. Roelants, former head of the Scientific Committee of GNRE, 20.5.2016, C. Coallaviri, engineer from Tauca, 15.11.2015 and D. Clemente, UATF Potosí, 15.5.2016. In the impact study of the potassium project, it is estimated that for 100 kilograms of brine, 1.9 kilograms of lime would be needed (Taucer and Anze 2013, chap. 2).

¹⁶⁸ The method based on evaporation cones has been criticized by GNRE and different analysts for its inapplicability on the industrial scale and the focus on lithium over potassium (interviews with O. Ballivián, 14.12.2015 and an anonymous mining analyst, 27.11.2015). Jaime Claros, former head of the UATF project, on the contrary, sees the project apt for industrial production levels. He stressed that the UATF project has produced high purity lithium after only eight months of investigations in an environmental friendly process that was faster than the Foote technology and could be managed by local communities (interview, 18.11.2015). The project is at a standstill mainly due to administrative quarrels and power struggles over the directorship of the test plant, but also because it did not receive government funding (Sieland, Schmidt, and Merkel 2013).

5.2 A Short History of Lithium Exploitation in Bolivia

The Bolivian lithium resources have supported scientific investigations and sparked economic desires for more than 30 years and it is of paramount importance to understand the history of lithium exploitation attempts to comprehend the structure of the current project. The first scientific investigations of the Salar de Uyuni started in the 1960s by the German Mining University in Freiberg.¹⁶⁹ The initial systematic study on the Bolivian evaporite resources commenced in 1974, when the French Office of Scientific Research in Overseas Territories (ORSTOM) signed an agreement to undertake geological investigations with the UMSA university of La Paz¹⁷⁰ (Rupp 2013). In the same year, large parts of the salar were declared a fiscal reserve to be administered by the central government.¹⁷¹ The first state company to industrialize the evaporite resources in Bolivia, QUIMBABOL, was founded in cooperation with the military in 1975. Bolivia was ruled by military regimes at this time. QUIMBABOL, however, focused on salt, sulphur, and borates (Echazú Alvarado 2015, 306–307). Lithium investigations intensified one year later when additional studies were carried out by the Bolivian Geological Service (GEOBOL) and the USGS under a joint agreement between NASA and the Bolivian government (Nacif 2012). A 1981 publication from the ORSTOM-UMSA research project stated for the first time that Bolivia possessed the largest lithium resources in the world (Ballivián and Risacher 1981).¹⁷² In 1984, the German Mining University of Freiberg started a cooperation with the Autonomous University Tomás Frías of Potosí (UATF), turning it into the second scientific institution in Bolivia engaged in early lithium investigations (Nacif 2012).

¹⁶⁹ Among the first scientists to study the Salar de Uyuni was Prof. Manfred Wolff from the University of Freiberg, who worked as a professor at the UAFT in the 1960s. During this time, he established the contacts that would later lead to a cooperation between the two universities (interview with J. Claros, 18.11.2015).

¹⁷⁰ UMSA University, founded in 1830, is the principal public university in Bolivia. It is also the largest (over 80,000 students) and most prestigious of all Bolivian institutions of academic education.

¹⁷¹ A fiscal reserve must be declared by a Supreme Decree. When such a reserve is established, new mining rights cannot be granted over the area (LMyM, Art. 24). The state obtains far-reaching exploitation rights for natural resources within the fiscal reserve. As Hollender and Shultz (2010, 20) point out, after the first declaration of the Salar de Uyuni as fiscal reserve in 1974, the reserve was modified five times; sometimes extending it and sometimes reducing it. These changes always happened in accordance with the political interests of the time but were never negotiated with the affected communities and have to be considered means to secure central state interests vis-à-vis local demands for land rights (Rupp 2013).

¹⁷² The present lithium resource estimates in the Salar de Uyuni are still largely based on this early study of the Frenchman Risacher and the Bolivian geologist Oscár Ballivián (from the UMSA) (Sieland, Schmidt, and Merkel 2013, 28–29). Ballivián was, in the late 1980s and early 1990s, the chief Bolivian negotiator for the contract with the US company LITHCO to exploit lithium in the country. He later worked for LITHCO / FMC in Argentina. This engagement with LITHCO led him to be blacklisted from Morales' lithium program, thus excluding one of the most renowned international experts on the subject from the state lithium project.

Since the dimension of the lithium wealth became known, several Bolivian governments have actively considered developing a commercial use for the resource. In 1982, shortly after the reestablishment of democracy, the government of Siles Suazu signed a technical corporation agreement for the investigation and exploitation of the Bolivian salt flats with the Inter-American Development Bank and the Board of the Cartagena Agreement (Junta del Acuerdo de Cartagena – JUNAC)¹⁷³ (Echazú Alvarado 2015, 308). After different attempts to prepare international tenders, a public actor to oversee evaporite resource usage was created in 1985, the above mentioned Industrial Complex of Evaporite Resources in the Salar de Uyuni (CIRESU). CIRESU could associate itself with private companies or prepare a tender for the exploration, exploitation, and commercialization of evaporite resources (Nacif 2012). It can thus be seen as a predecessor to the current lithium organization GNRE which with the mining law of 2014 has taken over the role and the property of CIRESU (LMyM, Art. 73 II and III).¹⁷⁴

In 1986, the entire Salar de Uyuni was again declared fiscal reserve (DS 21260 of 16.5.1986). The fiscal reserve and the established rights of CIRESU should have supported a public exploitation of the valuable natural resources. Yet, the privatization spirit of the time and tremendous debts severely curtailed government leeway to initiate a public exploitation project. In late 1985, CIRESU was mandated to prepare licensing terms for the Uyuni deposits, which were published in 1987. The following year, the government directly invited the US-American Lithium Corporation of America (LITHCO, now FMC), then principal provider of lithium products, for negotiations.¹⁷⁵ These consultations resulted in a contract which was signed in November of 1989 (Echazú Alvarado 2015; Nacif 2012).¹⁷⁶ As Rupp (2013) points out, it was also this ambivalent actuation of

¹⁷³ The Cartagena Agreement supported the sub-regional integration of Bolivia, Peru, Colombia, Ecuador and Venezuela and was the antecedent institution to the Andean Community (Comunidad Andina – CAN).

¹⁷⁴ The CIRESU board was headed by the mining ministry. Further representatives came from the ministries for planning, finance, defense and the armed forces. Other members were COMCIPO and different regional civic committees, the departmental branch of Central Worker's Union of Bolivia (COB) and the UATF University of Potosí (Echazú Alvarado 2015, 309). It was also due to the multitude of actors with very different interests and demands that the organization was never very powerful.

¹⁷⁵ As Nacif (2015, 233) points out, LITHCO also decided to re-orientate its commercial interest to South America, as it faced environmental charges in the United States for contamination at the hard-rock deposits in Bessemer City.

¹⁷⁶ According to the mining minister of that time, Jaime Villalobos (interview, 4.12.2015), LITHCO had first approached Bolivia during the Banzer dictatorship of the 1970s. When the government did not show sufficient interest, the company started negotiating with Argentina. It reached a provisional agreement with the Argentinean province Catamarca in 1988 (Nacif 2015, 235). The Bolivian government of Paz Estenssoro (1985–1989), with Minister of Mining Villalobos, sought new investment opportunities in mining and approached LITHCO in the mid-1980s to pause negotiations with Argentina and enter in negotiations with Bolivia, which the company did. Villalobos explains that LITHCO was directly invited since no other company was interested and competent (interview, 4.12.2015). The only other competitor of LITHCO at the time was Foote, which was active in Chile. Negotiations were supported by different international consultants, such as the Commodity Research Unity of Great Britain.

the government that resulted in public mobilizations against lithium exploitation in the following years.

Simultaneously, regional interest in lithium increased and debates about the legality of the contract without a public tender began. In 1987, the Committee for the Defense of the Salar de Uyuni (Comité de la Defensa del Salar de Uyuni) was founded, which took position against negotiations with LITHCO and demanded the signing of the contract be postponed. The Defense Committee was headed by the Potosí Civic Committee COMCIPO, the departmental branch of the COB, as well as the UATF of Potosí (paradoxically all members of CIRESU) (Rupp 2013). Local action stemmed from the syndicate FRUTCAS, the Regional Unique Federation of Peasant Workers of the South Altiplano of Bolivia (Federación Regional Única de Trabajadores Campesinos del Altiplano Sur de Bolivia) (ibid.).¹⁷⁷ When it became known that the terms of the contract implied a 40-year-concession of the complete fiscal reserve and, consequently, all its resources, combined with low tax obligations, mobilizations against the contract intensified. The protests culminated in a hunger strike and a nine day blockade of Potosí in April of 1990; the largest in the city until 2010 (Echazú Alvarado 2015, 311).

In response to the protests, the government of Paz Zamora cancelled the contract in May 1990 and mandated the UATF to prepare licensing terms for a public international tender which were finalized in September of the same year (Olivera Andrade 2014, 151 et seqq.).¹⁷⁸ Yet, in the lithium oligopoly, competitors were scarce and, somewhat ironically, the tender was won by LITHCO, then called FMC. The contract was thus, as UATF professor Jaime Claros puts it, very Bolivian, “the same chola with a different skirt” (interview, 18.11.2015).¹⁷⁹ During the years of negotiations with LITHCO, research by Bolivian scientists continued. In the early 1990s, ORSTOM-trained UMSA scientists and researchers from UATF (who had profited from the cooperation with Freiberg), joined forces and presented a project for a lithium carbonate pilot plant to the government. The

LITHCO was mainly interested in lithium exploitation but also in the use of the boron deposits and potentially an industrialization of potassium (ibid.). The contract was finalized shortly before the change of government and the completed contract was handed over to the government of Paz Zamora, who signed it in November 1989 (Olivera Andrade 2014, 149).

¹⁷⁷ FRUTCAS is part of the organized peasant movement and the federation of peasant unions CSUTCB.

¹⁷⁸ The government of Paz Zamora contracted the North American consultancy Crow Agents to evaluate the proposals based on the terms established by the UATF. In the tender, only three formalized proposals were made; FMC (LITHCO), SOQUIMICH (Chile), and COPLA Ltda. (Bolivia) submitted proposals and the evaluating agency recommended to contract FMC (Echazú Alvarado 2015, 312; Olivera Andrade 2014, 152).

¹⁷⁹ Original quote: “*la misma chola con otra polera.*” In Bolivia, “*chola*” refers to a person of indigenous decent that lives in the city (the same term is used in other Spanish-speaking countries with a different meaning).

project proposed an initial investment of 2.3 million USD in the same location where GNRE is currently constructing its plants. It was, however, not implemented, since political interests of the time focused on an international cooperation (ibid.).

In February of 1992, President Paz Zamora signed a contract for lithium exploitation with FMC which basically offered the same conditions as the first version, with slight increases in public participation. Local positions were diverse vis-à-vis the renewed contract, alternating between a full support of the cooperation and an outright rejection. While local authorities of the salar provinces Daniel Campos and Antonio Quijarro¹⁸⁰ supported the involvement of the international company, other regional stakeholders were more critical (Rupp 2013). The then head of FRUTCAS, Froilan Condori, for example, vetoed the contract in its modified version¹⁸¹, the departmental branch of the COB demanded a public exploitation of lithium, and COMCIPO felt that the modifications did not go far enough and sought an engagement of parliament in the matter (ibid.). Yet, in the light of increasing criticism from social actors in Potosí, but also as a political gambit of the opposition (of Sánchez de Lozada), the parliament mandated a VAT tax increase from 10 percent to 13 percent when asked to approve the already signed contract. FMC denounced the modifications and, in result, questioned its engagement in Bolivia altogether.

This supported an outcry in Potosí and even opposition actors such as COMCIPO offered renewed negotiations and the original contract conditions of 1989. Yet, since the transnational company saw better investment opportunities elsewhere, it withdrew from the contract in November of 1993. In 1991, FMC had already signed a preliminary contract with the Catamarca province in Argentina to move its operations to the Salar del Hombre Muerto (Nacif 2015, 238). The neighboring country offered better investment conditions, as it had implemented important reforms in the mining sector (see Chapter 8). Argentina also conceded to a less favorable contract than the one the Bolivian public had rejected (Nacif 2012; interview with Ó. Ballivián, Bolivian geologist and chief negotiator for the LITHCO contract, 15.12.2015). In March of 1994, the contract was signed between Catamarca and FMC (Nacif 2015, 243).

¹⁸⁰ An open cabildo in the city of Uyuni had also approved the original contract with LITHCO in April of 1990 (Olivera Andrade 2014, 151).

¹⁸¹ In 1991, FRUTCAS presented a counter-proposal, which demanded a mixed company (instead of a joint venture), an exploitation right for brine but not for all salar resources, a ban of raw material exportation and instead the creation of industry in Bolivia and no free access to other area resources, particularly not water (Gysler 2011, 76–77).

After the failure of the initiative, disillusionment reached Potosí. COMCIPO, which had acted inconsistently throughout the negotiations with the company, was blamed by different sectors of society for ruining an important development opportunity. Large parts of the regional population and the heterogeneous Defense Block had never opposed the engagement of international private actors in lithium exploitation. Different members of FRUTCAS, that the leadership was skeptical of the contract notwithstanding, equally supported the project (interviews with J. Claros, 18.11.2015 and O. Ballivián, 14.12.2015). Many critical stakeholders had not expected that the company would really withdraw from Bolivia and had pushed for a larger participation of regional stakeholders in rents and taxes, a stronger role for CIRESU, and technology transfer (Rupp 2013). Yet, in the recent debate, these early protests are often framed as unanimous mobilizations of Potosí against transnational domination in lithium exploitation (ibid.).¹⁸²

In the years after the failure of the contract, no new attempts for lithium exploitation were made. Considering the oligopoly nature of the lithium market¹⁸³ and the fact that with FMC the only company interested in exploiting the Bolivian resources had settled in Argentina, there was simply no investor available. Yet, while lithium was no longer a focus of government engagement, other resources in the salar area became economically more interesting, particularly borates such as ulexite¹⁸⁴ (Nacif 2012). The mining legislation as well as the mining sector were reformed and investment conditions for transnational companies liberalized even more. In 1998, the government of ex-dictator Banzer (then democratically elected president) lifted the fiscal reserve over the Salar de Uyuni facilitating the installation of the mega-mine San Cristóbal (Law N° 1854 of 8.4.1998) and the concession of ulexite deposits (Gysler 2011, 77–78). This paved the way for the engagement of different private companies¹⁸⁵ as well as activities of mining cooperatives in the Salar de Uyuni. The

¹⁸² Compare also a quote from the head of the lithium project, Alberto Echazú Alvarado: “Nonetheless, history proved the people of southwestern Bolivia right, who resisted, through their civic provincial committees and COMCIPO, the surrender of the Salar de Uyuni for 80 years to the transnational Lithium Corporation” (Echazú Alvarado 2015, 313). Original quote: “*Sin embargo, la historia dio la razón a los pueblos del Sud Oeste boliviano, quienes resistieron mediante sus comités cívicos provinciales y COMCIPO, la entrega del Salar de Uyuni a la transnacional norteamericana Lithium Corporation por ochenta años.*”

¹⁸³ FMC controlled about 50 percent of the lithium market back then (Olivera Andrade 2014).

¹⁸⁴ Boron is a mineral frequently found in brine deposits that in combination with oxygen and other elements forms boric acid or borates (salts). Uses of borates such as ulexite include the glass and ceramics industry and the employment in cleaning and polishing products, insecticides and semiconductors (USGS 2015).

¹⁸⁵ Many of the lucrative concessions (royalties were minimal) were awarded to Chilean companies, among them Non Metallic Minerals S.A. This supported renewed mobilizations in Potosí which aimed at an annulment of these concessions; 68 were granted in 2007 alone (Gysler 2011, 77–78). Also, demands for a public exploitation of evaporite resources by CIRESU increased. Protests intensified after environmental licenses were awarded to Non Metallic and other companies (Rupp 2013). In December of 2003, President Mesa restored the fiscal reserve over the salt lake in the extensions of 1986 (excluding San Cristóbal) and in 2004 most concessions within the reserve,

renewed alternation of the fiscal reserve to facilitate private investments is a good example of land right structures that cater to economic elites and produce institutional inequalities disfavoring local communities (Basedau and Lay 2005, 16). With the establishment and the different extensions of the fiscal reserve, communities were deprived of the possibility to ex-post secure private land titles over the salar area and its surroundings.

For lithium exploitation, a fundamental change in government was needed to provide a new impetus for the project. The election victory of Evo Morales gave boost to the regional *campesino* organization FRUTCAS, which had turned into a close ally of the MAS. Various representatives of FRUTCAS had risen in the MAS to members of parliament and senators. Suddenly, the political climate allowed for a new push to exploit evaporite resources. In the changed political setting, the protest experiences against LITHCO gained relevance in the collective memory as a regional rejection of transnational dominance in the mining sector. This common interpretation limited the political leeway of the Morales government in lithium and potassium exploitation. The former director of COMIBOL, Héctor Córdova (interview, 21.10.2015), noted: “this practically marked the politics and the strategy any future government should use. The Morales government was completely constrained by this decision of the people of Potosí.”¹⁸⁶

Through their local members of national parliament (particularly Froilan Condori, head of the Potosí parliamentary group and later mayor of Uyuni, and Teodoro Ali from Rio Grande), FRUTCAS rallied for the creation of a public lithium company (Bullaín Iñiguez 2008b).¹⁸⁷ In early 2007, FRUTCAS was able to present its idea of the public exploitation of lithium and potash in a reunion with President Morales, Vice-President García Linera, the then head of COMIBOL and the then Minister of Mining Echazú (later manager of the lithium organization GNRE). As highlighted by former mining minister José Pimentel (interview, 4.5.2016), the reunion was a total success and the president mandated FRUTCAS to develop a design for a pilot plant. Later that year, the industrialization of the evaporite resources was included in the National Development Plan.

including those of Non Metallic Minerals SA, were annulled. In 2006, Non Metallic sought international arbitration against Bolivia (Gysler 2011).

¹⁸⁶ Original quote: “Entonces eso marcó prácticamente la política y la estrategia que debía utilizar cualquier gobierno posterior. El gobierno de Morales estaba condicionado completamente por esta decisión del pueblo de Potosí.” In the future scenarios for the lithium project, developed by Augstburger based on 30 expert interviews, the scenario of a foreign company exploiting Bolivian lithium was evaluated as the one most likely to stir social conflict.

¹⁸⁷ Then named EPSICRESU (Empresa Pública Social de Industrialización y Comercialización de los Recursos Evaporíticos de la Salmuera del Salar de Uyuni – Public Social Company for the Industrialization and Comercialization of the Evaporite Resources in the Brine of the Salar de Uyuni).

Lithium exploitation was mentioned as important pillar in the aspirational development strategy which should be based on a diversified economy to create what the MAS government refers to as “a productive Bolivia” (Ministerio de Planificación del Desarrollo 2007, 121 et seqq.).

In the design of the pilot plant, as will be outlined in more details further on, FRUTCAS was intensively counseled by the owner of a regional borate company, Guillaume (Guillermo) Roelants du Vivier. The Belgian was, according to analyst Zuleta, “the author of the strategy” (interview, 2.12.2015). Roelants had advised FRUTCAS as a consultant in different projects since the 1980s and his company Tierra had offered to support the construction of a pilot plant in the Salar de Uyuni in 1989 (Última Hora 1989). Roelants later became close to President Morales and his administration which accepted the FRUTCAS / Roelants plan to exploit the Bolivian evaporite resources and subsequently made it state policy (Echazú Alvarado 2015). Thus, the definition of a regional position vis-à-vis the state lithium project was completely absorbed by FRUTCAS, while other regional actors, which had also been active in the protests of the 1980s and 1990s, such as the University of Potosí, were sidelined.

5.3 A Chronology of the MAS Lithium Project

In a Supreme Decree (DS N° 29496) on April 1 of 2008, the government declared the industrialization of lithium and potash a national priority and COMIBOL was charged with a productive project in the Salar de Uyuni. For this, the public mining company was mandated to create a new organizational entity within its structures and provide an initial capital of 5.7 million USD (ibid.). Two days later, the National Directory for Evaporite Resources (DNRE) was founded within the structures of COMIBOL (Directory Resolution N° 3801 2008).¹⁸⁸

In the presence of President Evo Morales and nearly 2,000 people from the region, the cornerstone for a lithium pilot plant was laid on May 10, 2008 (El Diario 2008). Initial government activities focused on the creation of organizational and scientific structures for the management of the project. Scientific cooperation was primarily sought with the UMSA in La Paz and the Technical University of Oruro (Universidad Técnica de Oruro – UTO) while difficulties existed with the

¹⁸⁸ Sometimes referred to as General Directory for the Industrialization of the Evaporite Resources of the Salar de Uyuni (Dirección General de Industrialización de los Recursos Evaporíticos del Salar de Uyuni – DGIRESU).

UATF of Potosí.¹⁸⁹ In October of 2008, a first lithium laboratory was opened at the UMSA Institute of Metal and Material Studies (Montenegro Bravo and Montenegro Pinto 2014, 87–88). A Scientific Committee for the project was formed in 2009 under the leadership of Guillermo Roelants (ibid.).¹⁹⁰

In the same year, DNRE set up first infrastructures on the border of the Salar de Uyuni, including offices, dormitories, facility buildings as well as provisional laboratories (Montenegro Bravo and Montenegro Pinto 2014, 87–88). The construction of infrastructure in such a remote and disconnected region required considerable investments. To provide the necessary equipment and materials for construction, an industrial complex at Pulacaya, which had been closed since 1995, was reopened in 2010 (ibid.).

As has been pointed out, the Salar de Uyuni and the surrounding areas were declared fiscal reserves various times since the mid-1970s. In 2007, the whole national territory was pronounced a fiscal reserve, a decision that was later revoked by the new mining law (LMyM, Art. 16 V; see also Chapter 4.4.). The LMyM, however, leaves pre-existing fiscal reserves in place. This means that the fiscal reserve established by Law N° 2564 of 2003 is active on the salar territory, including the salt lake and a large parameter around it. The fiscal reserve encompasses a total area of 21.905 km² and only excludes the territory of the San Cristobal Mine. Consequently, neither (new) private mining concessions nor collective land titles can be granted on the Salar de Uyuni and in its surroundings. The strategic resources lithium and potassium are to be exploited exclusively by the national government and are the responsibility of COMIBOL.

In March of 2010, instead of extending the lithium organization within the institutional structures of COMIBOL, the Morales government envisioned the foundation of a national company for the

¹⁸⁹ The UATF had renewed its partnership with the German university of Freiberg in 2008, when they signed a cooperation agreement (Echazú Alvarado 2015, 316). While, at first, the government wanted to finance investigations at UATF, the relationship soon deteriorated. The UATF spoke out against a management of the project by COMIBOL and supported leadership from the departmental government and CIRESU (Bulláin Iñiguez 2008a). Moreover, based on their studies from the 1990s, UATF and Freiberg concluded that the Foote technology could not be adapted to the conditions in Uyuni and developed an alternative industrialization method which did not accord with the plans from FRUTCAS and the GNRE (interview with Jaime Claros, former head of UATF lithium project, 18.11.2015).

¹⁹⁰ The Scientific Committee for the Investigation and Industrialization of the Evaporite Resources (Comité Científico para la Investigación e Industrialización de los Recursos Evaporíticos de Bolivia – CCII-REB) is responsible for the integration of national experts, for the construction of pilot plants and the cooperation with national and international experts, universities and companies for knowledge exchange to support the project (Echazú Alvarado 2015). See Ministerial Resolution 089 of the MMyM of 31.7.2009.

industrialization of the country's evaporite resources under the umbrella of the Ministry of Mining and Metallurgy. In order to speed up procedures in an overly bureaucratic mining administration, the Bolivian Company for Evaporite Resources (Empresa Boliviana de Recursos Evaporíticos – EBRE) was founded with Supreme Decree N° 444 of 10.3.2010 (Echazú Alvarado 2015, 320; see Chapter 5.3.2). The creation of an independent company had also been the original goal of the FRUTCAS plan for the industrialization of the Bolivian evaporite resources. However, the project collapsed. Key to the failure was that Article 8 of the decree made La Paz the headquarters of the company. Such a centralizing tendency was interpreted as an affront against the regional interests of Potosí and the decentralization envisioned by the Constitution (Propfe 2012, 54–55). Article 371 II of the Constitution mandates that the seat of a mining company needs to be established in the local jurisdiction where most of the resource extraction takes place.

Consequently, the Civic Committee of Potosí, in opposition to FRUTCAS¹⁹¹, rejected the Decree and called for a general strike demanding that the project would be administered from Potosí (Echazú Alvarado 2015, 320). The decree was rescinded in response to the announcement of an indefinite hunger strike, mobilizations in Potosí, and the threat of upcoming regional elections (by Supreme Decree N° 454, 20.3.2010) (Vargas 2010). According to the then head of the Scientific Committee Roelants (interview, 20.5.2016), the original seat of EBRE had been envisioned to be in Rio Grande. This was, however, changed at the last minute at the political level. The protests against EBRE already demonstrate the importance of local and regional demands in the governance of the program, an aspect which will be discussed further on.

In the aftermath of these events, in June of 2010, the DNRE was promoted to National Management Board for Evaporite Resources (Gerencia Nacional de Recursos Evaporíticos – GNRE) (Directory Resolution of COMIBOL N° 4366 / 2010). The headquarters of the GNRE, somewhat paradoxically, stayed in La Paz. While not being independent, the status of a “Gerencia” gave the organization more autonomy from COMIBOL (Echazú Alvarado 2015, 321–322). In October of 2010 the GNRE presented the “National Strategy for the Industrialization of the Evaporite Resources of Bolivia”¹⁹² for the extraction, industrialization, and commercialization of

¹⁹¹ FRUTCAS had also rejected the idea of having the project's headquarters in La Paz but not the decree itself (Echazú Alvarado 2015, 320). In consequence of the failure, FRUTCAS criticized COMCIPO sharply (Rupp 2013).

¹⁹² The national strategy was, however, not published in one concise document but is rather outlined in a myriad of COMIBOL / GNRE documents, interviews, and speeches.

both lithium and potash. According to this strategy, industrialization of the resources is divided into three phases: first, the pilot production of lithium carbonate and potassium chloride (initiated in 2008), followed by industrial production and finally, the development of battery technology (GNRE 2011; Echazú Alvarado 2015). Foreign partnerships are only foreseen for the final phase, the production of lithium batteries (ibid.). Evo Morales envisions future Bolivia as a producer of electric vehicles (Opinión 2008; Guzmán Salinas 2014a; Ströbele-Gregor 2012). Additionally, the MAS administration sought to cooperate with foreign governments for scientific exchange and with international companies as service providers¹⁹³, while the basic process of lithium carbonate production must be developed by Bolivian scientists.

Lithium and potassium industrialization is exclusively financed by national funds; the renunciation of international credits for the project was celebrated as a historical moment. The Central Bank of Bolivia (Banco Central de Bolivia – BCB) and COMIBOL approved over 900 million USD as credit for the industrialization project (Montenegro Bravo and Montenegro Pinto 2014, 69).¹⁹⁴ By 2016, according to external reports, about 250 million dollars had been spent (Hocking, Kan, James, Young, Terry, and Begleiter 2016, 84). The statuses of the three phases by the end of 2016 are described on the following pages.

¹⁹³ For the development of the project, for educational and scientific exchange, different agreements and letters of intent have been signed with foreign governments and companies from e. g. China, South Korea, Iran, Brazil, Finland, Japan, Venezuela and the Technical University of Delft in the Netherlands (Echazú Alvarado 2015). Also, different international companies (e. g. from China, France, Germany and the Netherlands) were contracted as service providers in the project. Further expressions of interest came from large transnational companies such as Mitsubishi, Sumitomo, Boloré and LG (El Diario 2009) which however did not result in formalized cooperation. Foreign companies cannot become involved as partners in project phases one and two, which is why initial foreign interest declined, as many countries sought direct access to raw materials and not industrialization support. As former head of the GNRE Scientific Committee Roelants (interview, 20.5.2016) underlined in relation to the cooperation with foreign partners: “This has had mediocre results. We never had much support from anyone.” Original quote: “(...) *que ha tenido un resultado muy mediocre; nunca tuvimos un gran aporte de nadie.*”

¹⁹⁴ The budget laws of 2011 and 2012 approved 885 million USD for the project sustained by a Central Bank credit. The 19.5 million USD for the first phase were financed from institutional funds of COMIBOL (Montenegro Bravo and Montenegro Pinto 2014, 69). In March of 2015, the Central Bank confirmed a credit of 617 million USD to be invested in fifteen tranches in the construction of the infrastructure for industrial production (La Razón 2015c). 289 million USD are foreseen for the construction of plants for potassium and lithium. The rest is invested in the installment of additional evaporation pools pits as well as support structures such as water and gas pipelines, a high voltage power grid, road services, machines, technical support, and administration (ibid.). In a very minor scale, the program also scheduled investments in environmental management and mitigation (536,000 USD) (ibid.)

First Phase: Pilot Production

During the first phase, originally scheduled to end in 2011, the emphasis was placed on infrastructure, research, and process development. For this phase, COMIBOL budgeted a total of 19 million USD. The pilot phase included the construction of pilot plants with the goal of producing 40 tons of lithium carbonate, 80 tons of potassium sulfate, and 1,000 tons of potassium chloride per month (Echazú Alvarado 2015, 316). The construction of the pilot plants was, however, only initiated in early 2012 and concluded in August 2012 (for potassium) and January 2013 (for lithium) (Montenegro Bravo and Montenegro Pinto 2014, 88). Industrial evaporation pools, storage facilities, roads, a service station, water tanks, and an electricity grid connecting the different facilities were built (GNRE 2014). In 2011, the research infrastructures at the site were substantially extended when five million dollars were invested in a modern research center with six laboratories (Ströbele-Gregor 2014, 151).¹⁹⁵

Both the headship of GNRE (Echazú Alvarado 2015) and COMIBOL (2015) claim that the first phase was successfully finalized, even though the original goals were not fully met. COMIBOL (ibid.) emphasizes that the pilot plant for potassium reaches the envisioned production levels of 1,000 tons of potassium chloride per month. Also, sales of the raw material to Bolivian buyers are documented as first products of pilot potassium industrialization. The lithium pilot plant in turn has not yet secured a monthly production close to the envisioned 40 metric tons. In its corporate magazine, COMIBOL (2015) declared an output of 1.5 metric tons of lithium carbonate per month. According to unconfirmed press reports, Bolivia has sold 24.3 tons of lithium carbonate to Chinese buyers in 2016 (Quintanilla 2017).

During the piloting phase, GNRE also investigated lithium resources in other Bolivian salt flats, particularly in the Salar de Coipasa, the second largest in Bolivia. It is located in the department of Oruro, province of Ladislao Cabrera, municipality of Salinas de Garcí Mendoza (GNRE 2011). In this area, close to the village of Tauca, the GNRE set up an experimental investigation site which opened in February 2013. Service buildings, a laboratory and exploration wells as well as small-scale

¹⁹⁵ The laboratories were set up with the primary goal of developing adapted lithium processing technologies for the Bolivian context. Ströbele-Gregor (2014, 11) points out that this additional investment has not yet resulted in relevant research findings which solve the processing difficulties resulting from the particular chemical environment in Uyuni. She underlines that despite GNRE's attempts and the registration of Bolivian patents (with unclear content), the most relevant patents in this field are held by foreign companies (ibid.).

evaporation pools were constructed (GNRE 2014). In 2011, Bolivia signed an agreement with the Citic Group of China for investigations to evaluate the reserves in Coipasa (Echazú Alvarado 2015, 318).

Second Phase: Industrial Production

The second phase of the project was initially scheduled to end in 2014, and was later extended for at least four more years.¹⁹⁶ In this stage, the focus is on the initiation of the industrial production of lithium and potash which requires the planning and construction of industrial pools and plants on the Salar de Uyuni (Echazú Alvarado 2015, 324–325). By the end of this phase, GNRE originally sought to produce 30,000 tons of lithium carbonate as well as 700,000 tons of potassium chloride per year (ibid.). Later, the industrialization goals for potassium were reduced to 350,000 tons (interview with R. Martínez, head of GNRE community relations, 12.11.2015).¹⁹⁷ For the second phase, investments of 485 million USD are scheduled (GNRE 2011).

In December 2013, the German consultancy firm ERCOSPLAN provided GNRE with plans and a final design for an industrial potassium plant (GNRE 2016a). 18 months later, after an international call was put out, the Chinese company CAMC Engineering Co. Ltd.¹⁹⁸ was selected for the construction of the industrial plant near the pilot facility (27 km into the salar). Plant completion is scheduled to be within 28 months after contract closing (thus in September of 2017) and construction costs are estimated at 179 million USD (ibid.). While the potassium plant is already under construction, the industrial lithium carbonate plant is still in the planning phase. The final design of the plant is, at the time of writing, being developed by the German company K-UTEC AG Salt Technologies for 4.9 million USD. After having signed the contract in August 2015, the engineering plans had to be presented within 10 months (ibid.). According the head of GNRE, this

¹⁹⁶ The GNRE managing director announced that industrial lithium and potassium quantities are produced by mid-2018 (La Razón 2015a). Industrial battery production is foreseen for 2020 (GNRE 2016a, 17).

¹⁹⁷ The industrial plant will be designed for two lines of production of 350,000 tons each. Initially, only one will be built. The extension from the first line of 350,000 tons should then be financed with the income generated from initial production (interview with R. Martínez, head of GNRE community relations, 12.11.2015).

¹⁹⁸ In February of 2016, this company became widely known in Bolivia for a potential corruption scandal that involved President Morales himself and probably played a crucial role in the electoral defeat in the referendum later that same month. In this, most voters opposed a constitutional change that would have allowed Morales to run for another Presidential term. As has been outlined in Chapter 4, Morales' approval ratings tumbled over a relationship with Gabriela Zapata. Despite questionable qualifications, Ms. Zapata had held a high paying position at CAMC (Londoño 2016). In 2016, the GNRE came increasingly under pressure from the opposition over the question whether the tender that CAMC won met all legal requirements and followed the correct procedures (GNRE 2016b).

period was extended by another year (interview with A. Echazú, 17.5.2016).¹⁹⁹ It is important to note that the quantity of lithium carbonate production is not the only concern for the industrialization project; the quality of the product also needs to be taken into consideration. For battery technology, only lithium with a market standard purity of above 99 percent is commercially viable (Sieland 2014, 2).

Third Phase: Battery Technology

The third phase of the project was, like the second phase, extended by four years, and is now scheduled to last until 2020. In this final phase, the focus is on the development of battery technology in association with foreign partners. For this, an investment of 400 million USD is projected (GNRE 2011). In early 2014, an additional pilot plant for battery production was set up in the industrial complex La Palca²⁰⁰, close to the city of Potosí (Echazú Alvarado 2015, 225). The plant with an investigation and research center was bought from the Chinese company Linyi Gelon New Battery Materials Co.²⁰¹ for three million USD (ibid.). The contract includes the installation of the facilities, their calibration and testing, as well as training of the Bolivian workers (Montenegro Bravo and Montenegro Pinto 2014, 91). Currently, about 20 Bolivian engineers run the plant (Sterz 2015a).

However, La Palca is not foreseen for regular production but was set up as an educational center for Bolivian engineers. For future production, the infrastructure and staff would need to be expanded. In this pilot phase, it was planned that the factory would assemble 1,000 small lithium-ion batteries (0.8 Ah) for mobile phones as well as 50 more powerful accumulators (10 Ah), for example for electric bicycles, per day. According to the press, these goals have already been surpassed.²⁰² GNRE (2015a) seeks to use the first products from the training plant for the national electrification plan as storage mediums in photovoltaic systems and for laptops.²⁰³ The batteries in

¹⁹⁹ A scientific exchange with K-UTEC has existed since 2008 (interview with Guillermo Roelants, 20.5.2016).

²⁰⁰ La Palca is a mining center located in the Potosí department, province Tomás Frías, municipality Llokalla, about 10 kilometers from the city of Potosí. The battery center is constructed on the basis of industrial structures from the 1970s which were built in partnership with the Soviet Union. The complex closed in 1986 (La Tercera 2012).

²⁰¹ Some publications refer to the LinYiDake Trade Co. Ltda., which is the responsible subsidiary company.

²⁰² Between January and March of 2015 alone, the plant assembled 4,000 mobile phone batteries (La Razón 2015b).

²⁰³ The state company “Quipus” has started to assemble laptops, tablets, and smart phones in Bolivia. The company focuses of public buyers and has in the past handed out computers to school children financed by the government. Commercial sales are still small due to comparably high prices (Filomeno 2017). UMSA scholar Dr. Saúl Cabrera underlined that for the national electrification program alone, Bolivia needs 150,000 photovoltaic panels and 450,000 small batteries until 2025, while Peru is targeting a program with an even higher coverage (interview, 19.5.2016).

La Palca were until 2016 assembled based on components imported mostly from China, as Bolivia does not yet produce active cell materials, such as cathodes which are important base materials (Sterz 2015b). A pilot plant for such lithium-ion cathodes was long foreseen at La Palca. This plant was first planned in 2012 as a Joint Venture with the Korean Consortium KORES-POSCO²⁰⁴ with an initial investment of 1.5 million USD. However, the project had been paralyzed for various years because of disagreements within the Bolivian administration and quarrels with the Koreans over patents (Montenegro Bravo and Montenegro Pinto 2014, 91–92).²⁰⁵ On November 13, 2015 a new contract was signed with the French company Green Tech to build the plant in 455 days for 3.76 million USD (GNRE 2016a). GNRE manager Echazú estimates that Bolivia will produce batteries with active cell materials in this new plant in the next three to four years (interview, 17.5.2016).²⁰⁶ The plant and production at La Palca has also been met with criticism, since it currently focuses on assembly rather than genuine production (e. g. interviews with analysts C. Arze, 26.10.2015, J. Villalobos, 7.12.2015; J. C. Zuleta, 2.12.2016 and anonymous interview, 27.11.2015). A project timeline is included in Appendix II.

²⁰⁴ The South Korean KORES-POSCO group includes the state company Korea Resources Cooperation (KORES), which is also a main investor in the COMIBOL copper mine Corocoro and the Pohang Iron and Steel Company (POSCO). The group also invests in different Argentinean lithium projects, including the Salar de Cauchari and the Salar del Hombre Muerto (see Anlauf 2014, 21–22).

²⁰⁵ The delay was caused by legal problems, bureaucracy, and demands of the foreign investor for far reaching intellectual property rights. First, a shared risk contract (*contrato de riesgo compartido*) was signed between KORES-POSCO, GNRE and COMIBOL, as well as the MMyM in July 2012. However, in March 2013, the Ministry of Planning of Development concluded that it legally had to be a convention (*convenio*) because the pilot products are not destined for sale. Therefore, a new document had to be drafted and approved (El Potosí 2013; GNRE 2014). Lithium market analyst and project critic Zuleta (2013b) believes that the real disagreement is rooted in the Korean company demanding a second mutually signed agreement guaranteeing them exclusive intellectual property rights and rights to patents.

²⁰⁶ The UMSA researcher Saúl Cabrera (interview, 19.5.2016) believes that it will take another 10 years to produce batteries truly “made in Bolivia”. With this, he refers to the challenge of producing all major battery components in the country, referring also to the battery carcass and other parts.

5.4 The Lithium Production Region

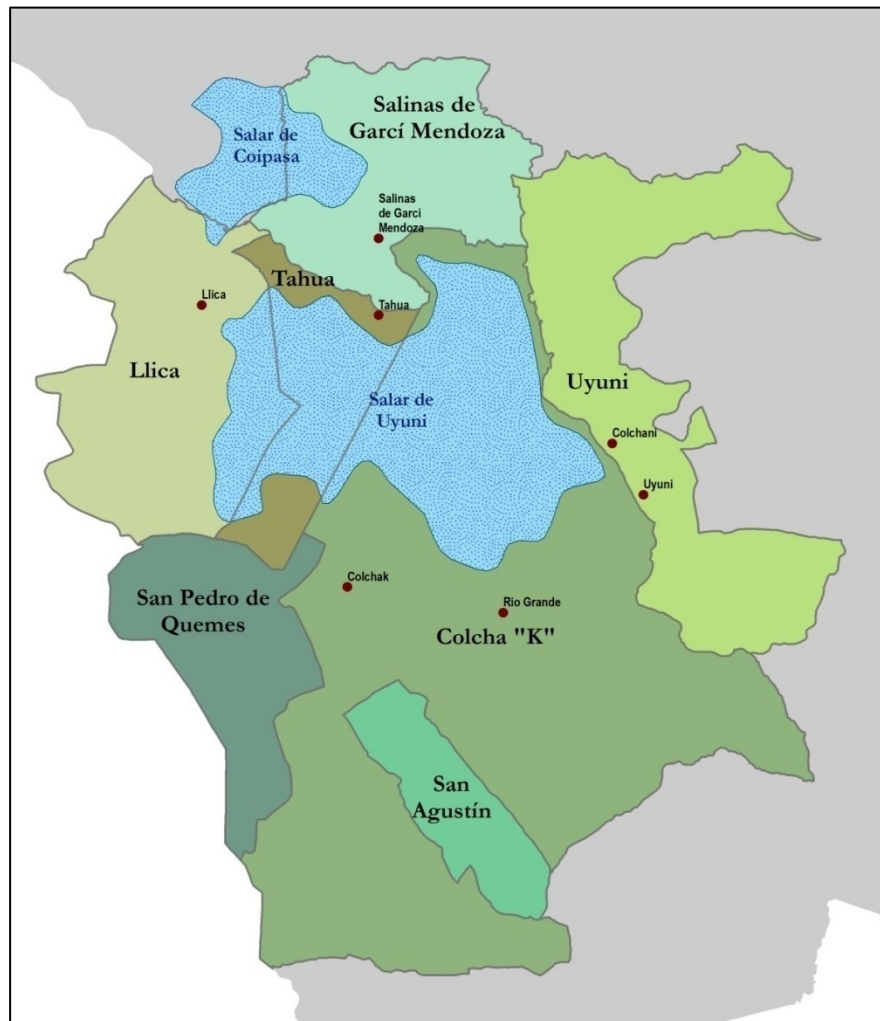


Figure 11: Municipalities around the Salar de Uyuni

The Salar de Uyuni is directly bordered by five municipalities: Colcha “K”, Uyuni, Llica, Tahua, and Salinas de Garcí Mendoza, which belong to four different provinces and the two departments Potosí and Oruro (Figure 11).²⁰⁷ The lithium project itself (including the industrial pools and the plants) is carried out on the salt flat, while the administrative infrastructures are on the salar border,

²⁰⁷ Only the municipality of Garcí Mendoza is in the department of Oruro, all others are in the department of Potosí, as well as more than 98 percent of the Salar de Uyuni itself (but the borders are not clearly defined) (Olivera Andrade 2014, 71). Colcha “K” is a municipality in the province Nor Lípez (administrative center Colcha “K”), the municipalities of Llica and Tahua are part of the Daniel Campos province (administrative center Llica) and the municipality of Uyuni belongs to the province of Antonio Quijarro (administrative center and largest city in the region Uyuni). Garcí Mendoza is a municipality in the province of Ladislao Cabrera (administrative center Salinas de Garcí Mendoza) and is located in between the Salar de Uyuni and the Salar de Coipasa. None of the directly bordering municipalities belongs to the province of Sur Lípez, which still claims parts of the Salar de Uyuni.

seven kilometers from the village of Rio Grande in the municipality of Colcha “K”, province of Nor LÍpez (Echazú Alvarado 2015).

The project site is called Llipi because of the proximity of the mountain Llipi Llipi to the first envisioned production location (where the cornerstone for the pilot plant was placed). The mountain is a holy place for the indigenous communities of the area (Gysler 2011, 118; Olivera Andrade 2014, 202). Later, for technical reasons, the project was moved but the name was kept the same (interview with R. Martínez, 12.11.2015).

5.4.1 Socio-Economic Indicators and Poverty Prevalence

The salar region is one of the poorest and most sparsely populated in Bolivia. According to census data of the Bolivian National Statistical Institute INE for 2012, the area has about 60,000 inhabitants (Table 6).²⁰⁸ The population in the region is growing fast; between 1992 and 2012 it grew by 38 percent (ibid.). Nonetheless, the population density is, with only 1.3 inhabitants per km², considerably below the national average of 9.49 inhabitants (Poveda Ávila 2014, 127). At the same time, the inhabitants are particularly young. In 2005, 41.4 percent of the population in Colcha “K” was younger than 15 years (Taucer and Anze 2013, chap. 4, 86).

Municipality (Province, Department)	Total Inhabitants		
	1992	2001	2012
Colcha “K” (Nor LÍpez, Potosí)	7,733	9,645	12,997
Uyuni (Antonio Quijarro, Potosí)	19,639	18,705	29,672
Llica (Daniel Campos, Potosí)	3,133	2,901	4,150
Tahua (Daniel Campos, Potosí)	1,497	2,166	1,700
Salinas de Garcí Mendoza (Ladislao Cabrera, Oruro)	5,761	8,723	12,160
Total	37,763	42,144	60,679

Table 6: Population Development in the Salar Region (1992–2012)

The population growth in the regional capital Uyuni, in the central villages, and the mining areas, is the result of local migration, as well as an influx of professionals from other regions of Bolivia and

²⁰⁸ Population data was taken from the webpages of the National Statistical Institute (INE 2014, 2016a, 2016b) on the censuses of 1992, 2001, and 2012 (accessible as subpages of the main webpage). Own compilation. The date of INE publications is indicated as given on the webpages (probably date of the last review).

abroad. This internal and regional migration supports a depopulation and decay of surrounding rural communities (Calla Ortega 2014, 53–54).

Poverty in the area is more endemic than in other parts of the country. According to the INE, Potosí is the poorest department of Bolivia and the rural salar provinces are amongst the poorest in the department. Poverty rates are especially high in Llica, Tahua, and Salinas de Garcí Mendoza. There, the basic needs of 66 percent to 82 percent of the population remain unfulfilled (Table 7).

Location	Poor Population as % of Total'
Bolivia	44.9 %
Department of Potosí	59.7 %
Department of Oruro	47 %
Salar Municipalities (Province, Department)	
Colcha “K” (Nor Lípez, Potosí)	57.1 %
Uyuni (Antonio Quijarro, Potosí)	50.3 %
Llica (Daniel Campos, Potosí)	66 %
Tahua (Daniel Campos, Potosí)	69 %
Salinas de Garcí Mendoza (Ladislao Cabrera, Oruro)	81.7 %

Table 7: Poverty Prevalence in the Salar Region (2012)²⁰⁹

Indicators on the availability of water, electricity, and sanitary installations show improvements in the last decade (INE 2014). One reason for these advances can be seen in the installation of large mining projects which depend on functioning electricity and water infrastructures. At the same time, the growing population, socialized in urban centers, and an increasing number of international tourists have intensified demands for social service provision. Nonetheless, development indicators for 2012 were still mostly below the national average in the salar provinces (*ibid.*) (Table 8).

²⁰⁹ Data is based on the 2012 census and was taken from the central webpage of National Statistical Institute for Potosí and Oruro (INE 2017), own compilation. Poor is defined as population with unfulfilled basic needs, which is the only poverty data available at provincial level. This definition and the time frame (2012) explain the difference to poverty data cited in Table 4. For 2014, World Bank statistics indicate a national poverty level (population living below the national poverty line) of 39.3 percent (World Bank 2016).

Location	Insufficient Water and Sanitation Services	Insufficient Energy Supplies	Insufficient Educational Services	Insufficient Health Services
Bolivia	43.6 %	27.3 %	42.9 %	25.3 %
Department of Potosí	60.9 %	49.3 %	57.6 %	31.1 %
Department of Oruro	52.4 %	29.5 %	36.1 %	27.8 %
Salar Municipalities (Province, Department)				
Colcha “K” (Nor Lípez, Potosí)	74.1 %	52 %	47.9 %	25.4 %
Uyuni (Antonio Quijarro, Potosí)	77.7 %	26.3 %	37.9 %	29.8 %
Llica (Daniel Campos, Potosí)	82.8 %	71.9 %	26.7 %	26.7 %
Tahua (Daniel Campos, Potosí)	94.5 %	54.8 %	31.1 %	31.9 %
Salinas de Garcí Mendoza (Ladislao Cabrera, Oruro)	91.4 %	67 %	47.6 %	36.8 %

Table 8: Percentage of Population with Insufficient Access to Basic Services (2012)

Local economic strategies are shaped by the inhospitable climate at an altitude of more than 3,000 meters. Most locals employ a combination of subsistence agriculture, herding of camelids, salt exploitation, mining, tourism services, and migration²¹⁰ (Ströbele-Gregor 2012, 60). In Llica, for example, 64 percent of the population engages in farming or herding as main economic activity, while in the Colcha “K” province, where the San Cristóbal mine is located, 25 percent of the inhabitants work in mining and 33 percent are mainly farmers or herders (INE 2014). In the last years, agricultural income has become more important, as quinoa has developed into a considerable source of revenues (Poveda Ávila 2014, 131). The Andean corn is planted by 80 percent of farmers in the region besides potatoes, beans, corn, wheat, and barley (Ströbele-Gregor 2012, 60). Yet, recently the international quinoa price has dropped dramatically, as cheaper (non-organic) quinoa production in Peru puts pressure on Bolivian farmers (Página Siete 2015a). Moreover, climate change hits the Bolivian highland region particularly hard and the either very dry or very wet seasons affect agricultural production in general.

The booming tourism industry has become a second major source of local employment. With its unique ecosystem and spectacular landscape, the Salar de Uyuni attracts national and international

²¹⁰ Many farmers only come to their villages for planting, harvesting, special holidays, and for the census (as this brings money for their communities and because a certain local presence is often necessary to keep land rights under local costumes). For most of the year, however, they live in Uyuni or elsewhere (e. g. other Bolivian cities or neighboring Chile or Argentina) (Poveda Ávila 2014, 131; Taucer and Anze 2013, chap. 4, 86).

tourists. While in 2011, 90,000 tourists visited the salt lake (Lérida Aguirre and Muruchi Poma 2013), the number has risen to 280,000 in 2015 (Uyuni Web 2016). Other sources of income include the large mining projects, particularly the San Cristóbal open pit mine in the southern part of the salar, which came to full production in the mid-2000. Also, smuggling of vehicles, market goods, and drugs to Chile and Argentina has increased and provides an important part of local income (Calla Ortega 2014, 53–54). The salar region has undergone important changes in the last two decades; the region is marked by a strong integration into globalized economic structures. In this respect, Calla Ortega (*ibid.*, 55–56) summarizes:

*“no matter its size, the industrialization project of COMIBOL and GNRE in Llipi will in any case and nonetheless have significant cultural, social and economic impacts on the southern Altiplano in Bolivia, already when only considering its added effects on the influences of economic globalization and the dynamics of international markets on this region.”*²¹¹

Already at the time of writing, these dynamics of change were affecting the communities I visited – but to very different degrees. Uyuni, for example, profits to a large extent from tourism income. Tourist infrastructures are centralized in the regional capital and controlled by large hotel and travel chains, while communities outside of traditional tourism routes are excluded from most benefits (Gysler 2011). At the same time, migration dynamics focused on Uyuni and a growing number of international tourists supported constantly rising prices, making Uyuni one of the most expensive Bolivian cities (interviews with F. Mamani, 19.4.2016; and G. Roelants, 20.5.2016). Also, the municipality of Colcha “K” is financially more privileged than the surrounding areas, as it receives, as sole producing municipality, considerable rents from the San Cristóbal mine. In 2014, San Cristóbal produced minerals worth 812 million USD and Colcha “K” profited from 6.5 million USD in rents the same year (Pimentel Castillo 2016), which was about 35 percent of the overall municipality budget (Sandi Bernal 2014, 45). When I visited the capital of the municipality, I perceived it as much more advanced in infrastructure compared to the other villages in the area. Colcha “K” has a new hospital, a recently renovated church, a modern school building, paved roads, a gigantic municipality building in construction, and generally well-staffed and equipped public services. This perspective was also reflected in my interviews. Raúl Martínez from GNRE community services (interview, 12.11.2015) reports on the municipality:

²¹¹ Original quote: (...) *sin que importe su escala, el proyecto industrial de Llipi de la COMIBOL y la GNRE impactará en cualquier caso y de todos modos significativamente cultural, social y económicamente la región del altiplano sur boliviano, ya con sólo sumar su cuota parte a los inlujos de la globalización económica y la dinámica de los mercados internacionales sobre esa región.*” (italic highlighting above as in the original quote).

“Colcha “K”, when they started to receive money from San Cristóbal, it resulted that they had so much money, and they still have **a lot of** money. In Colcha “K” they have modern laboratories in the schools. I have not seen laboratories in other individual schools, not even in the cities, which have this kind of quality.”²¹²

The former head of the GNRE Scientific Board Guillermo Roelants (interview, 20.5.2016) adds:

“Per inhabitant, per capita, Colcha “K” is the richest Bolivian municipality. They do not know what to do with their money, their money is reverted and every year they receive more. They have a budget of 15 million dollars and they only get to use five or six million dollars. Because they do not have the administrative capacity to do more projects, it [the rest of the budget] is reverted to the state, since they do not use their money.”²¹³

Until 2016, the GNRE project has not had significant visible impacts on most of the region, since industrial production had not commenced. Though, how the project could potentially affect the region is observable in the small community of Rio Grande.²¹⁴ Due to the proximity of Rio Grande to the pilot plants and administrative facilities, the community has benefitted from service provision for the GNRE camp and other companies. Moreover, in Rio Grande there were two lorry companies. GNRE and its sub-contractors rent up to 120 trucks each day (many from Rio Grande) to transport materials, which has become an important economic pillar for the community (interview with R. Martinez, head of GNRE community relations, 12.11.2015). I observed the changes in Rio Grande, which I visited as a tourist in 2007 and again for the present thesis in 2016. While Rio Grande was an impoverished, isolated community ten years ago, new buildings went up everywhere by 2016. Mobile phone services and electricity are now widely available, the school was renovated, there is a health center, and buses connect the village to Uyuni a couple of times a week. While concrete infrastructural improvements are visible all over rural communities in Bolivia, a development which Farthing and Kohl (2014) consider one of the most important successes of this government, the changes in Rio Grande need to be at least partly seen in relation to the engagement of GNRE and the use of local services.

²¹² Original quote: “Colcha “K”, cuando ha empezado a recibir regalías de San Cristóbal, resulta que tenían tanto dinero, y tienen todavía **mucho** dinero (...) En Colcha “K” han puesto laboratorios modernos en las escuelas, no he visto laboratorios en otros colegios particulares, inclusive de ciudades, que tenga esta calidad.” Words emphasized by the speaker are in bold.

²¹³ Original quote: “Colcha “K” es por habitante, por cabeza, la alcaldía más rica de Bolivia. No saben qué hacer con su dinero, su dinero se revierte, cada año les dan. Tienen un presupuesto de 15 millones de dólares y sólo logran utilizar 5 o 6 millones de dólares, porque no tienen ni la capacidad administrativa de hacer más proyectos, se revierte al Estado porque no usan su dinero.”

²¹⁴ Rio Grande only re-populated in the early 1990s, when the community formed a society to exploit boron and ulexite (hence the transport cooperatives). After the disintegration of COMIBOL, Rio Grande had basically been a ghost-village for a large part of the 1980s (Gysler 2011, 75).

In other communities in the area, particularly outside of urban centers, poverty is still widely notable. Quinoa failure impacts the northern and northwestern parts of the salar, which also do not profit from the tourism routes. Infrastructures in Llica, the capital of the Daniel Campos province, were less comprehensive and modern than in Colcha “K”, roads were unpaved and administration buildings unrenovated. Particularly difficult was the situation in Colchani, which, despite being on the tourist path, has hardly any public infrastructure and was, during the time of visit, disconnected from regional water services for most of the day (interview with J. Yucra, bailiff of Colchani, 28.4.2016).

Considering this diverse socioeconomic panorama, one cannot speak of one local population with a single point of view concerning the lithium program. There are many local populations with diverse expectations, hopes, and fears.

5.4.2 Municipality Organization

Municipalities are the third level of administrative organization in Bolivia below provinces and departments. To understand municipality organization, it is important to know that most municipalities as sections of provinces were only formally founded with the Law of Popular Participation (Law N° 1551, 20.4.1994) and are rather new concepts of territorial organization in Bolivia. Municipalities have competences in health, education, culture, and infrastructure (roads, irrigation, sport) and Law N° 1551 established formal municipal elections and a per-capita budget (20 percent of national tax income) for municipalities for the first time (Faguet 2004). The reform also introduced budgetary oversight by vigilance committees (Comités de Vigilancia). The oversight committees are anchored in grassroot organizations, which should ensure citizen participation in municipality administration (ibid.). Examples of such grassroot organizations include Neighborhood Committees, Civic Committees, or School Boards (Juntas Escolares). Municipality Associations can be formed to pursue common goals between municipalities (Machicado 2012). The salar municipalities are therefore organized in the Mancomunidad Municipal de la Gran Tierra de Los Lípez (Municipality Association of the Great Land of Los Lípez).

Politically, the individual Salar municipalities are organized around a municipal council as the legislative body. The municipality executive is headed by a directly elected mayor (*alcalde*) and municipal secretaries (CPE, Art. 283; Law N° 482 “Law of Autonomous Municipality

Governments”, 9.1.2014). Mining and quinoa cooperatives are key socioeconomic organizations in the Salar communities. In the 2015 municipality elections, the MAS-IPSP was the strongest political force in the region. The party won the most votes in all of the five salar bordering municipalities (Órgano Electoral Plurinacional 2015) (Table 9²¹⁵).

Alongside these political and administrative structures, traditional authorities are important in municipality organization (and beyond), as indigenous people have the right to representation in the municipality council (CPE, Art. 284 II).²¹⁶

Salar Municipalities (Province, Department)	Strongest Party in Municipality Election 2015
Colcha “K” (Nor LÍpez, Potosí)	MAS-IPSP (74 %)
Uyuni (Antonio Quijarro, Potosí)	MAS-IPSP (56 %)
Llica (Daniel Campos, Potosí)	MAS-IPSP (78 %)
Tahua (Daniel Campos, Potosí)	MAS-IPSP (79 %)
Salinas de GarcÍ Mendoza (Ladislao Cabrera, Oruro)	MAS-IPSP (80 %)

Table 9: Strongest Political Party in Municipality Elections in the Salar Region (2010)

At the same time, it is important to note for the following discussion that particularly the provinces of Nor LÍpez and Antonio Quijarro with the regional capital Uyuni profit from a better political representation on the national level²¹⁷, while the northern province of Daniel Campos lacks such a network (interview with A. LÓpez, former President of the Civic Committee of Tahua, 16.11.2015; similar Gysler 2011). The lithium project, for example, was strongly supported by a congressman from Rio Grande, Teodoro Ali, and the former mayor of Uyuni, Froilan Condori, while other

²¹⁵ Data was taken from the official publication of the electoral results by the Plurinational Electoral Organ (Órgano Electoral Plurinacional 2015).

²¹⁶ Aymara authorities include e. g. the *mallku* / *mallcu* (supreme *marka* authority) and the *jilacata* (head of *ayllu* government) which are organized in the Council of Authorities (Choque 2000). In Quechua, the head of an *ayllu* is called *kuraka* / *curaca* (Almeida 2005, 54), a title which is used in Nor LÍpez, while the supreme indigenous authority is the *cacique*. In an autonomous municipality, indigenous peoples participate in municipal election by secret ballot and can elect their representatives to the municipal council using their norms and procedures (CPE, Art. 284 II). While indigenous authorities are present in the northwestern *ayllus*, they are not active to the same extent in the southern part of the salar. In Nor LÍpez, the minor authorities on the local level have disappeared altogether and only three principal authorities (*caciques*) remain in the area (Gysler 2011, 121).

²¹⁷ Gysler (2011, 70–71) links this to the local economic integration to sell quinoa in the 1980s and the realization that a proper political representation of the region was paramount for this endeavor. Consequently, the local FRUTCAS union gained in importance as an organ of political representation. As discussed further on, FRUTCAS is stronger in unionized provinces of Nor LÍpez and Antonio Quijarro than in the northern salar area.

former heads of FRUTCAS have risen in the MAS to high political offices, such as former FRUTCAS President Eloy Calizaya, who was the head of the Potosí Departmental Legislative Assembly from 2015 to 2016.

Some of the municipal capitals I visited are also provincial capitals. The provinces are headed by sub-governors, who report to the directly elected governor of the department. According to Framework Law of Autonomies and Decentralization “Andrés Ibañez” (Law N° 031, 19.07.2010, Art. 108), sub-governors should be publicly elected (but underlying regulations are still not in place everywhere). A sub-governor has his or her seat in the provincial capital and has subordinated *corregidores* (officers) in the individual municipalities.²¹⁸

5.4.3 Land Cleavages and Local Actor Groups

There are long-standing cleavages about land rights between the different municipalities in the Salar territory, which are deeply rooted in the consciousness of local communities. The Salar de Uyuni itself and the adjoining regions were in colonial and early republican times organized as the province of Los Lípez. The salt lake, different interview partners outlined, had been bought by the inhabitants of the Los Lípez province, when they had brought seven (sometimes eight) wheelbarrows of gold and silver to the viceroy Francisco de Toledo in Lima in 1571 (interviews with M. Lérica from Llica, 9.10.2015; S. Llave from Colcha “K”, 27.4.2016; R. Martínez, GNRE, 12.11.2015; compare also Gysler 2011, 65–66). The purchased title, which has been protocolled as a territorial title in 1950, includes the current provinces of Nor and Sur Lípez, Daniel Campos, Enrique Baldivieso, Antonio Quijarro and Nor Chichas (Gysler 2011, 66–67). It is, however, contested which of these provinces rightfully represents this historic claim.

In my interviews, competing maps were referred to underscore the claims of different municipalities and provinces to the Salar de Uyuni. Two valid territorial laws (Law N° 120, 26.12.1949; Law

²¹⁸ In the previous Law of Administrative Decentralization (Law N° 1654, 28.7.1995), these representatives were called sub-prefects (and were appointed by the departmental prefects, who are appointed by the president). While this was changed to sub-governors with the Framework Law of Autonomies and Decentralization, many representatives I interviewed still referred to themselves as sub-prefects, also because departmental autonomy statutes are absent. These statutes would also define the regulations for the elections of sub-governors, as proposed by the Framework Law. Autonomy Statutes in the highlands, however, failed to gain public approval in referenda in September 2015, which means that the intricacies of competence sharing on the regional and local level in said departments are not fully specified.

N° 129, 13.12.1961) define the Salar de Uyuni as part of the province Daniel Campos²¹⁹ (Similarly, Echazú Alvarado 2015, 306). A historic map of the Geographic Military Institute (Instituto Geográfico Militar – IGM), which as the national cartographic institute is responsible for border delineation, similarly defines the salar as part of said province (Gysler 2011, 109). Yet, the Commission on Territorial Organization has issued a map that places large parts of the Salar de Uyuni in the province of Nor Lípez (ibid.). Similarly, the National Statistical Institute INE (2016b) included important areas of the salar in their maps of the Colcha “K” municipality for the 2001 census, which sustains the claim of Nor Lípez to the territory. The latter documentation was also used to support the successful application of communities from Nor Lípez to claim parts of the Salar de Uyuni as indigenous territory (see below), which was widely criticized in the province of Daniel Campos as based on erroneous assumptions over municipality borders (Gysler 2011, 108 et seqq.).

In result, the local discourse on territorial rights is emotional and contradictory. Milton Belén, legal advisor of the Municipality Council of Colcha “K” (interview, 27.4.2016) stated,

“thus, the Salar de Uyuni is in the jurisdiction of the municipality of Colcha “K”. You can make the effort the revise this map, and you will see that it is this way completely. Well, there are these voices of demand, let’s see, from Uyuni, Tomave also says, a part of the salar belongs to us, also those from Llica, also from Tahua. But if we go to the jurisdiction and look at the political-administrative map, well it is in our jurisdiction. There is no way to make a mistake here.”²²⁰

On the contrary, most of my interview partners in Llica believe that legally the Salar de Uyuni is on their territory, based on the already mentioned territorial laws. The municipality journal of Llica similarly underlines that the province includes the majority of the immense Salar de Thunupa (Gobierno Autonomo Municipal de Llica 2014, 5).

In my interviews, additional claims were made that the salar, at least partly, belongs to the provinces of Antonio Quijarro or Sud Lípez and about half of the interview partners actively denied claims

²¹⁹ The mentioned laws create the province Daniel Campos and its first and second municipality Llica and Tauca. They define the bordering provinces geographically in a way that Daniel Campos includes the salar territory.

²²⁰ Original quote: “Entonces dentro de la jurisdicción del municipio de Colcha “K” es que se encuentra el Salar de Uyuni. Vos tal vez podrías darte la molestia de revisar ese mapa, entonces vas a advertir de llano, de completo que es así. Ahora sí hay esas voces de reclamo que también, a ver, los municipios de que, de Uyuni (...) Tomave también dice, una parte a nosotros también pertenece, al salar, los de Llica, los de Tahua, también. Pero vamos a la jurisdicción y vemos el mapa político-administrativo, está en nuestra jurisdicción pues. No hay dónde equivocarse.”

of other provinces.²²¹ The regional estrangements and territorial struggles also connect to the already described conflicts during the first lithium exploitation attempt of the late 1980s and early 1990s. Back then, particularly the northern salar municipalities supported the signing of the contract for private lithium exploitation with the multinational company LITHCO, while COMCIPO was divided on the issue and most of FRUTCAS leadership (yet surely not all FRUTCAS members) opposed an international participation (compare Chapter 5.2).

5.4.4 Indigenous Peoples and Territories

The struggles over territorial borders are further enhanced as the regional divide and the opposing territorial claims correspond to important cultural differences in the salar region. There is a significant indigenous presence of Aymara and Quechua peoples.²²² While in the north of the salar, Aymara cultures prevail (particularly in Salinas de Garcí Mendoza, Llica, and Tahua), the inhabitants of the southern and eastern parts (particularly in Nor Lípez, Antonio Quijarro) mostly identify as Quechua, while there are linguistic pockets in the northeast and northwest where both languages are spoken (Calla Ortega 2014, 43). According to the 2012 census, 44 percent of the inhabitants of Colcha “K” spoke Quechua, 52 percent Spanish and only 2 percent Aymara as first language (INE 2014). In Llica, in comparison, 75 percent spoke Spanish, 18 percent Aymara and 4 percent Quechua, while in Salinas de Garcí Mendoza, the first language of 38 percent of the inhabitants was Aymara, of 55 percent Spanish, and only 4 percent spoke Quechua as primary tongue (ibid.). As Calla Ortega (2014, 46) points out:

“not *Aymara* nor *Quechua*; the current rural indigenous population of the southwest of Potosí and the surroundings of the Salar de Uyuni is the product of a combination of influences and linguistic, cultural and organizational dynamics connected i) to the pre-Hispanic realities of the Aymara-speaking ‘kingdoms’, of the Inca empire and the particularities of their local settlements and ii) the influences of the Spanish colony as well as the more modern history of the Bolivian republic.”²²³

²²¹ The Civic Committee of Potosí supports the claim of Llica (interview with J. Llally, 14.5.2016). Also, opinions were voiced that both provinces share the salar and, as *curaca* Crecensio Ali from Colcha “K” underlined, the project should also benefit Daniel Campos, but just not as much as Nor Lípez (interview, 28.4.2016).

²²² It is important to understand that “Quechua” and “Aymara” are historically names for languages (Calla Ortega 2014, 41). While Aymara existed before the Inca invasion, Quechua was the language of the Incas who brought it to the Bolivian Altiplano. Within areas with linguistic presence of Quechua and / or Aymara, indigenous identities are not homogeneous and important cultural differences exist between individual communities, *ayllus*, and their *markas* (ibid.). Thus, it is precise to talk about Aymara and Quechua cultures in plural.

²²³ Original quote: “*La población indígena rural actual del Sudoeste de Potosí y del entorno del Salar de Uyuni es producto de una combinatoria de influencias y dinámicas lingüísticas, culturales y organizacionales vinculadas i) a las realidades prehispanicas de los señoríos aymará-hablantes, del Inkario y de las propias y específicas particularidades de sus poblamientos locales, y ii) a los influjos de la*

Indigenous communities in the northern salar, predominately Aymara, are still frequently organized in *ayllus*, rural kin groups with communal land rights and joint forms of land use.²²⁴ In the southern and eastern salar, particularly in the province of Nor LÍpez, the *ayllu* structure mostly disintegrated after 1952, when the political administrative organization prevailed over indigenous land organization and the peasant union movement emerged (Calla Ortega 2014, 45 et seqq.; Gysler 2011). Calla Ortega (ibid.) outlines the importance of rural syndicalism in reshaping land consciousness and land rights in the area. Since the 1990s, particularly in the FRUTCAS union obtained a growing weight in regional and national politics (which also links to the opening of a political space on the municipality level with the Law of Popular Participation). This resulted in “a partial modification of the configuration and characters of the rural ethno-cultural settlements in southwestern Potosí and in the surroundings of the great salar” (ibid., 46).²²⁵ Peasant unions increasingly acted as initiators of collective land claims, not primarily for an indigenous people but for peasant communities with indigenous roots. Since the mid-1990s, the northern salar also saw a reconstitution of *ayllus* that sought to re-claim traditional lands.²²⁶

Colonia española y de la historia más moderna de la Bolivia republicana.” Kingdom is not a literal translation for the term “*señorío*”, as it is difficult to characterize (in Western terms) forms of Aymara governments after the fall of the Tiahuanaco empire (Mesa, Gisbert, and de Mesa 2003, 31).

²²⁴ Since pre-Incan times, the *ayllus* were forms of socio-territorial organization in the Andean territory which persisted through Inca occupation and colonial times into the Bolivian Republic (Poveda Ávila 2014, et seqq.). *Ayllus* need to be understood as forms of joint property ownership of a kin group (real or imagined) with a common deity (Mesa, Gisbert, and de Mesa 2003, 65–66). *Ayllus* work their land reciprocally (so called *ayni*) and trade amongst each other, also over large distances. Within the *ayllu*, individual property may exist (Poveda Ávila 2014, et seqq.) During Inca rule, *ayllus* were socio-politically, territorially and economically organized into *markas* which again formed *suynus* (Almeida 2005). The *Collasuyu* (*Qullusuyu*) was the southern part of the Tahuantisuyo, the Inca Empire, which existed between 1460 and approximately 1558, and comprised highland areas of current day Bolivia, Chile and Argentina (Mesa, Gisbert, and de Mesa 2003, 65 et seqq.).

²²⁵ Original quote: “*una modificación parcial de la configuración y el carácter del poblamiento etnocultural rural en el Sudoeste de Potosí y en el entorno del gran salar.*”

²²⁶ *Ayllu* structures in Bolivia were severely weakened during the National Revolution of 1952 and the subsequent land reforms. The MNR government sought to redistribute land from hacienda owners to landless peasants and supported peasant (not indigenous) identities by strengthening peasant unions (Albó 1994). *Ayllus* were considered traditional and thus backward institutions hampering progress; the MNR assimilation agenda re-focused rural identities from the “primitive” *ayllus* towards modern identities as national citizens and peasant workers (Choque 2000, 20–22). To access redistributed land, membership in peasant unions was made mandatory. The peasant union movement supported the fragmentation and decay of *ayllus* and *markas* particularly in areas of an important presence of these unions (e. g. the southern salar) (Calla Ortega 2014, 46). In the 1980s and 1990s, Aymara intellectuals (supported by international NGOs) aimed at the reconstitution and government recognition of the original nations of the *Collasuyu* and their *ayllus*, a process which was formally initiated in 1993 when first communities in the La Paz department re-organized as *ayllu* (Choque 2000). In 1997, with the Confederation of the *Ayllus* and *Markas* del *Qullusuyu* (Confederación de *Ayllus* and *Markas* de *Qullusuyu* – CONAMAQ), a national organization was founded to represent departmental *ayllu* federations (ibid.). As result of Aymara leadership in the reconstitution process, *ayllu* structures in Aymara speaking areas (e. g. the northern salar) are stronger than in other Andean territories.

This process was enabled by Law N° 1715 of 1996 which founded the National Institute of the Agrarian Reform (Instituto de Reforma Agraria – INRA). The INRA law formalized the registration of Original Communal Lands (Tierras Comunitarias de Origin – TCO).²²⁷ The right to collective landownership was further strengthened by the Constitution of 2009. The CPE replaced the TCO with the concept of the Indigenous Original Peoples’ Peasant Territory (Territorio Indígena Originario Campesino – TIOC)²²⁸ (Art. 269 I). All registered TCOs are now (by an extensive administrative process) subsequently transferred to TIOC status (Supreme Decree N° 727, 6.12.2010). The concept of a TIOC does not only focus on the idea of landownership but seeks a collective management of culturally and historically marked territories.²²⁹ The CPE further allows for TIOCs, municipalities, and regions (when inside one department) to transform into a state recognized indigenous autonomy (Autonomía Indígena Originario Campesina – AIOC) (Art. 289 et seqq.).²³⁰ Regulations on the implementation of these new entities are still vague and partly contradictory (Fundación Tierra 2012a; Garcés 2011).

²²⁷ The law thereby specified “social, economic, and cultural rights of indigenous peoples (...) especially those that relate to their communal lands” as established by the 1994 Constitution (Art. 171). Also before the INRA law was promulgated, individual TCOs were recognized based on Supreme Decrees following protests of lowland indigenous groups (Mesa, Gisbert, and de Mesa 2003, 758–759).

²²⁸ The Constitute Project translates this as “rural native indigenous territory (“Constitute Project” 2009). This, however, does not embody the idea of the Spanish compromise of joining “*campesino*” (peasant) demands based on social class with those of the Andean communities, who relate to their “originary” indigenous heritage, and the organizations of lowland indigenous peoples, who were not “syndicalized” and auto-define as “indigenous” (Garcés 2011). The term goes back to the 2004 Unity Pact between indigenous organizations and peasant as well as colonist settlers’ unions, a very particular historical development. For a comprehensive summary, see Garcés (2011). The term “indigenous originary peasant people” used in the CPE, however, refers in a broader sense to groups of people with an ancestry before the Spanish colonization. Thus, I will mostly refer to indigenous peoples and nations when referring to the different claimants for collective land titles.

²²⁹ INRA (Law N° 1715, 18.10.1996) defines TCO as an agrarian property (productive land) (Art. 41 I) and the geographic spaces where an indigenous people has traditionally lived and where it has developed communal forms of social, economic, and cultural organization. These lands are “inalienable, undividable, irreversible, collective, composed of communities or communal associations, unseizable and imprescriptible” (Art. 41 V), guaranteeing indigenous peoples the right to the sustainable use of non-renewable resources on these lands (Art. 3 III). A TIOC, in comparison, is not only a collective land title. The political concept of territory embodies the idea of self-determination and consequently, a TIOC includes more advanced rights to natural resources and consultation. TIOCs are also exempt from agrarian property tax (CPE, Art. 394 III). Moreover, TIOC have the right to apply their own norms, can be administered by their own representatives and can define their development in terms of own cultural criteria and principles of harmonic coexistence with nature (ibid.). In this context, it is necessary to mention that already when INRA was discussed, indigenous groups sought to establish forms of self-government linked to the political concept of territory, but governments prior to the MAS had negated this idea, fearing that this could support a disintegration of the republic (Colque and Chumacero R. 2011).

²³⁰ The Constitution lists four different types of autonomies; departmental, provincial, municipal, and as an AIOC, (CPE, Art. 269 III). Thus, the CPE “offers the possibility that indigenous peoples establish certain territorialized modes of governance that are distinct from the wider templates of department, provincial and municipal administration” (Garcés 2011, 47). There is no formal hierarchy between these autonomies, which means that the territorial organization based on the colonial and republican state structure coexists with indigenous territories (ibid.).

Based on the outlined regulations, communities and *ayllus* in the salar region sought collective titles since the mid-1990. In February of 1999, the regional peasant union of Nor Lipez (affiliated with FRUTCAS) applied for a TCO which included 52 communities (about 10,000 inhabitants), parts of the adjoining province Daniel Campos, and a large section of the Salar de Uyuni (Gysler 2011).²³¹ Authorities from Daniel Campos opposed this in front of INRA (ibid.). The territorial claim had also been refused by previous administrations, because of the dimension and because it was not supported by an indigenous people but by a peasant union (ibid.). The union, in turn, argued that the original Quechua inhabitants had to adopt syndical structures to access food support from the government after a severe drought in 1983 (Gysler 2011, 105). In 2010, under the MAS government, the TIOC “Central Única Provincial de Comunidades Originarias de Nor Lipez” was titled on an area of more than two million hectares (Calla Ortega 2014, 48) and thereby became the largest collective claim titled to this date in Bolivia (Fundación Tierra 2012b). Additionally, different *ayllus* in the area have applied for a total of seven TIOC. By 2014, three titles had been granted, two were in the process of titling, and two were not decided upon (Poveda Ávila 2014, 131–132).²³² The northern salar provinces link the successful titling of union over *ayllu* claims to the better political connectedness of southern salar. Also, the MAS ally FRUTCAS successfully pushed for the claim. In subsequent chapters I will discuss the extent to which these collective land titling processes and the lithium and potassium project are related.

²³¹ The claim was made by the Unique Provincial Central of Peasant Workers of Nor Lipez (Central Única Provincial de Trabajadores Campesinos de Nor Lipez – CUPTCNI), which later changed its judicial personality and title to Unique Provincial Central of Original Communities of Nor Lipez (Central Única Provincial de Comunidades Originarias de Nor Lipez). This name change aimed at underscoring its nature as an association of original communities instead of a peasant union to heighten the chances to obtain TIOC status.

²³² The following TIOC have received this title: in the municipality of Colcha “K”, the above mentioned TIOC “Central Única Provincial de Comunidades Originarias de Nor Lipez” (2,000,292 ha); in the municipality of Uyuni the TIOC “Ayllu Aransaya y Urinsaya del Canton Tolapampa” (492,192 ha); and in Salinas de Garcí Mendoza, the TIOC “Marka Salinas de Garcí Mendoza y sus Ayllus” (242,030 ha). Two *ayllus* in Llica have claims in process and not yet considered are two claims, one in Uyuni and one in Taha. This latter claim does not stand much chance, as the two *ayllus* Aransaya and Maransaya demand nearly the complete Salar de Uyuni as a TIOC. The second largest TIOC in the region was titled in the province of Sur Lipez (1.55 million ha), which does not directly border the Salar de Uyuni (Fundación Tierra 2012b).

6 Case Study Part I: Lithium Governance in Bolivia

6.1 A Flagship-Project of Public Ownership

The following case study chapter will give an overview of different dimensions of governance of the lithium project. Two aspects need to be considered. First, the ownership structure of the project and second, the visions connected to the lithium initiative and how different stakeholders frame it. As has been discussed in Chapter 4, the MAS government seeks to reform the Bolivian mining sector from private management of individual mining projects to a sovereign public industrialization strategy. While an analysis of the mining panorama has shown that this vision could not be fully implemented, as cooperative private mining actors have come to dominate the sector, the lithium project has been developed fully in this logic of public sovereign ownership of strategic resource projects. Different particularities of lithium project have been discussed in comparison to the mining sector in general which destine it as a flagship project of the MAS strategy in mining. First, lithium industrialization is not interesting for cooperative miners due to its complexities. Second, the project targets aspects of value-adding that go beyond the traditional focus on raw materials. Third, lithium, in comparison to other minerals, has not seen important price declines and could potentially substitute for some of the income losses in other sectors and serve as an important counterweight in the volatile commodity market. Fourth, the lithium project could be developed fully within the sovereign logic, as the MAS government is not bound to previous contractual arrangements for the mineral, which is the case in other mining projects.

The following chapter will discuss how far this understanding of the government flagship project of public management in mining impacts on governance instruments employed. In the logic of public ownership, it can be expected that the project targets a large public participation in mining revenues. Also, it has been put to discussion in the theory chapter that public resource projects are more likely to be concerned with long-term developments rather than the rapid profits orientation often found in private resource management (compare Chapter 2.4.2). Linking back to the philosophy of *vivir bien*, the strategic lithium project can also be expected to consider the environmental dimensions of lithium industrialization, seeking adequate mitigation instruments, while surpassing the often-limited engagement of transnational companies in this field.

At the same time, research identified important shortcomings of a public management of resource exploitation, which has been criticized for being prone to inefficiencies, bureaucratic structures, and large overhead costs. Bureaucrats tend to place too much trust in technological solutions and to simplify extremely complex projects, underestimating potential risks. Moreover, public resource projects, it was often argued, are more likely to be affected by corruption and intransparencies and are less likely to involve other stakeholders in control functions. Particularly governments in developing countries are considered to lack the knowledge and equipment to manage resource projects without the help of experienced private companies with capital (compare Chapter 2.4).

Chapter 4 discussed how Bolivia has seen fluctuations between the two extremes of resource management, nationalization, and complete openness to foreign investments. In the 1980s, the IMF and World Bank in the Washington Consensus implemented one of the most inviting regulations for private companies to exploit and export raw materials in Bolivia. The resulting dramatic social effects discredited this strategy in the country giving way to a left-leaning government with a nationalizing vision. At the same time, the question which approach is more promising continues to be emotionally debated in Bolivia. When the first private lithium exploitation failed in the early 1990s, many actors evaluated this as a lost chance and the result of a failed nationalistic approach (see Chapter 5.2). Equally, in ongoing discussions on lithium industrialization, the necessity of private sector support is widely debated. Consequently, another interesting aspect of project governance is how the government reacts to points of criticism, how it seeks to develop the technical competences, organizes the project internally, handles bureaucracy, and which importance it awards to transparency and social control.

This thesis' perspective on governance in the lithium project is guided by my interest in local grievances and dimensions of governance that impact on local meaning-making about the project. These dimensions have been theoretically defined as the information and integration of local actors, the management of revenues and other benefits, and the governance of externalities with a specific focus on potential environmental impacts. These dimensions are further impacted by a fourth central component of governance, namely the question of the ownership of a resource project. At the same time, other contextual factors influence local meanings and grievances, particularly the framing of the initiative by different stakeholders. The following analysis will first engage with different national visions of lithium governance and an evaluation of the results of the project until 2016. This analysis will also take up discussions on ownership in the Bolivian lithium program and

the governmental interactions with critics of the initiative. Subsequently, I will analyze different governance dimensions in relation to the theoretical model and how they are implemented in the GNRE program. This will then open the discussion on local meanings and grievances in the following Chapter 7.

6.2 Lithium Vision and National Perspectives on the Project

While the focus of this research is on the different governance dimensions of lithium industrialization and the local perspectives of them, I will first engage with different general visions on lithium governance at the national level. These national perspectives, widely reflected in newspaper articles, in pamphlets and TV coverage have important impacts on local perspectives of lithium industrialization; they have become relevant for local meaning-making as part of the framing of the project. The framing, how an initiative is presented by those implementing it and by those rejecting it, can provide an important context for the formation of social movements. In the Bolivian Water Wars, framing the privatization of water as a part of the widely rejected neoliberal reform agenda gave important momentum for the emerging movement (Simmons 2016b). Linking frames to local meanings can help us understand why certain framings of an initiative by movements or the government resonate in certain moments and contexts but not in others (Simmons 2014, 519).

The government, civil society, and critical mining analysts present the lithium initiative and its goals very differently. The government and the GNRE relate to the project within their greater vision of sovereign national development, of industrialization of national resources in the country and as a large step forward for the separation from the dominance of private market actors in the country's mining sector (GNRE 2012, 2013, 2014, 2015, 2016; interviews with GNRE and COMIBOL). Critical mining analysts²³³ have, however, frequently challenged the government implementation of the project. Particularly actors from the private mining sector (different anonymous interviews in 2015) criticize the public management of the initiative, thereby relating to classical shortcomings

²³³ This includes interviews with analysts J. C. Zuleta (2.12.2015), S. Escalera (25.3.2016), J. Claros (18.11.2015), M. Lérica (9.10.2015) and an anonymous mining analyst (27.11.2015). These analysts have repeatedly published critical articles on the project. Further critical assessments include interviews with mining expert G. Cortéz, 4.5.2016, geologist O. Ballivián, 15.12.2015; policy analysts C. Arze, 26.10.2015; P. Villegas, 23.3.2016; and J. Campanini, 28.3.2016; with university scholars R. Caravajal, 4.5.2016; and C. Sandy, 9.11.2015; while further interviews included critical reflection on individual aspects of the project. References to critical analysts and interviews relate mostly to these sources, if not specified differently.

ascribed to public resource management; namely ineffectiveness, lacking technical knowledge, and opacity (see Chapter 2.4.2). Critical civil society organizations and analysts have linked the initiative to political continuities with a focus on raw material export in mining, framing it as neo-extractivist (interviews with analysts O. Choque, 23.9.2015; C. Sandy, 9.11.2015; P. Villegas, 23.3.2016; J. Campanini, 28.3.2016; and R. Jordan, 7.4.2016). A discussion of these different viewpoints can outline visions of governance and existing cleavages in the project, all of which potentially impact local interpretations and emerging grievances.

6.2.1 Delays, Infrastructural Conditions, and Human Resources

Most of my interview partners confirmed that the lithium project is running behind its initial schedule. Government sources explain this with the bureaucratic institutional structures. As former head of COMIBOL and mining analyst, Héctor Córdova, accentuates (interview, 21.10.2015): “I believe that the whole project has had delays, it has advanced very slowly, more because of management than because of other types of factors. The technical issues were surpassed through investigation.”²³⁴ Other factors were the already outlined climatic challenges and the chemical composition of the brine (compare Chapter 5.1). Critical analysts underline that management mistakes have slowed the project. A relevant factor was the lack of appropriate infrastructure in the remote area, of technology, and qualified personnel (Espinoza Morales 2012b; Guzmán Salinas 2014b; Olivera Andrade 2014; Ströbele-Gregor 2015).²³⁵ Also, while Bolivia has experiences in traditional mining, lithium and potassium have never been exploited in the country. There are two possible framings of these challenges which I will outline in the following paragraphs: one, that the outlined shortcomings endanger the project’s execution as such, and, two, that the government has risen to the multiple obstacles and has the courage to “jump in the deep end” to enhance Bolivian sovereignty in the management of its own resources (interview with J. Carballo, head of GNRE Battery Directorate, 4.12.2015).²³⁶

²³⁴ Original quote: “*A ver, yo creo que todo el proyecto ha tenido demoras, ha ido muy lentamente, más por factores de gestión que por otro tipo de factores. Los factores técnicos fueran superados en la investigación.*”

²³⁵ This was also a frequent topic of a great majority of interviews from the government side e. g. with F. Mamani, former President of FRUTCAS, 19.04.2015; J. C. Montenegro, UMSA scholar, 5.11.2015; J. Carballo, head of GNRE Battery Directorate, 4.12.2015; H. Córdova, former President of COMIBOL, 21.10.2015; M. Castro, head of Llipi camp, 12.11.2015 as well as interviews with representatives of the German lithium and potassium companies K-UTECH, 22.9.2015; and ERCOSPLAN, 2.3.2016.

²³⁶ Original quote: “*Entonces, puede imaginarse, falta de gente, de conocimiento y nos tiramos a la piscina.*” Underlined is the translated part of the quote (not literal).

The head of the Llipi pilot plants, Marcelo Castro (interview, 12.11.2015), who has been part of the project from the start, relates to the latter interpretation of government dedication. The initiative faced difficult conditions but could overcome them because of the personal determination of President Morales:

“What happens is that one only recently understands how a country is underdeveloped, backwards, and dependent. How does one realize this? For a start, because of a lack of services; there was no electric light, no water, no mobile phone [signal] here, no internet, the roads were not good. When I say here, I mean in the entire region. Thus, developing industries in these conditions, and worse, in the magnitude in which we are developing, this is totally complicated, difficult. Many times, if you do not have the political support, the economic support, this vision of development, of the industrialization of the natural resources, that a president like President Evo Morales has, thus, there is no future for these projects which will be initiated. You begin to realize one thing; it is easier to place an industry in Europe than to put down one brick in this region.”²³⁷

Because of the delays the GNRE adapted its initial timeframe for the project to 2019/2020. However, as has been pointed out in the previous section, the goal to produce 40 tons of lithium carbonate per month in the first project phase has not yet been met. A policy officer from the legislative branch²³⁸ commented on these delays in an interview (anonymous, 13.4.2016):

“In any case, the will to advance is undeniable. This is a personal opinion but I have felt that it is preferred to advance slowly, instead of having to give in on technological sovereignty, instead of giving in to the temptation to get the complete technology package so that it resolves the problem from the outside.”²³⁹

In general, I have witnessed a widespread belief and personal dedication to the project among government staff and a will to bring the initiative forward. The project is framed as “a historic challenge” (interview with G. Roelants, 20.5.2016) and the “industrial light” (interview with M. Castro, 12.11.2015). This relates to a strong vision of lithium as the center piece of a new political angle in the management of natural resources that will support long-term development in Bolivia. As the head of the lithium plants in Llipi underscores:

²³⁷ Original quote: “*Lo que sucedió es que uno recién se da cuenta como un país es subdesarrollado, es atrasado y es dependiente. ¿Cómo se da cuenta uno? De entrada, por la falta de servicios. Aquí no había luz eléctrica, agua, teléfonos celulares, internet y los caminos no eran buenos. Cuando digo aquí, digo en toda la región. Entonces, desarrollar industrias en esas condiciones y, peor, de la magnitud con la que estamos desarrollando, eso es totalmente complicado, difícil. Muchas veces si no tiene el apoyo político, el apoyo económico, esa visión de desarrollo, de industrialización de los recursos naturales, que tiene un presidente como el Presidente Evo Morales, entonces no tienen futuro esos proyectos que se van a iniciar. Uno llega a comprender lo siguiente; es más fácil colocar una industria en Europa que colocar un ladrillo en esta región.*”

²³⁸ This is the specific way the interview partner wanted to be cited, as “asesor del poder legislativo”.

²³⁹ Original quote: “*En todo caso, la voluntad de avance es innegable. Esta es una opinión personal, yo he sentido que se prefiere avanzar lento, en vez de tener que ceder en la soberanía tecnológica, en vez de ceder a la tentación de que ya venga el paquete tecnológico completo para que nos resuelva el problema desde afuera.*”

“We have come with a political vision, having the security that this was the **only** opportunity that **life** and the fatherland would give us to make something great for the country. This is part of the liberation from economic and political dependency.”²⁴⁰

The vision of the project is thus publicly linked to the strategic goal of economic liberation from the status of a primary resource exporter. The participation in a project with such an important mission for the country fills those involved with personal “pride” (interviews with M. Castro, 12.11.2015; J. Carballo, 4.12.2015; H. Cordova, 21.10.2015; and R. Martínez, 12.11.2015). As Raúl Martínez, head of GNRE community services, puts it (*ibid.*):

“Now we, I, feel happy with this job, but I also feel committed, very committed to our organization. **All the people** here in the project are committed to it, because we know that we will be one of the first industries in the country, **but** also because we know that the country and our institution have confided in us. We come from a process of selection and it is expected that after this selection process, the people who are here are those that have, it can be said, excelled most.”²⁴¹

The GNRE has made progress in its initiative and has overcome important technical challenges in constructing a modern camp site and important infrastructures in the Salar de Uyuni. To tackle the lack of qualified personnel and technology, the company has supported knowledge generation through training programs, international education cooperation, and the acquisition of laboratories and machinery. Especially after 2012, when it became clear that the initial time frame could not be met, cooperation with international consultancies intensified, also involving the search for technical support for the first two phases of the project (Ströbele-Gregor 2015, 32). Activities range from the hiring of German, French, and Chinese experts on lithium and potassium to the complete acquisition of a pilot battery plant from China, including the employment of Chinese experts to train Bolivian workers. Further scholarship programs for students were initiated with Japan, China, the Netherlands, and France, while an education and training initiative with Germany is in planning.²⁴²

²⁴⁰ Original quote: “*Nosotros hemos venido con una visión política, teniendo la seguridad de que era la **única** oportunidad que **la vida** y la patria nos daba para poder hacer algo grande por el país. Esto es parte de la liberación de la dependencia económica y política.*” Words emphasized by the speaker are in bold.

²⁴¹ Original quote: “*Ahora nosotros, yo me siento contento en este trabajo, pero también me siento comprometido, muy comprometido con nuestra institución. **Todas las personas** aquí en el proyecto están comprometidas con este, porque conocemos y sabemos que vamos a ser una de las primeras industrias del país, **pero** además de todo esto, porque sabemos que el país y nuestra institución han confiado en nosotros. Nosotros venimos de un proceso de selección. Sí, y se supone que después de este proceso de selección aquí están las personas más, podemos decir, que más han sobresalido.*” Words emphasized by the speaker are in bold.

²⁴² There might be further cooperation but information on this topic is scarce. The above-mentioned programs were discussed in interviews with J. Carballo, 4.12.2015; H. Córdoba, 21.10.2015; M. Castro, 12.11.2015; J. Campanini, 28.3.2016; J. Moeller, 23.10.2015; and P. Ticona, 5.4.2016.

Critical analysts challenge these developments as indications that the government overestimated its capacities to manage the project with national knowledge and technology. They posit that the lack of qualified personnel endangers the projects' continuity. It is frequently criticized as a management mistake that mostly young university graduates were employed on the plants rather than knowledgeable experts (e. g. interviews with J. C. Zuleta, 2.12.2015; S. Escalera, 25.3.2016; R. Caravajal, 4.5.2016; H. Córdova, 21.10.2015 and anonymous interview with a mining analyst, 27.11.2015). Moreover, mining professor Carlos Sandy from Oruro University (interview, 9.11.2015) stressed with regards to knowledge generation that while individual students have been sent abroad for training, "there has not been a public policy of enhancement and preparation of the human resources from the state through the universities and research centers, and there still is none."²⁴³

A common observation, which the Bertelsmann Foundation upholds in its country report on Bolivia (2016) for different large-scale projects of the MAS administration, is that the political leadership tends to declare maximalist goals, only to adjust planning to realistic objectives at a later stage. This repeatedly leads to a revision of the initial time and cost frame. In the lithium program, through these adaptations, all project phases are carried out simultaneously. This poses challenges for the integral nature of the program (Guzmán Salinas 2014a, 7–8). Different analysts claim that the technical infrastructures as well as the technological and scientific choices (such as a decision for the Foote processing method) are erroneous or continuously insufficient to reach the resource quality demanded on the market (e. g. Espinoza Morales 2012a; 2013; Zuleta Calderón 2013b; Guzmán Salinas 2014b; Ströbele-Gregor 2015; see also Chapter 5.1).

²⁴³ Original quote "*pero una política pública de mejoramiento y preparación de los recursos humanos desde el estado a través de las universidades y centros de investigación no ha habido y no hay hasta ahora.*" As Javier Moeller from the Economic Council of the German-Bolivian Chamber of Industry and Commerce underlined (interview, 23.10.2015), the project could also face the danger that students who were internationally educated on lithium emigrate from Bolivia for better job opportunities elsewhere when salaries do not meet international standards.

6.2.2 Long-Term Planning and Market Integration

A further point of criticism relates to shortcomings in project planning. In a nutshell, critics argue that the project is not anchored in a long-term assessment of feasibility, profitability, and scientific efficiency, that it lacks thorough pre-studies, and that money is not wisely invested (interviews with analysts J. C. Zuleta, 2.12.2015; S. Escalera, 25.3.2016; G. Cortéz, 4.5.2016; C. Arze, 26.10.2015; and P. Villegas, 23.3.2016, among others). The project's delays, it is argued, have put pressure on the GNRE to show rapid results. Critical voices underscore that time constraints have supported a concentration on construction activities.²⁴⁴ Thereby, the building of industrial plants is advanced despite severe technical uncertainties and insufficient technological investigations in the pilot phase (interviews J. Claros, 18.11.2015; C. Arze, 26.10.2015).²⁴⁵ Moreover, since industrial planning is still ongoing, different analysts ascertain that a final decision on the method of lithium carbonate production has not yet been taken (interviews with C. Arze, 26.10.2015; G. Roelants, 20.05.2016; and anonymous interview with a mining analyst, 27.11.2015). Observations of insufficient planning are to a certain extent confirmed when a member of the COMIBOL board indicates (anonymous interview): "it has to be seen, we do not know, when we arrive at the product, when it is already industrialized, we will see the returns, if it really was worth the effort to do this project or not."²⁴⁶

Analysts also question whether byproducts and industrial infrastructures for the base materials of production (e. g. concrete, lime etc.) are sufficiently taken into consideration (interviews with analysts C. Sandy, 9.11.2015; and G. Cortéz, 4.5.2016).²⁴⁷ Also, a limited assessment of transportation costs and insufficient infrastructural planning are points of contestation, raising

²⁴⁴ Another result of this time pressure is the particularly short time frame for external contracts. The representative I interviewed from ERCOSPLAN framed it like this: "I would recommend any contracting agency to give itself more time for this" (interview 2.3.2016; similarly, H. Alvarez, employee of a GNRE subcontractor, interview, 25.4.2016). Horacio Cortéz from the mining ministry relates these short time frames to a characteristic of the Bolivian society, where people always want things to be completed and working immediately, otherwise a project loses credibility in the eyes of the population (interview, 20.4.2016).

²⁴⁵ Also mentioned in interviews with analysts S. Escalera, 25.3.2016; G. Cortéz, 4.5.2016; and C. Sandy, 9.11.2015. Potassium expert Escalera (ibid.) denies the government any kind of planning competence: "I am sorry to say that the government, specifically, does not plan anything. The only thing Evo Morales does is inaugurate. And he does that as a politician. He loves to appear in the news and in photographs, inaugurating something. And this, let's say, is not appropriate politics. Original quote: "*Lamento decir que este gobierno, especialmente, no planifica nada. Lo único que hace Evo Morales es ir allá para inaugurar cualquier cosa. Y eso hace por político. Le encanta salir en las noticias y en las fotografías, inaugurando algo. Y eso, digamos, no es una política apropiada.*"

²⁴⁶ Original quote: "*Hay que ver, no sabemos, cómo llegando al producto, cuando ya se industrialice, vamos a ver los réditos, si realmente ha valido la pena hacer este proyecto o no.*"

²⁴⁷ Also mentioned in interviews with P. Villegas, policy analyst at CEDIB (23.3.2016); M. Lérica, local activist Llica (9.10.2015); C. Coallaviri, engineer from Tahua (15.11.2015); M. Ayaviri, Vice-Governor of the Daniel Campos Province (13.11.2015); and an anonymous interview with a mining analyst (27.11.2015).

questions about the overall profitability of the project (e. g. interviews with logistic expert R. Echazú, 17.5.2016; analysts S. Escalera, 25.3.2016; and P. Villegas, 23.3.2016). Thereby, different sources frame the lithium project's design in relation to the trauma experience with the smelter Karachipampa, a “white elephant” which was built oversized and, despite gigantic investments, never started production (interviews with e. g. analysts P. Villegas, 23.3.2016; J. Villalobos, 7.12.2015; and F. Molina, 13.4.2016).²⁴⁸ Also, the identified shortcomings in planning and delays led to a debate among experts whether Bolivia's window of opportunity to enter the lithium market is already closing (Espinoza Morales 2012b; also interview with R. Carvajal, 4.5.2016; Ströbele-Gregor 2015; Zuleta Calderón 2014a, 2014b).

The most notorious critic of the government project is the lithium market expert Juan Carlos Zuleta (interview 2.12.2015; see also Zuleta Calderón 2014a, 2014b). He stressed that Bolivia has taken too long to develop the project. While it will sell some quantity of lithium carbonate in the future, he believes that if the country does not enter the market in the next years, it will miss a game changing opportunity for the country's development. Government sources, in turn, argue that lithium demand is both, substantial and growing. Bolivia will, as owner of the largest global resources, always have a market segment it can cover, despite the current delays in the program (Echazú Alvarado 2015; GNRE 2016).²⁴⁹ As Raúl Martínez from the GNRE puts it (ibid.):

“We have talked with these experts from the companies who know about the world of lithium, and we equally [know] because we have a monitoring system of what goes on with lithium in the world. They tell us, **easily** the age of lithium will only begin. And they make a forecast still for the next 20 years. Five years from now, we will already be in the game, currently we are with an internal market, but later we will be with an external market.”²⁵⁰

However, critical analysts point to important deficiencies in such market assessments. As has been pointed out in Chapter 5.1, Chile successfully covers the lithium-ion battery market and there are a

²⁴⁸ Similarly, the President of COMCIPO in Potosí Jhonny Llally, 14.5.2016. Policy analyst Fernando Molina remarks vis-à-vis the overall project set-up (interview 13.4.2016): “Thus, politically it works but not technically. Therefore, it finally ends up being a white elephant; it is an investment that you take from gas money and you throw that money out to the benefit of, above all, a bureaucracy.” Original quote: “*Entonces, políticamente funciona, pero técnicamente no. Entonces, al final termina siendo un elefante blanco; es una inversión que sacas de otra plata del gas y tiras la plata para beneficio sobre todo una burocracia.*”

²⁴⁹ Similar opinions were expressed in interviews with S. Cabrera, 19.5.2016; R. Martínez, 12.11.2015; and J. C. Montenegro, 5.11.2015.

²⁵⁰ Original quote: “Nosotros hemos hablado con estos expertos de las empresas, que conocen sobre el mundo de litio, y nosotros también porque hacemos todo un sistema de monitoreo, de lo que ocurre en el mundo con el litio. Ellos nos dicen **tranquilamente** recién va a empezar la edad del litio. Y hacen una previsión todavía de aquí a 20 años. De aquí nosotros a cinco años, ya vamos a estar en la carrera, ahorita estamos con un mercado interno, pero después vamos a estar con un mercado externo.” Words emphasized by the speaker are in bold.

growing number of projects in Argentina with direct participation of car manufacturers. These transnational companies are mostly interested in buying lithium carbonate as raw material. For Bolivia, it will be hardly possible to compete with low cost technology production and to sell Bolivian batteries to Asian market leaders or international car companies. Consequently, Bolivia would need to find a segment in the international market to sell lithium carbonate as raw material and aim for a national and regional market for processed lithium goods. Yet, the market study for Bolivian lithium batteries was only commissioned in 2015 (GNRE 2016), seven years after the start of the project and after the pilot plant for battery production had already been bought.²⁵¹

For potassium, on the contrary, a large Latin American market exists, since neighboring agro-industrial giant Brazil is the largest potassium consumer in the world (Rauche 2015, 62). Consequently, potassium production has become an equally important objective of the project. The former head of the Scientific Committee of GNRE, G. Roelants (interview, 20.5.2016), emphasizes that it is the combination of lithium and potassium production that makes such a project cost-effective. SQM in Chile also sustains its lithium production with incomes from potassium sales (ibid.). Some analysts even suspect that the government is actually focusing on potassium (interviews with J. C. Zuleta, 2.12.2015; D. Clemente, 15.5.2016; Augstburger 2013).²⁵²

6.2.3 Criticism and Government Reactions

Criticism of the project and government reactions to such criticism has been, at different moments, over the top. I would like to make two observations on this topic to keep in mind for the following analysis.

First, some experts I interviewed seemed to accept neither positive results nor the idea of the project altogether. As has been pointed out in the methodology section, it is important to consider that many of the analysts that publish articles opposing the lithium project in the national newspapers are ex-authorities of former governments or voices critical of the government's project as such. This questions the objectivity of some critical remarks and explains why these societal sectors are criticizing particularly the public management of the project. Therefore, certain points of criticism

²⁵¹ The results of the study had not been published at the time of writing.

²⁵² In the scenario developed by Augstburger (2013), the 30 participating experts considered a national program focusing on potassium the most likely scenario.

should be put in perspective. Different critical analysts have, for example, challenged the limited transparency on the advances in Llipi, since the GNRE annual memories do not disclose all technical details and changes in time frames (interviews with e. g. M. Lériida, 9.10.2015; C. Arze, 26.10.2015; J. C. Zuleta, 2.12.2015; S. Escalera, 25.3.2016; and an anonymous interview with a mining analyst, 27.11.2015). At the same time, it should be recognized that GNRE publishes project information on a regular basis. Federico Nacif, Argentinean researcher on lithium (interview, 16.3.2016), emphasized that GNRE discloses considerably more project details than private companies in Argentina.

Nonetheless, what is problematic, and this leads me to my second point, is that the government does not invite independent evaluation of the information it provides. In general, the MAS administration has not been open to criticism of any of its industrial initiatives or its sovereignty strategy and has harshly challenged critical civil society actors (Bertelsmann Stiftung 2016).²⁵³ Thereby, the MAS “regularly insisted on polarization and mobilization instead of moderation and dialogue” (Bertelsmann Stiftung 2016, 25).

Similarly, in relation to the lithium project, Olivera (2014, 182) outlines that the fear of “internal agents” and transnational interests has supported a widespread mistrust within the GNRE and a cautious management of project information. The GNRE’s reaction to the study *Litio: Un Presente sin Futuro* (Lithium: A Presence without a Future) published in 2014 by the NGO CEDLA illustrates this. In an article published on the GNRE website, executive manager Alberto Echazú (2014) accuses CEDLA of using the study for political motives, of being unpatriotic and an internal enemy of the state, of lying, and not having the competence to publish an evaluation of the program.²⁵⁴ This could also be related to the fear that critical reporting on the initiative impacts public opinion of lithium industrialization negatively. Similar discrediting of civil society positioning could be

²⁵³ On government reactions to criticism of the lithium project, see Olivera (2014); on the GNRE / CEDLA controversy, see Echazú Alvarado (2014), Ruiz (2015), and Montenegro Bravo (2015).

²⁵⁴ One year later, Vice-President García Linera uttered harsh criticism of four Bolivian NGOs, including CEDLA, and threatened to revoke their licenses for “generat[ing] controversy regarding government policy for the exploitation of natural resources” (Ruiz 2015). The CEDLA study outlined dramatic effects of the lithium program for the local environment, particularly through the generation of massive amounts of toxic waste (see Chapter 6.5). While the form of criticism of GNRE was inadequate, it also needs to be pointed out that different technical experts I interviewed have equally questioned CEDLA’s dramatic description. Jorge Campanini of the NGO CEDIB, which is also critical of the government, puts it like this: “At one moment some comrades had published that a mountain range of waste and residuals would be created, but it is very easy to refute this. It is not true. I think some calculation has not turned out well, but it is not the truth.” Original quote: “*Algunos compañeros habían publicado que iba a crearse una cordillera de lodos y residuos, pero eso es fácil de refutarlo, no es verdad. Algún cálculo no les ha salido bien por ahí. Pero no es verdad.*”

observed in other mining projects (e. g. the TIPNIS case) (see Chapter 4.5.2). In the lithium project, critical analysts report, off the record, of being on a “blacklist” with no access to GNRE information. Everybody, a former high-level government officer told me, that has worked in previous administrations is considered a “black sheep” by this government. Also, interview partners anonymously mentioned judicial processes that have been initiated against them for “unfriendly” reporting (anonymous interviews 2015–2016). Former MAS senator Carlos Sandy (interview 9.11.2015) connected this “thin skin” of the administration to far-reaching suspicions against old elites, Bolivian intellectuals, and academics:

“When the project started, the current government did not trust much in the Bolivian intellectuality. The Bolivian intellectuality was generally mestizo, white; there were no original people. It [the government] did not trust in the universities much, it trusted more in politicians, professionals that circumstantially were politicians, and they occupied themselves in recruiting and preparing some people abroad, but all in all, they did not have the human resources prepared for the project.”²⁵⁵

This polarization between political parties and extra-parliamentarian opposition is deeply rooted in Bolivian political practice (Jost 2008, 97 et seqq.). It is unfortunate that it continues for the lithium project. Particularly (old) elites, with access to international education, have obtained the education necessary to support the initiative scientifically and technically. Bolivia has internationally recognized experts on the subject, such as Oscar Ballivián, who was head of the UMSA-ORSTOM research project and published the first estimates on Bolivian lithium resources, which continue to influence resource assessments (Ballivián and Risacher 1981). Moreover, Saúl Escalera registered two international patents on potassium processing. Both are not involved in the project. The same applies for non-governmental organizations that could have supported an external evaluation of project planning, for example, in relation to the environmental impact assessment.

The spiral of mutually reinforced criticism of the project is also linked to two fundamentally opposed visions of how Bolivia can and should manage its natural resources; national control or based on foreign investments. These opposing visions have, in the past, strongly impacted meaning-making about resource projects. Nationalization and national management of Bolivian resources, as is argued by the current government and many other left-wing governments before, support

²⁵⁵ Original quote: “En cuanto empezó el proyecto, el gobierno actual no confiaba mucho en la intelectualidad boliviana. La intelectualidad boliviana era generalmente mestiza, blanca; no había originarios, no confía mucho en las universidades, confía más en los políticos, los profesionales que circunstancialmente estaban como políticos, y ellos se ocupan de reclutar y preparar alguna gente en el exterior, en fin, pero no se contaba con los recursos humanos preparados para este proyecto.”

value-adding in the country. This could liberate Bolivia from its status as raw material exporter. The lithium project is consequently framed as a cornerstone of the national strategy of sovereignty. In relation to the idea of liberation from foreign domination, however, the MAS vision in mining is challenged as insufficient and criticized as neo-extractivist. Non-governmental organizations critical of the MAS argue that the project aims only at limited value-adding, supports foreign investments in the extractive sector, and continues the primacy of primary commodity export (Bertelsmann Stiftung 2016; Orihuela and Thorp 2012; compare Chapter 4; see also Pellegrini and Ribera Arismendi 2012). From the national and international private sector, the current initiative is challenged for its technical inferiority and framed as a white elephant that Bolivia will not be able to implement without foreign support. This necessary help comes at the price of letting foreign companies participate in the lithium carbonate business in Bolivia.

This assessment outlines that the project is framed very differently by government and non-government actor groups at the national level. Criticism of the one side and counter-criticism of the other have created insurmountable barriers between the government, civil society and a great majority of intellectual mining elites opposed to the current nationalizing strategy. Thereby, the hardened opinions have, to the dismay of the initiative, often impeded an unbiased, practical engagement with technical choices and options in the lithium and potassium project. In the following chapters, I will discuss how these contradictions and different viewpoints have influenced governance of the project and impacted on its local interpretation.

6.3 Internal Project Organization and Stakeholder Integration

6.3.1 Competence Sharing and Decision-Making in the Lithium Project

Before engaging with the internal organization of the lithium project, it is important to recapitulate decision-making structures in the public mining sector (see Chapter 4.4). Legal initiatives, political guidelines, and project planning are competences of the Ministry of Mining and Metallurgy as the “head of the sector” (interview with H. Cortéz, MMyM policy analyst, 20.4.2016) and its three Vice-Ministries. The independent oversight agency AJAM has fiscal and judicial supervision and the duty to register mining activities and convey mining rights. Public mining activities are carried out by the state mining company COMIBOL and its subsidiaries, “as the operational arm of the ministry” (ibid.). COMIBOL also develops regulations in the mining sector for the laws developed by the

MMyM. Since its foundation as DNRE in 2008, the lithium and potassium organization GNRE has been part of COMIBOL. Plans exist to transfer it into an independent company.²⁵⁶ Internally, COMIBOL is headed by an Executive President and a Management Board, while the GNRE is headed by a General Manager (*gerente*).²⁵⁷

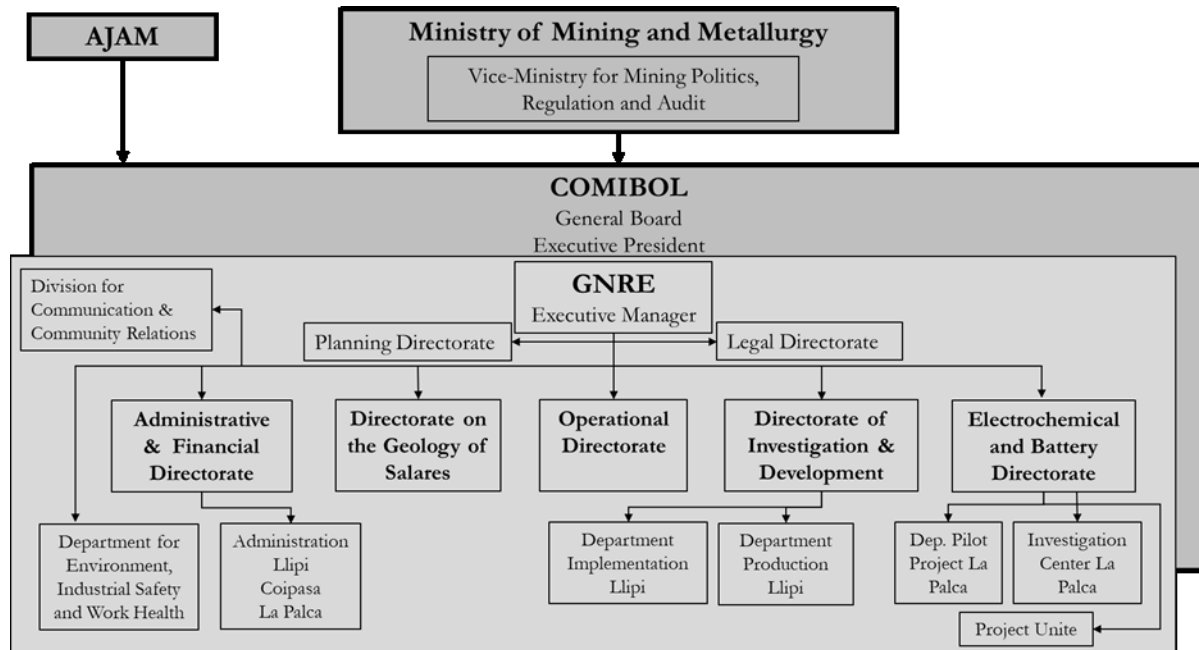


Figure 12: Internal Institutional Structure of the GNRE

The GNRE consists of five directorates with branch offices at the production sites in Llipi and La Palca (GNRE 2016) (Figure 12).²⁵⁸ I found that the GNRE has substantial autonomy within COMIBOL and relative freedom from ministry control. Important organizational and financial decisions, however, must be approved by COMIBOL headship and, particularly when it comes to the allocation of funds, by the Ministry of Mining and Metallurgy and other state ministries such as the Ministry of Economy and Public Finances or the Ministry of the Planning of Development (interview with I. Beltrán, Director Vice-Ministry for Mining Politics, 19.5.2016).

²⁵⁶ In February 2017, plans were announced to establish such a company under the umbrella of the newly founded Ministry of Energy (Quintanilla 2017). These potential organizational changes cannot enter this analysis, which is based on information gained in interviews during 2015 and 2016 as well as documents from prior years.

²⁵⁷ From 2008 to 2010, the previous institution DNRE was headed by Saúl Villegas Requis. From 2010 to early 2017 former Minister of Mining Alberto Echazú presided the institution. Then he was promoted to Vice-Minister of High Energetic Technologies at the new Ministry of Energy (Quintanilla 2017). In March of 2017, Juan Carlos Montenegro Bravo (see interview partners) was announced new national manager of evaporite resources (COMIBOL, Memorandum PE-DARH-013/2017, 2.3.2017).

²⁵⁸ The organizational chart was translated and simplified from GNRE (2016b).

The MMyM, in cooperation with the AJAM, controls in how far general project goals are met by COMIBOL and its subsidiaries, particularly in relation to the execution of the allocated budget (*ibid.*). Thereby, the ministry has only a functional supervision over COMIBOL, which is independent in its administrative and technical decisions in relation to service contraction and human resources, for example. With respect to the GNRE, the MMyM does not have real supervisory control, since the project is part of the internal COMIBOL structures. Thus, the technical and functional oversight of GNRE is the responsibility of COMIBOL.

The organization of the project is strongly centralized at the national level in part because the initiative is classified as strategic. In the administration of strategic mining resources, the central government takes clear priority over departmental and local authorities, which are not able to form mining companies or participate in industrialization (see Chapter 4.4). Local and regional government agencies are not seen as agents in the planning and implementation of the strategic resource projects. The competences of departmental agencies are limited to functions in oversight of project implementation (e. g. environmental monitoring) (interview with R. Apaza, policy officer at the Departmental Mining Agency in Potosí, 17.11.2015).²⁵⁹

Deficient state institutions and an overly bureaucratic state apparatus make the operation of public projects challenging in Bolivia (Bertelsmann Stiftung 2016; Echazú Alvarado 2015; Farthing and Kohl 2014). A problem central to most interview partners and frequently voiced by employees of the GNRE and the mining ministry itself (e. g. interview with I. Beltrán, Director at the Vice-Ministry for Mining Politics, 19.5.2016)²⁶⁰ is that these bureaucratic structures have, at times, supported a long and tiresome decision-making process. Specifically, COMIBOL is seen as a bureaucratic organization that has slowed action in the lithium and potassium initiative (Echazú Alvarado 2015, 320 et seqq.). To confront the bureaucratic structures at COMIBOL, the government had sought already in 2010 to establish a lithium company independent from the mining corporation (*ibid.*)²⁶¹ This initiative, however, failed. Former Minister of Mining José

²⁵⁹ This was also confirmed by interviews with E. Caguecirri, policy officer at the Departmental Agency of Mother Earth of Potosí, 12.5.2016, and N. Baldivia, policy officer at the Departmental Agency of Industrialization of Potosí, 12.5.2016.

²⁶⁰ See also anonymous interview with GNRE employee, 11.10.2015; interviews with H. Cortéz, Division for Evaporite Resources, MMyM, 20.04.2016; R. Martínez, GNRE community relations, 12.11.2015; G. Roelants, former head of the GNRE Scientific Committee, 20.05.2016; and J. Pimentel, former Minister of Mining, 4.5.2016.

²⁶¹ CEDLA analyst Carlos Arze (interview 26.10.2015), however, also stressed that the blame is frequently placed on COMIBOL, neglecting to reflect on internal problems of the GNRE.

Pimentel underlined in relation to the failure to found the lithium company EBRE at this early moment (interview, 4.5.2016):

“Thus, this is an incident that will in retrospect, maybe, explain a series of problems that the project has had, given the lack of autonomy in the implementation of the project, because the organization of evaporites is a means that depends on an institution such as COMIBOL, which continues to be bureaucratic and cumbersome.”²⁶²

The lithium project is thus intertwined in the bureaucratic organization of the public mining sector. As the Bertelsmann Foundation (2016, 25) stresses, the problem of deficient institutions was further enhanced by a continuous change in administrative personnel throughout the MAS administration, combined with a restructuring of the public bureaucracy across all state levels. An additional challenge, also considering the broad basis of the MAS social movement, is a lack of administrative experience, which “led to a governing style characterized by improvised decision-making” not anchored in systematical evaluation and institutionalized policy learning processes (ibid., 25). In Bolivia, “innovation and flexibility, therefore, emerge instead through trial and error or simply muddling through” (ibid., 25).²⁶³ These struggles with a particularly bureaucratic institutional organization and limited administrative competences are common to many MAS industrialization projects, supporting a repeated use of informal and clientelist networks to seek rapid advancement (Bertelsmann Stiftung 2016; Farthing and Kohl 2014, 57 et seqq.).

These instabilities and informal mechanisms can also be observed in the public mining sector, in the management of COMIBOL in general, and in the lithium project in particular. Repeated mining crises have led to a rapid replacement of political personnel. Under Evo Morales, Bolivia has seen seven mining ministers and eight presidents of COMIBOL until 2016. The mining leadership was often changed after conflicts with cooperative miners; some authorities were only in office for a couple of months.²⁶⁴ The frequent fluctuations in the leadership of the MMyM and COMIBOL,

²⁶² Original quote: “Entonces, este es un incidente que posteriormente, tal vez, vaya a explicar una serie de problemas que ha tenido el proyecto, dada la falta de autonomía en la realización del proyecto, porque la organización de evaporíticos es una medida que depende de una institución como la COMIBOL, que sigue siendo burocrática y pesada.”

²⁶³ Similarly, the former head of the Vice-Ministry of Mining Politics and mining analyst Guillermo Cortéz describes the functioning of the administrative organization in Bolivia as “a system of trial and error, when I do this; I fail, thus I do that, and in the meantime, the millions disappear and disappear.” Original quote: “Eso es mucho aplicar el sistema de probar a riesgo, cuando yo hago, fallo, entonces hago esto, y mientras tanto, los millones se van y se van.”

²⁶⁴ Mining ministers were Walter Villarroel (a cooperative miner), Guillermo Dalence, Luis Alberto Echazú (head of GNRE until February 2017), Milton Gómez, José Pimentel, and Mario Virreira (Espinoza Morales 2012c). Since April 2014, Felix César Navarro Miranda has been Minister of Mining and Metallurgy. COMIBOL presidents under the MAS administration included Antonio Rebollo, Hugo Miranda, Héctor Córdova, José Pimentel, Edgar Pinto

which are generally linked to replacements in subordinated administrative positions, impeded the formation of a stable institutional corporation network between GNRE, the MMyM and the mining company. Moreover, in light of a general weakness of COMIBOL headship, the GNRE could secure certain independence from its mother organization, which hardly has any impact on the project's execution (interview with H. Córdova, former President of COMIBOL, 21.10.2015).²⁶⁵ A COMIBOL employee (anonymous interview, 2016), for example, compared the board's knowledge of the lithium project with a wooden box: “we are not involved **that** profoundly, superficially, we look at the general picture, **superficially**. It is comparable to this quadratic device, I can tell you that it has this and that, but I do not know its internal content.”²⁶⁶

Particularly after the failure to create an independent lithium company in 2010, important parallel decision-making structures emerged in the project to confront the bureaucratic state apparatus and the formal chains of command within COMIBOL. Next to the official hierarchy, a direct communication channel developed between the head of the GNRE and President Morales. The direct involvement of the president was, in my interviews, seen both positively and negatively. On one hand, it was perceived as an important recognition of the project's potential, supporting agile decision-making structures (interviews with H. Córdova, 21.10.2015; M. Castro, 12.11.2015). On the other hand, it was interpreted as a sign of the politization of the initiative and a separation of decision-making from technical indicators (interview with P. Villegas, 23.3.2016). Moreover, the informal structures depend on personal ties and individual preferences. This has, at times, supported imbalances in informal decision-making pathways and slowed down the project.²⁶⁷

(interim), and Edgar Hurtado (interim). From August of 2013 to January 2017, Marcelino Quispe headed the public mining company and was replaced on January 25, 2017 by José Pimentel, former Minister of Mining.

²⁶⁵ Similarly, interviews with J. Möller, German-Bolivian Chamber of Industry and Commerce, 23.10.2015; and C. Arze, CEDLA, 26.10.2015.

²⁶⁶ Original quote: “*Nosotros no estamos involucrados **tan** profundos, superficialmente, la radiografía la vemos, **superficial**. Es como este aparato cuadrado, te puedo decir que este tiene esto y esto, pero no sé, que tiene en el contenido interno.*” Words emphasized by the speaker are in bold.

²⁶⁷ Individual interview partners referred to times of disagreement between the leadership of COMIBOL, GNRE and different ministries, which slowed the project's advancement (interviews with H. Córdova, 21.10.2015; M. Olivera, 3.12.2015; and F. Nacif, 16.3.2016). Moreover, GNRE employees anonymously told me that the *Gerencia* itself is split between the interests of its different directorates, with a certain institutional priority for the Operational Directorate to the dismay of the Directorate of Investigation and Development. There is, however, no external confirmation of this (anonymous interviews in 2015 and 2016).

6.3.2 Community Relations, Consultations, and Social Control

Literature on resource governance has stressed the importance of local anchoring of resource projects by integrating local actors in project planning and implementation. Social control by local actors and their organizations supports not only the integration of their ideas, observations and traditional knowledge into the initiatives. It also provides an important check on public management, especially in relation to aspects of transparency and corruption. For this goal, the GNRE (2013, 79) has created a specific role:

“The Directorate for External Relations and Communication [which], through its Division of Community Relations with the operational base at the Llipi plant, has developed a permanent channel of information and coordination of activities with the communities in southwestern Potosí.”²⁶⁸

The community relations of the company can be divided in three important branches: first, the coordination with community organizations; second, the exchange with local inhabitants through information events and the establishment of backward linkages; and third, formal consultation processes. According to the GNRE (2012, 97, 2015c, 104), the roles of community relations is to educate about the objectives and extension of the project, secure the social sustainability of the industrialization initiative, enhance the participation in supervision and control of the project, and support communal projects.

Interaction with Social Organizations

The GNRE underscores in its annual report for 2014 that social organizations in the region serve “as permanent watchdogs and controllers in this important public venture” (GNRE 2015, 103). Particularly in the beginning of the project, the GNRE sustained extensive relations with the local syndicate FRUTCAS. In 2007, FRUTCAS presented a project proposal to the government out of which the whole lithium initiative was developed. The lithium project is thus considered by many government actors as a venture of the salar communities themselves, practically equating

²⁶⁸ Original quote: “Es así que la Dirección de Relaciones Externas y Comunicación, mediante su Unidad de Gestión Comunitaria con base de operaciones en la Planta de Llipi, ha desarrollado un permanente canal de información y coordinación de actividades con las comunidades del sudoeste potosino.”

FRUTCAS with the local population of southwestern Potosí (GNRE 2013, 79).²⁶⁹ GNRE community relations manager Raúl Martínez (ibid.) highlights that it is

“a very important factor that the communities have planted and accepted the project, therefore, there is no instability as in other mining projects.”²⁷⁰

Olivera (2014, 80) stresses that the project was anchored in “an implementation strategy based in the relationship or political axis: Executive power (Evo Morales), MAS/IPSP, FRUTCAS.” Among local organizations, FRUTCAS thus takes a dominant position in what the government refers to as “social control” of the project and has emerged as an important link between the national and local level (Olivera Andrade 2014, 79 et seq.). Regarding other social organizations in the region, however, the special role of FRUTCAS is indicative of significant power imbalances. Moreover, in other mining projects the MAS government has shown a tendency to negotiate with local communities directly about their individual demands, bypassing social and indigenous organizations (Pellegrini and Ribera Arismendi 2012; see also Chapter 4.5.2). Whether this is also a factor in the lithium project will be analyzed in the Chapter 7.3.

Interaction with Local Inhabitants and Information Management

Besides an exchange with local organizations, and FRUTCAS in particular, the GNRE also supports general relations with the local communities and has initiated different projects of social responsibility with the goal of improving basic development in the area (GNRE 2010, 2013, 111) and the creation “of an environment of mutual trust” (GNRE 2012, 97). This also involves the employment of locals as workers on the plants or in the provision of services, which will be further discussed in the subsequent Chapter 6.4 on benefit distribution. As former COMIBOL President Héctor Córdova (interview 21.10.2015) points out, since local people are working for GNRE, “they have appropriated the project, they will defend it energetically if necessary, but they will also exercise a social control that secures that the project works as it should work.”²⁷¹

²⁶⁹ Similarly, interviews with former minister J. Pimentel, 4.5.2016; GNRE community relations manager R. Martínez and the head of the Llipi plants M. Castro, both 12.11.2015; former President of COMIBOL H. Córdova, 21.10.2015; and mayor of Uyuni, P. Mendoza, 16.11.2015.

²⁷⁰ Original quote: “Un factor muy importante es que las comunidades han planteado, aceptado el proyecto, no hay inestabilidad como en otros proyectos mineros.”

²⁷¹ Original quote: “Se han apropiado del proyecto, lo van a defender de manera enérgica si es necesario, pero también van a ejercer un control social que haga que el proyecto funcione como debe funcionar.”

A further important task of GNRE community relations is the continued information of local communities through public events and, for a couple of years, a radio program (which was not operational at the time of investigation) (interview with R. Martinez, 12.11.2015). There is only limited information of the extent of these activities. According to the annual GNRE report for 2011 (GNRE 2012, 98), 33 local communities were visited that year and 1,673²⁷² persons were informed about the project. Similarly, from January to September 2013, the GNRE had reached out to 1,212 individuals (GNRE 2014, 112). Yet, since this information is not provided in all annual reports, the overall extent of GNRE community information services is difficult to access.

Moreover, as indicated in the environmental impact study (Taucer and Anze 2013, chap. 4), the GNRE has identified the major area of impact of the project in the province of Nor L pez and, to a limited extent, in the province of Antonio Quijarro, thus in the southeastern part of the Salar de Uyuni. It has consequently focused its information campaign on these areas. In 2010, local information was nearly exclusively available for the provinces of Antonio Quijarro (city of Uyuni) and Nor L pez, with only one event in the Daniel Campos province (GNRE 2012, 98). In 2013, 595 (and thus about half) of the informed local inhabitants came from Nor L pez, 382 from Antonio Quijarro, and only 90 from the province of Daniel Campos (GNRE 2014, 112). Moreover, as will be pointed out in Chapter 7 on grievances, the local perception also in the privileged southeastern part of the salar is that community information has declined, particularly after 2014.

Consultation Processes

Another dimension of the GNRE interaction with local communities is through the formal channel of local consultations. The Bolivian legislation establishes, for certain sectors of the population, the right to be consulted on large-scale initiatives, particularly when they connect to the exploitation of natural resources. Therefore, two parallel consultation processes exist, the called public consultation (*consulta p blica*) based on the environmental regulations, and the prior consultation (*consulta previa*), established by the Constitution and the laws on mining and hydrocarbons. The environmental public consultation is carried out within the framework of an environmental impact study called Analytical Integrated Evaluation of the Environmental Impact (Evaluaci n An lica Integral del Impacto Ambiental – EEIA). The public consultation as part of the EEIA assesses and integrates

²⁷² Included are 286 people who were informed in the city of El Alto, La Paz department.

the opinions and suggestions of the people living in the impact zone. Results of the consultation are, however, not binding and the consultation process is not formally defined (Reglamento General de Gestión Ambiental, Art. 77–78; Reglamento de Prevención y Control Ambiental, Art. 162).

Moreover, indigenous nations, intercultural communities, and Afro-Bolivian peoples have a constitutional right to prior, free, and informed consultation to be carried out by the government in accordance with indigenous norms and procedures (CPE, Art. 343 and 352).²⁷³ While this constitutional right has existed since 2009, there was no specific regulation for mining consultations before the promulgation of the new mining law in 2014. As has been pointed out in Chapter 4.4, this law has been criticized for de facto curtailing the constitutional consultation right by clarifying that such a process is not necessary for exploration and prospecting (Art. 207 II), effectively making the right to a consultation process dependent on the definition of the project by the mining actor. Moreover, Article 207 of the LMyM establishes that the consultation is only necessary for new mining contracts which are presented after the promulgation of the law, leading to a de-facto inapplicability of a constitutional right before 2014.²⁷⁴ Also, in contradiction to the United Nations Declaration on the Rights of Indigenous Peoples (which is a national law in Bolivia), it is underlined that the consultation right is not understood as a right to prior consent but only to information (LMyM, Art. 208 III).²⁷⁵

The new Mining Code (LMyM, Art. 208) defines a consultation as:

“a process of intracultural and intercultural dialogue, carried out in good will, free and informed, which contemplates the development of successive steps of a proceeding, between the state, with the participation of the soliciting productive mining actor, and the

²⁷³ The LMyM (Art. 209) specifies the requisites for groups that can claim such a right: (1) pre-colonial existence and dominion of an ancestral territory; (2) conservation of cultural habits, ways of life, own social economic, cultural and political institutions which represent them and are different from organizations of other sectors of the population; (3) identification as part of a nation or people which currently conserves a relationship with said collective; (4) access and collective management of lands and territories.

²⁷⁴ A legal debate of this aspect goes beyond the scope of this thesis and the qualification of the author, yet I recommend a further engagement with the question whether the absence of an under-constitutional law can suspend the constitutional right to prior consultation for five years and, equally, whether such an under-constitutional law can then retrospectively qualify the scope of said constitutional right. It would be the duty of the called Defender of the People (*Defensor del Pueblo*) to present a constitutional complaint, yet this position is controlled by the government party MAS (interview M. Vargas, 13.4.2016).

²⁷⁵ This way, as policy analyst Carlos Arze (interview, 26.10.2015) expresses it, the consultation process of indigenous peoples “is functionalized to meet the current priorities of the government which is to increase mining exploration and prospecting (...)” Original quote: “*En el campo de la consulta previa a los indígenas, se funcionaliza ésta a las actuales prioridades del gobierno que son incrementar la exploración y prospección minera.*”

subject of the consultation, respecting its culture, language, institutions, norms and own procedures.”²⁷⁶

The law regulates that the consultation process is administered by the AJAM and carried out in three meetings within a maximum timeframe of four months. This is followed by a 15 day period for mediation and decision-making between the local inhabitants and the AJAM. If this process is not successful, the Ministry of Mining and Metallurgy enters the process and makes a binding and irrevocable decision within 15 days (LMyM, Art. 210 et seqq.). While in the case of a private mining initiative, the government thus functions as an intermediary between the company and the soliciting people, a certain shortcoming exists in public mining projects. In these cases, the same government also represents the mining actor, raising questions of the impartiality of the government oversight by the AJAM over another institution of the same administration. Moreover, since the final decision is made by the MMyM, there is no obligation to consider the suggestions of the indigenous actors, “while the normative design of the consultation process turns it into a mere administrative act” (interview with M. Vargas, 13.4.2016).²⁷⁷ Policy analyst Vargas further criticized a legal gap between the prior and the public consultation. Since the nonbinding public consultation is carried out on environmental issues, these topics are no concern to the (potentially more powerful) prior consultation in mining (ibid.).

Within the outlined legal requirements, a public consultation, as a requisite of the environmental regulations, was completed as part of the environmental impact study for the potassium project. A prior consultation did not take place. Despite its constitutional character, the right to a prior consultation for the indigenous and original peoples in the area²⁷⁸ is not applicable for a myriad of reasons. Most importantly, the lithium project began before the new mining law was enacted. Moreover, the government has repeatedly underlined that the project is still considered exploration, making consultation not necessary. Yet, in this mind frame, it is debatable whether a prior consultation would become necessary when the project enters its industrial phase. Raúl Martínez from the GNRE community services stressed that, although the legal obligation did not exist, the

²⁷⁶ Original quote: “proceso de diálogo intracultural e intercultural, concertado, de buena fe, libre e informado que contempla el desarrollo de etapas sucesivas de un procedimiento, entre el estado, con la participación del actor productivo minero solicitante y el sujeto de la consulta respetando su cultura, idioma, instituciones, normas y procedimientos propios.”

²⁷⁷ Policy analyst M. Vargas (interview, 13.4.2016) considers this a setback from the former neoliberal mining law which included a reference to the consultation right under the ILO Convention N° 169.

²⁷⁸ It is also debatable whether the local communities would qualify as subjects of a consultation process by the standards defined in the LMyM considering their weak conservation of pre-colonial institutions particularly in the southern salar. Yet, considering that different communities from Nor Lipez could establish a TIOC based on their characteristics, this could at least be argued for the communities comprised by this indigenous territory.

GNRE has complied with consultation requirements, inviting many local inhabitants to a workshop (interview, 12.11.2015). This, however, refers to the environmental public consultation process.²⁷⁹ It is also argued that the special relationship between the lithium organization GNRE and FRUTCAS and, in extension, the salar communities it represents gives the project a-priori legitimacy with local stakeholders. This, as Patricio Mendoza, mayor of Uyuni, accentuated, makes a formal consultation process unnecessary (interview, 16.11.2015):

“The project has not been developed in the classical way, when the government has an idea and implements it. For this, it would have to consult and inform. In this case, the situation has been reversed, which means that the decision to industrialize has come from the grassroots level, which has rather obligated the government to industrialize. Therefore, the first project, the project of the pilot plant, has been developed justly with technicians that the Federation of Peasants [FRUTCAS] has engaged. Therefore, if the grassroots level has asked for this, what can they tell us, this is already what we want.”²⁸⁰

As will be further discussed in the chapter on environmental governance, the impact assessments and the related public consultations were conducted separately for lithium and potassium. In 2012, a single public consultation was conducted for potassium industrialization in the Salar de Uyuni. The public consultation process was carried out in two phases, first an analysis of the affected communities and interviews with local authorities was carried out to classify the level of knowledge, provide information on the consultation process, and identify authorities who would be invited (Taucer and Anze 2013, chap. 4, 94 et seq.). In a second phase in July of 2012, local community leaders were informed in Spanish and Quechua in a participative workshop about the results of the environmental impact study²⁸¹ on the Llipi plant. About 300 people participated in the event (ibid.). After several presentations and discussions, the workshop ended with the signature of a public act in support of the project. According to the workshop documentation, all goals were reached, with a high participation and large-scale support, while the comments and recommendations, particularly related to question of contamination, project information, and rent distribution, were included in

²⁷⁹ There is no information in the GNRE annual reports on whether and how consultations were carried out in the Coipasa project. CEDLA analyst Jorge Campanini (interview 22.4.2016) told me that a public consultation (thus the consultation as part of the environmental regulation) was informally carried out during a protest march in the area.

²⁸⁰ Original quote: “*El proyecto no salió al estilo clásico, tiene una idea el gobierno y se la hace, para eso tendría que consultar e informar. En este caso, la situación ha sido al revés, o sea, la decisión de industrializar esto ha salido de las bases, más bien han obligado al Gobierno a que se industrialice esto. Por eso es que el primer proyecto, el proyecto de la planta piloto, ha sido generado justamente con técnicos que ha involucrado la federación de campesinos. Por eso es que, si las bases han pedido, que cosa nos van a decir, es ya de nuestro sentimiento.*”

²⁸¹ This is how it is specified in the impact study. The documentation of the workshop is, however, only in Spanish, and it is not clear whether a Quechua translation was provided. Moreover, Aymara speakers were not considered, probably due to the regional focus on the southern salar region.

the EEIA (ibid.). The results of the public consultation process are, however, not connected to further legal obligations.

At the same time, the public consultation process demonstrated shortcomings. First, in the public consultation, a promise was made to the locals that a further assessment for lithium will be carried out, including a second public consultation. In the documentation of the consultation workshop it reads: “It was asked how many public consultations will be made and it was clarified that for the project on lithium carbonate another environmental impact assessment study will be carried out with the respective public consultation” (Taucer and Anze 2013, chap. 4, 104).²⁸² Yet, such a second consultation process has not been carried out and does not seem likely, as the environmental impact assessment for potassium is considered sufficient to comply with legal requirements (see Chapter 6.5). Moreover, similarly to the general GNRE information strategy, the public consultation was focused on southern salar communities. Prior study visits were nearly exclusive to Nor LÍpez, while the Daniel Campos province was not visited and only individual interview partners were interviewed in the provinces of Antonio Quijarro and Enrique Baldivieso (Taucer and Anze 2013, Appendix VII). In the consultation workshop, local participation was consequently clearly tilted towards Nor LÍpez and, it could be argued, to their communal demands and interests (Figure 13).²⁸³

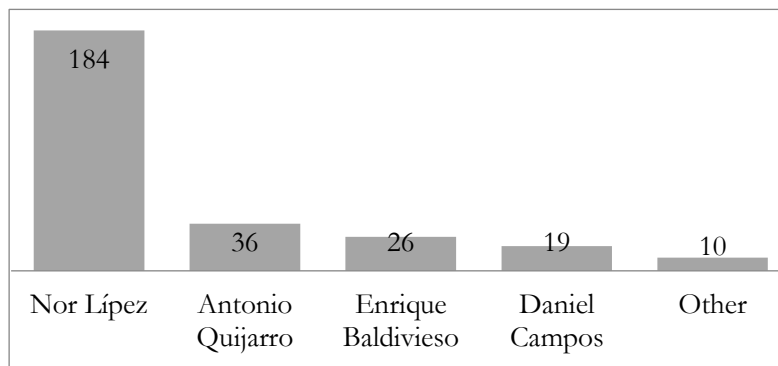


Figure 13: Participants in Public Consultation by Province

²⁸² Original quote: “Se preguntó cuántas consultas públicas se realizarán y se aclaró que para el proyecto de carbonato de litio se realizara otro estudio de Evaluación de Impacto Ambiental con su respectiva consulta pública.”

²⁸³ Figure 13 was compiled by the author based on the handwritten attendance list from the community workshop on July, 12, 2012 included in the EEIA (Taucer and Arze 2013, Appendix VII).

Summary of Findings: Governance of Information

Thus, in conclusion, it can be said that the internal organization of the lithium project is highly centralized and controlled by GNRE, which could secure far reaching administrative autonomy from other mining organizations. Institutions from the departmental and municipality level were barely involved in project planning and implementation, only fulfilling minor supervision tasks. This finding echoes what Jost (2008, 94–96) describes as an incomplete decentralization of the Bolivian political system, which is still primarily controlled at the central state level.

The centralization in internal project organization also spans non-government actors. The project is clearly oriented towards government action and does not provide space for a meaningful integration of civil society or local communities. For communal participation, the GNRE has established a program to coordinate with salar municipalities, supported information campaigns, and carried out a public consultation based on the environmental regulations. Yet, these isolated community programs do not give voice to local communities or empower them as meaningful checks and balances, since no channels exist for local inhabitants or their social organizations to demand changes in the program or seek further information.

The only social organization involved in some control function is the regional union FRUTCAS. Community involvement is strongly tilted towards the interests of FRUTCAS, as a local ally of the MAS government and the southern salar communities. The northern and northwestern salar region is only a minor beneficiary of the outlined GNRE strategy for community relations, indicating significant power imbalances between communities and individual social actors in the region. Therefore, while the company has made some efforts to promote the program, it has not sought a balanced or inclusive engagement with local communities in its industrialization initiative. How this interacts with local perceptions of the GNRE and the program, and what I term political grievances over communal information and stakeholder integration will be discussed in Chapter 7.3.

6.4 Socio-Economic Impacts and Distribution of Benefits

Local expectations towards the lithium project center mostly on the promise of local income and work opportunities. Official sources estimate the annual export value of Bolivian lithium and potassium products at 430 million USD, when full production levels are reached. This would constitute eleven percent of the mining export value of 2012 (Montenegro Bravo and Montenegro Pinto 2014, 96–97). As has been discussed in Chapter 5.1.3, at an earlier stage of the project, the government followed higher income projections based on estimations of 100 million tons of lithium and two billion tons of potassium resources in the Salar de Uyuni. In the project presentation during the public consultation with local communities in 2012, the GNRE projected an effective value of the salar resources of 1.84 billion USD (Taucer and Anze 2013, Annex VII).²⁸⁴ With current prices and planning modifications in the government program, I consider export value estimates of 285 million USD annually to be more realistic for full production.²⁸⁵ Currently, this income has not materialized because industrial production has not commenced. First, positive monetary impacts were generated through the sale of pilot lithium and potassium products from the potassium plant. In 2015, potassium chloride sales generated an income of 253,600 USD (GNRE 2016) and lithium carbonate sales revenues of 224,000 USD.

The income of the public lithium and potash project directly benefits the public mining company COMIBOL and, according to UMSA scientists Montenegro Bravo and Montenegro Pinto (2014), could generate nearly half of government income in mining. An official of the mining ministry estimates that the royalties from the project will surpass those of the San Cristóbal open pit mine (anonymous interview, 4.11.2015). According to the central government, these revenues should not only benefit the public budget but also development in the rural salar provinces. Former

²⁸⁴ The calculation of the projected income in the EEIA presentation is not comprehensible to me. Despite this aspect, it is important to note that this number was presented to the local authorities during the public consultation and is consequently likely to have shaped local monetary expectations towards the project.

²⁸⁵ Professor Montenegro Bravo from UMSA is one of the chief scientists in the government program and was named manager of GNRE in early 2017. He estimated sales income based on the original government projections that the program would produce 30,000 tons of lithium carbonate (expected price: 5,000 USD/ton) and 700,000 tons of potassium chloride (expected price: 400 USD/ton). However, the planning for the potassium production has changed recently and the industrial potash plant is, in a first stage, only designed to produce 350,000 tons of potassium chloride. Consequently, I have updated the calculation of gross sales income based on the expected production amounts and adapted prices based on current estimations. For potassium chloride, I calculated with 215 USD per ton (average price between July 2016 and June 2017) (Index Mundi 2017). For lithium carbonate, I used 7,000 USD, the average price estimate of the Deutsche Bank for 98.5 percent purity lithium between 2016 and 2025. High purity lithium of 99.5 percent would sell at higher prices but considering the current production difficulties, it is unclear in how far Bolivia will reach this standard for large-scale production in the short-run.

COMIBOL director Héctor Córdova (interview, 21.10.2015) expressed the government's expectations as follows:

“All income that comes from the mining sector pays royalties, which is a compensation for the territory where raw material is extracted, thus the department of Potosí is the department that receives most royalties, and it will receive much more now. And the area that also receives royalties will be very rich. Hence, it can be believed that the local development in the area where the plant is installed will be impressive.”²⁸⁶

Similarly, the head of the lithium and potassium plants in Llipi, Marcelo Castro (interview, 12.11.2015), stated:

“What we need now (...) is an example of an equilibrium between the industrialization, the communities, the social movements. This equilibrium serves to develop this industry, but with this specific vision. The vision is to create better days for the Bolivians, that with the money this industry will make, all Bolivians will reach old age, 80 years, with all of their teeth still intact.”²⁸⁷

The government considers lithium to be a strategic resource not only for national development but also as an economic impulse for the poor southwestern Potosí region (interview with M. Niura, policy officer at the Ministry of Mining, 4.11.2015). Consequently, it should be expected that revenue governance aims at a participation of local communities in the direct monetary benefits of the project and at extending and enforcing backward linkages for the communities.

6.4.1 Financial Regulations for the Lithium Project

The MAS government has not developed specific financial regulations for the lithium project. Consequently, the general regulatory framework for mining, as specified in the Constitution, the new mining law, and the financial mining regulations, is applicable. Lithium income must be divided between taxes and royalties.

²⁸⁶ Original quote: “*Todos los ingresos que vienen del sector minero pagan regalía que es una compensación al territorio dónde se está extrayendo la materia prima, entonces el departamento de Potosí es el departamento que más regalía recibe, va recibir mucho más ahora. Y la zona que también recibe regalías va a ser muy rica. Entonces se puede pensar que el desarrollo local de la zona donde está instalado la planta va ser impresionante.*”

²⁸⁷ Original quote; “*Lo que necesitamos ahora (...) es un ejemplo de equilibrio entre la industrialización, entre las comunidades, entre los movimientos sociales. Ese equilibrio sirve para desarrollar esa industria, pero con esa visión. La visión es de tener mejores días para los bolivianos, de que con ese dinero que ha de ganar esta industria, todos los bolivianos puedan llegar a viejos, a los 80 años, con todos los dientes completos.*”

General tax income is low in Bolivia (also because of inefficiencies in tax collection and enforcement) and has historically been substituted by mining royalties (Held 2013). Also, sharing mechanisms among state levels and participation of different income groups show important shortcomings. General tax obligations in mining include a 25 percent tax on profits (sales price minus cost of production)²⁸⁸ and an added value tax of 13 percent.²⁸⁹ The Morales government, with Law N° 3787 of 2007, implemented an additional profit tax of 12.5 percent, which must be paid in times of high resource prices. The additional profit tax is payable when certain thresholds, which are individually defined for each mineral, are exceeded (Law N° 3787, Art. 102). These thresholds have not yet been specified for lithium and potassium, meaning that the additional profit tax is currently not applicable (interview with Ilse Beltrán, Department Head of the Vice-Ministry of Mining Politics, 19.05.2016). Moreover, companies that are exclusively dedicated to industrialization are partly exempt from this additional tax (Law N° 3787). According to Ilse Beltrán (interview, 19.05.2016), this would mean that those parts of the lithium and potassium project which are only focused on industrialization (such as battery production) would not have to pay the additional tax even if thresholds are defined and met. This obligation would, however, exist for primary products such as lithium carbonate and potassium chloride. In 2016, this aspect was discussed at the ministry and further regulations were being drafted (ibid.).

In the mining sector, tax income has been centralized. It is split between the national treasury for public investments under the supervision of the Ministry of the Economy and Public Finances (Ministerio de Economía y Finanzas Públicas de Bolivia – MEFP) and COMIBOL for investments in mining projects. Thereby, COMIBOL is also instructed to co-finance social programs and bonuses from its budget (interview with H. Córdova, former President of COMIBOL, 21.10.2015). The CPE further guarantees equitable access of all Bolivians to this income with priority treatment of the territories of exploitation and indigenous originary peasant peoples and nations (Art. 353, see below). It also establishes the obligation to reinvest mining profits in the country (Art. 351), specifically in the diversification of the economy (Art. 355). Tax income thus does not directly

²⁸⁸ If international quotas are below prices established by law, the royalty can be accredited against the profit tax.

²⁸⁹ The VAT tax of 13 percent applies to internal transactions based on the value of the product (defined by its international price). If the product is sold abroad, this tax is returned. A private mining entrepreneur I interviewed underlined that these devolutions are an administrative hassle and take a lot of time (interview, 4.11.2015). The public mining company COMIBOL also criticizes the VAT tax system; the VAT castigates national companies that process their goods in the country (for example at the smelter Vinto) and do not sell raw materials abroad (Pimentel Castillo 2016).

benefit the departments or the local producing municipalities (only indirectly, through the general budget).

On the royalty side, the new mining code upholds, depending on the mineral and its international trading qualities, a quota system of one percent to seven percent over gross sales prices (LMyM, Art. 227). Yet, while taxes depend on the profits of a mining operation, royalties need to be paid even when a project accumulates losses. For lithium carbonate, potassium chloride and other derivatives of evaporite resources, the new mining law establishes a royalty of three percent (*ibid.*). When a project involves industrialization, only 60 percent of this royalty applies (LMyM, Art. 224 II). It is, however, not clear how this will affect the lithium project, since the extent of industrialization is not legally defined (see also remarks on the additional mining tax above). Royalties are distributed between Potosí, as the producing department, and the producing municipality. The government of the department receives 85 percent, of which 10 percent need to be invested in prospecting, exploration, and environmental monitoring (LMyM, Art. 229). The producing municipality receives 15 percent (*ibid.*).

Consequently, it is difficult to define the potential extent of royalties and taxes for lithium carbonate and potassium chloride production. Tentative estimates are included in Table 10, which were calculated for a production of 30,000 tons of lithium carbonate and 350,000 tons of potassium chloride.²⁹⁰ Since the applicability of the additional profit tax is not legally defined for lithium carbonate and potassium chloride, this is not included in the example.

Type	Percentage	Income
Royalty	3 % over gross sales prices if 60 % apply	85 % (producing department): 7.27 million USD 15 % (producing municipality): 1.28 million USD 4.36 million USD and 768.000 USD, respectively
Profit Tax	25 % of profits (sales value minus production costs)	49.92 million USD
VAT	13 % of production value at international prices	37.08 million USD

Table 10: Potential Public Revenues in Lithium Project

²⁹⁰ The example was calculated based on a lithium carbonate price of 7,000 USD/ton and a potassium chloride price of 215 USD/ton (see Footnote 285 for further explanation of the used price estimates). Production costs were estimated at 30 percent of sales value. Mining analyst Héctor Córdova (2015) considers production costs in Bolivia between 30 percent and 50 percent of mining sales value.

The producing municipality would only benefit from royalty payments. Based on current estimates of project income, annual municipality payments could amount to between 0.7 and 1.3 million USD (which would, also in the better scenario, account for only 0.45 percent of the sales value). Contrary to the statement from the Ministry of Mining and Metallurgy (see above), this would also be considerably below what the San Cristóbal Mine generates in royalties (over six million USD) and could hardly sustain long-term development of the salar region. Moreover, the current framework continues a benefit sharing strategy that supports, above all, the central government and additionally a very small segment of the local population. In case of the mining project San Cristóbal, immense mining royalties go to a municipality of less than 10,000 inhabitants, while adjoining communities do not receive any funds. Mining analyst Guillermo Cortéz (interview, 4.5.2016), consequently, argues for the necessity of a domestic mining fund that divides income based on proposals for productive projects between different municipalities in the impact area.

The current royalty division between the department and the producing municipality has been cemented with the new mining law, which does not foresee options for additional beneficiaries neither in royalties nor in taxes. A re-negotiated revenue sharing agreement would thus need a specific law. For other large-scale industrialization projects, like the iron-ore deposits in Mutún, such a procedure has been envisioned (Law N° 3790, 24.11.2007, Art. 6). Moreover, in the hydrocarbon sector, the Bolivian government established a distribution scheme with the Direct Hydrocarbon Tax (Impuesto Directo a Hidrocarburos – IDH) that incorporates local communities and regions more comprehensively.²⁹¹ The mining sector has, however, seen regulatory continuities and modifications have been limited particularly in revenue distribution.

At the start of the lithium project, GNRE had different plans and wanted to distribute revenues beyond tax and royalty regulations more widely. When it tried to establish a lithium company in 2010 with Supreme Decree N° 444 (10.3.2010), it also drafted a more elaborated revenue sharing regime (Montenegro Bravo and Montenegro Pinto 2014, 97–98). In this, it proposed that all surplus

²⁹¹ The IDH was introduced in May of 2005 in Hydrocarbon Law N° 3058. With the tax, 32 percent of hydrocarbon income is divided between the departments, the municipal governments, the national treasury, state universities, and the Indigenous Fund (Humphreys, Bebbington, and Bebbington 2010). The IDH was renegotiated in 2008 and now also pays into the minimum pension, mostly to the demise of the prefectural budgets (ibid.). Yet, as authors such as Weisbrot and Sandoval (2008), and Humphreys Bebbington and Bebbington (2010) point out, since the IDH was defined in a time of profound social crisis, the negotiations on the sharing regime were also driven by conflict mediating compromises that led to an overall unjust and confusing distribution system. Nonetheless, municipality and regional participation in gas rents is much more substantive than it is in mining income.

income in the first five years would benefit the company to secure necessary investments. From the sixth year, the plan suggested the following sharing mechanism (ibid.):

Producing municipalities corresponding to the area of production	25 %
Re-investment in the company	23 %
Producing department	20 %
National Treasury	20 %
COMIBOL	10 %
Investigation Center for the Industrialization of the Evaporite Resources of Bolivia	2 %

Table 11: Lithium Revenue Sharing Mechanism Envisioned by GNRE (2010)

This agreement would have allowed local communities a more significant participation in the income from lithium industrialization. The producing municipalities and the department would have participated in nearly half of the revenues. This distribution would also have connected to the vision stated in the previously mentioned Supreme Decree N° 4444, which had declared the integral development of southwestern Potosí (including the provinces Sud LÍpez, Nor LÍpez, Enrique Baldívieso, Antonio Quijarro and Daniel Campos) a national priority, in accordance with the regional development plan and based on the sustainable use of its natural resources. DS N° 444, however, failed because it did not take local and regional sentiments into account and centralized the seat of the EBRE company to La Paz. The subsequent protests from Potosí led to an abandonment of the plan to found an independent lithium company; with it, the proposal of a specific revenue sharing agreement for the project disappeared (Echazú Alvarado 2015, 320–321).

Within the GNRE, there is an understanding that a specific income distribution agreement is still necessary. A GNRE employee outlined in an interview with me (11.10.2015) that:

“there are conflicts around province limits, still silent conflicts, there is no action. All the municipalities around the salar have to be integrated in a royalty system, the communities will demand this from GNRE and COMIBOL, because they are the visible actors.”²⁹²

Yet, while such ideas of a more widespread distribution of rents have been discussed within the GNRE, no concrete steps seeking a specific legislation have been taken. The issue has been postponed, at least until revenue is generated. Consequently, the general mining regulations,

²⁹² Original quote: “Hay conflictos sobre los límites de las provincias, conflictos todavía silenciosos. No hay acciones. Hay que integrar todos los municipios alrededor de salar en el sistema de regalías. Las comunidades van a pedir eso de la GNRE, de COMIBOL, porque son los actores visibles.”

envisioned for and oriented towards private companies are applied to the public lithium project. At the same time, the panorama is complicated further by collective land titles over the Salar de Uyuni which connect to specific land usage rights of indigenous peoples and nations.

6.4.2 Collective Land Claims and Revenue Distribution

Royalties reach the local producing municipality based on the general mining regulations that correspond to the geographic and administrative division of the national territory. As has been outlined in Chapter 5.4.4, this republican administrative jurisdiction is partly superposed with collective land titles based on claims by indigenous and original peoples and nations. In the salar area, different communities have successfully validated collective land claims since this was first enabled in 1996 by the INRA law. One important example is the previously mentioned TIOC “Central Única Provincial de Comunidades Originarias de Nor Lípez”, which the FRUTCAS affiliated regional peasant union successfully demanded over large parts of the Salar de Uyuni.

In reference to the lithium project, it is important to highlight that collective titles as Original Communal Lands (TCO), Indigenous Original Peoples’ Peasant Territories (TIOC), or Indigenous Autonomies (AIOC) do not grant direct rights to the subsoil and for the exploitation of nonrenewable resources to the claimants.²⁹³ Indigenous and original people have the right to the exclusive exploitation of renewable resources (CPE, Art. 30 and 403), participation in the benefits of nonrenewable natural resources (CPE, Art. 30 and 403; LMyM Art. 19), and to prior and informed consultation (CPE, Art. 30, 304 and 403; see also Chapter 0). The participation in the benefits of nonrenewable resources is defined in the mining law as priority consideration in the

²⁹³ The CPE (Art. 348 II) declares all natural resources to be strategic and of public interest. Hydrocarbon resources are a privative competence of the government (Art. 298, XVIII); it cannot delegate control to other entities such as TIOC or AIOC (CPE, Art. 297 I). Other strategic resources, namely minerals, the electromagnetic spectrum, genetic and biogenetic resources, as well as water resources are an exclusive competence of the central state level. The central government would have to delegate these competences to other state entities or recognized autonomies (CPE, Art. 297 II), which appears politically unlikely. Moreover, when resources are exploited in a fiscal reserve, such as is the case for lithium, the Constitution establishes that all other land rights granted are null and void, “except by express authorization for state necessity and public utility, in accordance with the law” (CPE, Art. 350).²⁹³ In a fiscal reserve, COMIBOL holds mining rights. In the case of lithium and potassium, it cannot delegate responsibility, as the chemical processing must be developed completely by the central state level (LMyM, Art. 73 IV; see Chapter 4.4). Shared competences with TIOC or AIOC only exist for the use of renewable and traditional resources (CPE, Art. 30, 311 and 403). Similarly, Article 87 of the Framework Law of Autonomies and Decentralization (Law N° 031 of 19.07.2010) establishes that the central level has the exclusive (yet not the privative) competence to use and charge for the use of resources and to create and administer fiscal reserves. Rights of recognized autonomies are confined to the productive use of land, valleys and forest resources (while abiding by the laws established by the central level).

budget of the producing department, which receives 85 percent of royalties (LMyM, Art. 229 I and II). It thus does not signify direct monetary participation of these indigenous peoples and nations in a mining project for nonrenewable resources (such as lithium) on their territories. Yet, although this is the case, the legal confusions around TCO / TIOC statuses and the consultation rights granted by the Constitution could lead to demands regarding the lithium project, since TIOC stretch over large parts of the Salar de Uyuni and the Salar de Coipasa. Already, in the process of recognizing the TIOC claim of Nor Lípez, the INRA identified a superposition of the demanded TIOC with 16 percent of the fiscal reserve on the Salar de Uyuni (Gysler 2011, 123).

For its flagship project, GNRE has consequently sought further legal clarity. In the founding document for the TIOC in Nor Lípez (Presidential Resolution 5009 of 20.1.2011, attachment to Taucer and Anze (2013)) about 16,000 hectares of the demanded land were declared “strategic areas of public interest” and another nearly 8,000 hectares were specifically excluded from the TIOC as “non-disposable fiscal area” to establish lithium and potash industrialization. This, in consequence, means that participation rights and benefit shares established for a TIOC are not effective and that no other collective actor can claim rights to the area or establish a TIOC in the fiscal reserve. This and previously established reserves over the Salar de Uyuni and surrounding areas (catering to private economic interests, see Chapter 5.3) can be considered a major alternation of property rights institutions disfavoring local communities.

6.4.3 Employment and Infrastructure

Next to direct monetary benefits, local demands about the lithium project also center on the question of employment and infrastructure to enable productive projects in the region. Without a doubt, the lithium and potassium initiative has already had socioeconomic impacts on the communities. This can be seen particularly through the creation of direct employment on the plants and indirect employment through backward linkages, such as service demands, infrastructural improvements, and investments in the region. These impacts are likely to increase when industrial production starts. For former head of COMIBOL, Héctor Córdova (interview, 21.10.2015), who naturally has a very positive viewpoint on the project, the employment mechanism will signify an important social impact for the salar region. Similarly, the environmental impact study qualifies the positive effect for the region through employment as moderate to high (Taucer and Anze 2013, chap. 6, 14-15). By 2019, the GNRE estimates 1,000 direct and 4,000 indirect positions in the

project (Montenegro Bravo and Montenegro Pinto 2014, 95).²⁹⁴ In 2015, the project employed 376 people directly at the different plants and at headquarters in La Paz (GNRE 2016b, 126).

Employment opportunities include both technical positions with high qualification requirements and low-skilled positions, especially in the fields of transportation and service provision (Calla Ortega 2014, 57–58). According to the head of the Llipi plant, salaries are at the national average and above (interview with M. Castro, 12.11.2015). The direct socioeconomic impact of the plant is visible in Rio Grande, where most of the local population is directly involved in the provision of services for the GNRE and the companies that work for the lithium organization. As has been outlined before, Rio Grande has established itself as a service and housing hub for the GNRE, with two lorry companies that provide transportation services, two larger hotels, and several restaurants. Rio Grande also draws people from other areas who want to profit from employment opportunities, particularly as lorry drivers (interview with H. Alvarez, engineer working in Rio Grande, 25.4.2016). In other communities farther away, however, these positive impacts are not yet noticeable. In all localities I visited outside of Rio Grande, respondents told me that hardly anybody from their community was working at the plants. The environmental study equally underlines that employment through service provision and indirect stimuli on commerce will be minor and localized considering the lack of transport and the rather closed environment of the production complex (Taucer and Anze 2013, 7).

The GNRE governance strategy in the employment sector focuses primarily on the national dimension of lithium industrialization and, secondarily, on the integration of local demands. Jobs at the GNRE pilot plants, currently some 270, are filled through national tenders giving equal opportunities to all Bolivian citizens based on merit without local prioritization (interview with R. Martínez, GNRE community services, 12.11.2015). Considering that technical jobs generally require a university education, most employees come from the urban areas and university cities such as La Paz, Potosí, and Oruro as well as from Cochabamba and Santa Cruz (ibid.). Yet, according to the technical officer Richard Apaza from the mining authority in Potosí (interview, 17.11.2015), the

²⁹⁴ Raúl Martínez, GNRE community services, estimates that with industrial production, staff on the plant will surpass 2,000 people (interview, 12.11.2015). The German consultancy ERCOSPLAN calculates that 500 positions will be created on the industrial potassium plant. Of these 500 employees, 250 would be engineers and technical staff and 250 service providers (Paredes 2013). There will also be employees at the potassium plant and the battery plant.

possibility of obtaining a job on the plant also motivates people from the communities to take up technical education in Potosí or elsewhere.

Nonetheless, most local jobs are created in service provision, currently particularly as drivers. In this sector, a certain priority is given to local communities, with a clear focus on the direct vicinity of the plant, especially Rio Grande (Taucer and Anze 2013, chap. 2). Raúl Martínez, from the GNRE (interview, 12.11.2015), emphasized that for all services the company requires, open tenders are published in which local communities have priority. However, he admits that it is not always easy for these communities to access the internet, inform themselves about the requirements, and comply with them. To convey information on open tenders, GNRE used to have a local radio program, which, however, was not functional in 2016 (*ibid.*). Community education and training programs of the GNRE focus on qualification of local school teachers and the support of different trades in the communities, mostly connected to tourism services and agriculture (*ibid.*; GNRE 2014, 79–84), while, as some of my interview partners highlighted, there are no qualification initiatives for the local communities to access jobs on the plant (interviews with M. Lérica, Llica, 9.10.2015; and M. Belén, Colcha “K”, 27.4.2016).²⁹⁵

Another point that deserves reflection is the impact on local infrastructure. In the direct vicinity of the project, infrastructural improvements are notable due to the connection of the camp with water, gas, and electricity and the extension of the cellphone signal. Rio Grande, for example, profited from connection to the local water grid as a result of project implementation and both Salinas de Garcí Mendoza and Rio Grande benefit from better mobile phone signal as new antennas were set up for the project (GNRE 2011). Jhonny Llally from the Civic Committee of Potosí underlined that power cuts have decreased in the area due to increased electrical capacity (interview, 17.5.2016). Moreover, the transport of the materials will necessitate the expansion of train and road connections between Uyuni and the Chilean border. The cargo train that currently runs once a week has a passenger car and the extension of service times could benefit the local population. Within the general road plan, a paved road has been constructed from Uyuni to Potosí and further roads have been extended and improved, which can partly be linked to mining interests in the area (Montenegro Bravo and Montenegro Pinto 2014, 98). Furthermore, local communities profit from the social services provided by the company. Services include health programs, support of local events,

²⁹⁵ In the municipality of Llica there is a private citizen initiative to start a Bolivian Lithium University headquartered in Llica to educate locals in the relevant technical and scientific skills for lithium exploitation (Lérica 2015).

assistance in garbage management, and local electrical connections (interview with R. Martínez, GNRE community services, 12.11.2015).

6.4.4 Socioeconomic and Cultural Externalities

When reviewing the socioeconomic governance strategy for the lithium project, the focus is clearly placed on the positive impacts and incentives the project could bring for the region. At the same time, it is important to highlight that case studies on lithium exploitation identified socioeconomic and cultural externalities to be a critical issue (Anlauf 2014; Göbel 2013b; Puente and Argento 2015; Ströbele-Gregor 2012). Based on data from the Argentinean case, Göbel (2013b) warns against impacts of industrial lithium exploitation on traditional economic activities such as agriculture and tourism as well as local ways of life. Economic models of the local communities often depend to a very high degree on the natural environment and the availability of water. Lithium industrialization, it is argued, could enter in a competition over these resources with other local activities. Moreover, the relationship between the indigenous population and the local environment is characterized by a historically grown and culturally defined special relationship that could be disturbed by large industrialization initiatives. Also, the above outlined aspects of land titling for the lithium project could be considered a cultural impact in the region.

Socioeconomic and cultural externalities of the project are a minor focus of the EEIA (Taucer and Anze 2013, chaps. 6–7) discussed at length in the following chapter. While these aspects are evaluated as mostly positive, referring to the outlined creation of work and financial benefits as well as improvements in infrastructure, conflict potential is identified in resource distribution. The study underlines that conflicts of interest could emerge particularly over access to water, which is needed for the project as well as other local subsistence activities. Furthermore, potential risks are specified for the archeological heritage which could be affected by the increasing transport and movement of resources (Taucer and Anze 2013, chap. 7). The identified risk is later evaluated as minor, since most activities are carried out on the Salar de Uyuni itself (*ibid.*).

The proposed management instruments of the government envision permanent communication channels with communal leadership to resolve differences and inform about the project. Moreover, regular communication events in the area are foreseen to discuss and resolve potential problems and conflicts of interest between the project and community activities (compare Chapter 0).

6.4.5 Summary of Findings: Benefit Governance

Important impacts for the larger region relate to the distribution of monetary income from the plants. In this aspect, the GNRE has opted for a centralized management of revenues, prioritizing the national treasury over local monetary redistribution. No specific revenue-sharing mechanism has been established, although the initial goal was to strengthen local development. Hence, general mining regulations that favor the central government over local actors apply. Moreover, indigenous and original peoples do not participate to an elevated extent in rent distribution of lithium and potash industrialization. Existing power imbalances are cemented by the conservation of the fiscal reserve on the Salar de Uyuni which impedes further collective territorial claims of these communities on the project area. Through centralization, lithium and potassium revenues could potentially serve as a substitute for falling central government income from other natural resources, such as gas and traditional minerals. Also, centralized management provides the government with more leeway to support national social programs and, potentially, long-term economic diversification. At the same time, direct participation of local municipalities is less than one percent of potential revenues. Thus, while project income is potentially important and could open economic possibilities at the macro level, the current distribution of revenues and other benefits is not likely to generate large socioeconomic potentials and fulfill expectations at the micro level. At the same time, potentially negative socioeconomic and cultural impacts have not received much government attention and could further limit local benefits from lithium and potassium industrialization, creating both economic and livelihood grievances.

6.5 Environmental Impact Assessment and Externality Management

6.5.1 Potential Environmental Impacts of Lithium and Potassium Industrialization

An industrialization initiative of the scale of the lithium and potassium project will have impacts on the area of extraction, some positive and others negative. Negative impacts or externalities can affect, for example, the environment, socioeconomic strategies, cultural traditions, or the health of local inhabitants. Through preservation and mitigation measures, these impacts can be reduced but not completely offset. The focus of the present chapter will be on the environmental dimensions, outlining first different potential environmental challenges of lithium exploitation and then, in a second step, discussing environmental governance in the lithium project.

The Salar de Uyuni is a widely untouched natural ecosystem. The delta of the Rio Grande river, where the lithium project will be implemented, and the surrounding lagoons have been categorized by Conservation International as one of 34 biodiversity hotspots worldwide (Hollender and Shultz 2010, 41). The Salar de Uyuni is also a UNESCO world nature site²⁹⁶ (Göbel 2013b), its watershed is protected under the RAMSAR Convention for the conservation of wetlands (Hollender and Shultz 2010, 41), and the area is home to various rare and protected species (Dames & Moore Norge 2000, chap. 3).²⁹⁷

The GNRE conducted a study called “Analytical Integrated Evaluation of the Environmental Impact” (EEIA) for the project and came to the conclusion that negative externalities are of minor concern and manageable (Taucer and Anze 2013). At the same time, particularly non-government sources are critical of potential impacts and the evaluation of the GNRE. It is repeatedly sustained that the knowledge of the salar ecosystem as such is deficient (Dames & Moore Norge 2000, 4–5; Taucer and Anze 2013, chap. 4), limiting the potential to understand future impacts of lithium and potassium industrialization.²⁹⁸ Keeping these challenges in mind, three environmental dimensions of the program have been both raised in the EEIA and were a concerns in my interviews and in secondary sources, namely (I) water sources and water use, (II) contamination and waste, and (III) visual impediments.

²⁹⁶ Yet, the Salar de Uyuni is not a protected area under Bolivia national or departmental legislation (Lérida Aguirre and Muruchi Poma 2013). Close to the Salar de Uyuni are several national parks such as the National Park Sajama and National Fauna Reserve Eduardo Avaroa and Laguna Colorada.

²⁹⁷ These include the endemic Andean flamingo, as well as the highly endangered *suri*. The Andean flamingo (*Phoenicoparrus andinus*) is the rarest flamingo species worldwide and considered vulnerable due to changes in its habitat (The IUCN Red List of Endangered Species 2016). The *suri* (*Rhea pennata*) is a large flightless bird, which is smaller than the other two existing rhea species. In Bolivia, it is in danger of extinction due to hunting, egg collection, and changes in habitat (Conservation International Bolivia 2009a). Other animals in the area include various mammals such as wild donkeys, the Andean fox, the Andean skunk, the viscacha rabbit as well as several species of batrachian, frogs and lizards. The Andean puma and the highly endangered wild cat titi use the area as hunting ground (Taucer and Anze 2013, chap. 4). The camelide *vicuña* (*Vicugna vicugna*), native to the Andean region, is frequent in the area. The *vicuña* population was highly endangered in the 1960s but has recovered. Conservation activities, however, persist (Conservation International Bolivia 2009b).

²⁹⁸ Augstburger (2013), who developed future scenarios for the lithium project based on 30 expert interviews with the government and non-governmental organizations, found that 70 percent of the participating experts consider the knowledge of the ecosystem unsatisfactory. 95 percent further believe that the existing knowledge is insufficient to predict and mitigate potential environmental impacts. Considering the small number of experts interviewed and the non-disclosure of the experts' positions, these findings can, however, only be seen as an indication.

Water Sources and Water Use

The highland saline lake region is characterized by low average temperatures and semi-arid to arid climate. Rain season is between November and March, while the rest of the year the climate is characterized by strong winds and hardly any rainfall. Consequently, water resources are a central regional concern and an important preoccupation in lithium exploitation (Anlauf 2015, 174). Hydrological data on the basin of the Salar de Uyuni is limited (Dames & Moore Norge 2000, chap. 3). In the area, there are two major water sources: subterranean water deposits which, depending on soil conditions, are either salty or sweet, and sweet water springs, which partially refill during the rainy season (Taucer and Anze 2013, chap. 4). The most important rivers are the Río Grande de Lípez and the Río Quetena. The Río Grande, which is fed by subterranean water sources, and all the lagoons are salty and not suitable for human consumption or use in agriculture (ibid.). Subterranean waters, however, provide the moisture for the ecosystem to function and support the creation of fenlands, which serve as wildlife habitats (ibid.). The spring water deposits Silala at the Chilean border are the most important source of sweet water.

Average annual rainfall is a marginal 166 mm in Uyuni, which supports only a weak and occasional refill of subterranean water resources (Molina Carpio 2007, 22). Consequently, these waters are considered fossil water deposits, meaning that they have taken thousands of years to form and are non-renewable in the short run (Dames & Moore Norge 2000, chap. 3; Molina Carpio 2007, 33–34). Dames and Moore Norge (2000, chap. 3) further sustain that subterranean water flows are slow and that phreatic water in the region is possibly shallow. The necessary water for the lithium project will be provided by the San Gerónimo spring (sweet water) and the Río Grande (salty water) (Taucer and Anze 2013, chap. 4).

Data on water consumption of the plants is limited. The GNRE (2012, 95) estimates combined monthly water use for lithium and potash industrialization at 7,000 m³ for pilot and 420,000 m³ for industrial production.²⁹⁹ The scientific basis for this calculation is not published, but a potassium expert from the German consultancy ERCOSPLAN, which designed the industrial potash plant, considers this a realistic estimation (interview, 2.3.2016). Part of the water for the production

²⁹⁹ During pilot production, this means 5,250 m³ for production processes and 1,750 m³ for human consumption and during industrial production, 315,000 m³ for industrial processes and 105,000 m³ for human consumption. According to Ströbele-Gregor (2015, 36), these estimations are from 2008.

processes will be salty water not used for agriculture or human consumption.³⁰⁰ Yet, as Anlauf (2015, 174–75) underlines, the use of great quantities of brine has a direct impact on the phreatic water and the hydrological balance and thus will affect the availability of sweet water resources. The brine under the salt crust, because of its higher density, is generally suppressed by sweet water which is closer to the surface. Hence, if high quantities of brine are extracted, not only will the brine level decrease but sweet water resources will be lowered as well (ibid.).³⁰¹

To what extent the water and brine use will impact ground water levels is contested. The EEIA estimates brine use in the project at 1,000 liters per second but accentuates that the pumping of the brine will not affect the quality of superficial or subterranean water sources (Taucer and Anze 2013, chap. 6, 11).³⁰² Moreover, while the EEIA recognizes a “considerable level in the diminishment of the availability of superficial water, since a great part will be directed to the works that will be carried out” (ibid., chap. 7, 11),³⁰³ this risk is later evaluated as minor and not further mentioned among the significant impacts. The EEIA likewise does not find impacts on subterranean water sources due to the shallow nature of the excavations that do not affect the groundwater zone (ibid., chap. 7, 12). The assessment identifies two aspects of water usage as having potentially significant negative impacts; possible changes in subterranean water quality through sediments from construction or inadequate disposal of grey industrial water. These impacts would be manageable with suitable mitigation technologies (ibid., chap. 7).

Other sources warn against more dramatic effects on water availability and the ecosystem as such, mostly referring to experiences from other lithium exploiting sites. Studies by Ströbele-Gregor (2012, 55, 2014, 142) outlined that lithium exploitation in an extremely arid environment in Chile showed significant impacts on natural habitats. There, the water use of the lithium industry led to

³⁰⁰ There is only insufficient data on this. The GNRE (2015b) states that sweet water is substituted to a maximum extent by salty water, while Montenegro Bravo and Montenegro Pinto (2014, 105) confirm that it is difficult to estimate which percentage will be salty and which sweet water. The only data available is from a GNRE report, which estimates sweet water use for the pilot phase at 318 m³ (GNRE 2013, 47). This seems little, as it would mean that 95 percent of water used (including water for human consumption) could be salty water.

³⁰¹ Anlauf (2015, 173) explains that the brine below the salt crust is fed by the subterranean waters. Sweet water layers exist between the salt crust and the brine, especially on the margins of the salar. Because of its higher density, the brine is compressed below the sweet water, while the sweet water is drawn upwards by the vegetation in the area. If high quantities of brine are pumped upwards, this will both lower brine and depress sweet water levels.

³⁰² Montenegro Bravo and Montenegro Pinto (2014, 106) estimate a combined need of 26 million m³ of brine to produce 30,000 tons of lithium carbonate and 700,000 tons of potassium chloride. According to them, this only represents 0.014 percent of the total brine in the Salar de Uyuni and consequently signifies a minor impact.

³⁰³ Original quote: “Existirá un nivel considerable en la disminución de la disponibilidad de aguas superficiales, considerando que una gran parte irá dirigida a las obras que se realizarán.”

a lowering of ground water levels as well as degradation and drying up of highland lakes which produced negative effects on flora and fauna (ibid). The environmental impact study of the lithium project in the Salar de Cauchari in Argentina concluded that the extraction of brine and the use of subterranean water will mean “impacts of severe character” and an irreversible and permanent diminishment of the brine and water resources in the region (quoted in Anlauf, 177). Hollender and Shultz (2010, 41) underline that water contamination is a challenging issue in the lithium project in the Salar del Hombre Muerto in Argentina. Furthermore, the cited studies also highlight potential conflicts of interest between the industrial water use and water needs of the local population for agriculture, herding, and personal consumption.

For the Bolivian case, it must be considered that the water use of the lithium and potash plants would add to already existing industrial water needs in the region, particularly the water consumption of the San Cristóbal mine. The largest Bolivian mine is located in the vicinity of the project, and has an estimated monthly water consumption of 1,380,000 m³ (GNRE 2012, 96). As the head of the pilot plants, M. Castro (interview, 12.11.2015), put it:

“When talking about industrial water, the San Cristóbal mine that uses 500 liters of water per second has to be taken as a reference. If it uses [water] this way, it is a great reference for what other companies could use. Logically the use [for lithium and potassium industrialization] is **much** lower, approximately below 20 percent of what they use.³⁰⁴”

This repeatedly used argument of a comparably lower water use of the lithium project (also in interviews with G. Roelants, 20.5.2016; J. C. Montenegro, 5.11.2015) is, however, misleading. The non-reclaimable water resources in the region are already being drained by different mining operations and large-scale tourism, so that an additional project with an added water need of this magnitude would only aggravate existing water problems and impact on the phreatic water level.

In summary, it can be said that the project will, with a high probability, affect water availability and water quality. These impacts are, however, not fully investigated. There is both a need for hydrologic

³⁰⁴ Original quote: “Cuando uno habla de agua industrial, tiene que tomarse como referencia la minera San Cristóbal que utiliza 500 litros de agua por segundo. Si utiliza así, es una gran referencia de lo que otras empresas podrían usar. Lógicamente el uso es **mucho más** bajo, aproximadamente menos del 20 percent de lo que ellos usan.” Words emphasized by the speaker are in bold. This data does not add up with the official water statistics published by GNRE. 20 percent of the San Cristóbal water consumption would mean 276,000 m³, while GNRE officially estimates 420,000 m³ (GNRE 2012, 95). Former head of the GNRE Scientific Committee G. Roelants (interview, 20.5.2016) estimates the water use at only 10 percent compared with San Cristóbal, while the German geologists Merkel and Sieland (cited in Anlauf 2015) assume 35 percent to be more realistic.

or geochemical pre-examinations that could convincingly assess water risks and independent studies of the potential impacts on water.³⁰⁵

Contamination and Waste

Contamination from the lithium project could emerge from at least three different sources; the production process itself, the workers and their residuals, and the increase in transport and heavy machinery that supports the creation of dust and produces exhaust gas pollution. The EEIA recognizes the three dimensions of waste production and considers atmospheric pollution through exhaust gas and land contamination with chemicals to have potentially significant risks (Taucer and Anze 2013, chap. 7). Nevertheless, with an adequate treatment plan, these risks are manageable (ibid.). GNRE has established a mitigation strategy which engages with the reduction of daily waste from the workers, the adequate disposal of chemicals, and the measuring of pollution limits (Taucer and Anze 2013, chap. 8; GNRE 2015a, 33 et seqq.; GNRE 2016a, 57 et seqq.).

The most widely debated aspect of contamination is the waste generated by the production process itself. Waste of brine evaporation is mostly salt from the construction of the industrial pools and the residuals that remain in the pools after lithium and potash are harvested. The waste only generates an environmental danger when the brine is enriched with toxic substances in the production process (interview with R. Anze, Simbiosis, 6.5.2016). Thus, a detailed knowledge of the industrial process is important for an impact assessment. As has been outlined in Chapter 5.1, the GNRE methods of lithium carbonate production are not fully transparent. For a long time, GNRE experimented with an adaptation of the traditional technology to deal with the high magnesium content through lime washing, which produces magnesium hydroxide waste that, as some scholars claim, severely impacts flora and fauna (Calla Ortega 2014, 29; Jaime Claros cited in Ströbele-Gregor 2015, 159; Interview with C. Arze, 26.10.2015), while others consider it at least potentially dangerous for water sources (interview with R. Carvajal, UMSA chemistry professor, 4.5.2016). Calla Ortega (ibid.) warns that magnesium hydroxide could cause an increase of the pH-

³⁰⁵ A hydrogeological examination of the Salar de Uyuni was proposed by Dames and Moore Norge (2000), in the EEIA (Taucer and Anze 2013, chap. 2, 69-70), by GNRE head scholar J. C. Montenegro (interview, 5.11.2015), and was promised by the GNRE in the public consultation (Taucer and Anze 2013, Appendix) but has not been conducted to the knowledge of the author. In 2000, the Vice-Ministry of Mining and Metallurgy had commissioned an Environmental Base Line Study for the salares of Uyuni and Coipasa which was, however, limited in its scope by the shortage of data, particularly on water sources in the area (Dames & Moore Norge 2000).

value which could impact vegetation coverage as well as agricultural production. Other experts do not see significant environmental dangers from the introduction of lime to the process (interviews with e. g. E. Kaps, ERCOSPLAN, 2.3.2016; G. Roelants, former head of the GNRE Scientific Committee, 20.5.2016; J. Zapata, chemistry professor at the UMSA, 5.11.2015). Yet, massive quantities of lime would be needed for such a process which would, independent of the question of toxicity, increase waste quantities and create an additional waste storage problem.

The waste discussion escalated over the already mentioned publication by CEDLA which warned, based on data from the GNRE, against an annual generation of 1.46 million tons of salt waste (Montenegro Bravo and Montenegro Pinto 2014, 94; Calla Ortega 2014, 29). The GNRE later sustained that the numbers were published out of context, since lime processing is no longer used (Echazú Alvarado 2014). According to the GNRE, it is opted for a process developed by Bolivian scientists who obtain lithium sulfate and transform it into lithium carbonate (*ibid.*). This process was also mentioned in the CEDLA publication by UMSA scholars Montenegro Bravo³⁰⁶ and Montenegro Pinto (2014, 101 *et seqq.*), who estimated that this procedure could support a considerable waste reduction from 4,000 tons to 200 tons daily. Nonetheless, it is difficult to estimate how contaminating this new procedure is, since scientists disagree and concrete data is lacking. The EEIA was, in any case, based on a different production process.

As has been previously discussed, most residuals of the production process are in themselves commodities such as potassium sulfate, magnesium chloride, and boric acid that could be commercialized (see Chapter 5.1.3). The GNRE wants to industrialize these products but it can be expected that these additional tasks and the construction of further industries in the region will be time consuming, costly, and could also constitute additional environmental risks, so that in the short to medium term not all residuals will become secondary products but rather remain waste to be disposed.

Other aspects to consider include contamination through the additional industrialization of site products, and traffic intensification (Ströbele-Gregor 2015, 159–160). According to Tahil (2008), to produce one unit of lithium carbonate in the Salar de Atacama, nearly five times the weight in materials has to be transported to the plant over considerable distances, thereby intensifying traffic

³⁰⁶ In March of 2017, UMSA professor Juan Carlos Montenegro was promoted manager of GNRE/YBL.

and CO₂ emissions. The EEIA estimates a monthly consumption of 10,000 liters of gas, 50,000 liters of diesel, and 1,000 tons of chemicals only for potassium chloride production (Taucer and Anze 2013, chap. 2). Data is also available for the industrial pool construction for the potassium project. For a construction period of three years, gasoline consumption for the transport of material with trucks is estimated to be 6.4 million liters (*ibid.*). This increase in vehicle use affects the atmosphere through exhaust gas pollution and, in the dry regions, generates dust that distresses the ecosystem (Ströbele-Gregor 2015, 142–143). Transport intensity is thereby also correlated with the amount of waste produced (toxic or not), as the salt residuals need to be transported within or beyond the Salar de Uyuni (interview with G. Roelants, former head of the GNRE Scientific Committee, 20.5.2016).

Space and Visual Impediments

Another point in the externality debate is that the industrial exploitation sites and the evaporation pools use considerable space. After the areas with the highest lithium concentration have been exploited, as it is already visible in Chile, resources could be extracted from much larger areas with diminishing returns. Considering that lithium in Bolivia is spread out over a larger surface than in Chile and Argentina, a greater area could be affected by industrial exploitation. Moreover, evaporation rates in Bolivia are lower, which is why analyst Jorge Espinoza (2009) believes that the evaporation pools must be shallower and, consequently, larger which might change the panorama of the Salar de Uyuni. According to the very critical assessment by Tahlil (2008, 47), such a large-scale industrialization could produce significant environmental damages, resulting in an actual destruction of the Salar de Uyuni.³⁰⁷

Such a scenario seems, at least in the initial projection of the program, unlikely. Montenegro Bravo and Montenegro Pinto (2014, 106), UMSA scientists close to the government project, estimate total area use at 1,800 hectares for the initiative, while the GNRE (2015c, 25) projects 2,630 hectares (one hectare equals one soccer field).³⁰⁸ While this is a considerable extension, it also needs to be

³⁰⁷ A policy officer of the mining ministry underscored in an interview with me (20.4.2016) that this would only be natural since the salar, just like the Cerro Rico, is a mineralogical deposit. He believes that the “romanticism” with which Bolivians relate to the Salar de Uyuni is not rational, as the destiny of such a deposit is to be exploited. The mineral resources there are a value and it is inevitable to destroy the salar to use its value for human development.

³⁰⁸ No coherent data has been published. According to the GNRE annual report for 2014, industrial pools are planned to be 2,630 hectares, while up to 2015, 508 hectares have been constructed (GNRE 2016a, 22). The industrial potassium plant will use 313 hectares (Taucer and Anze 2013, chaps. 2–3), and the industrial pools for

evaluated in relation to the overall extension of the Salar de Uyuni with about 10,000 km² or one million hectares.

Other considerations are visual impacts, particularly through the salt waste and the constructions on the Salar de Uyuni (Ströbele-Gregor 2012). David Clemente (UATF, interview, 15.5.2016) underlined that not because of toxicity but because of the important volume, it will not be possible to reintroduce the salt waste in the salar. Rather, the waste will need to be stored in large columns close to the production site. While a visual impediment on the tourism destination Salar de Uyuni can hardly be negated, the overall size of the salt flat compared to the size of the plants and processing areas and the fact that tourism routes do not pass by the industrial site should be considered. A GNRE staffer even believes that the industrial pools could become an additional tourist destination (interview with R. Martinez, GNRE community relations, 12.11.2015).

In general, it can be said that the spatial dimension and the visual impediments are less concerning externalities. Water and contamination are, however, serious aspects that need a thorough evaluation through scientific pre-studies, a comprehensive environmental assessment, and a detailed mitigation plan. A functioning environmental governance strategy is a prerequisite for such a plan.

6.5.2 Government Strategy of Impact Assessment and Mitigation

The MAS government developed different instruments of environmental assessment for the lithium and potassium project. Legally, the public administration is bound to a comprehensive framework for environmental protection in mining. The Constitution of 2009 guarantees every inhabitant the right to a healthy environment and establishes that every person can execute legal action in the defense of the environment (Art. 33–34). It further mandates the sustainable use of natural resources protecting the environment (Art. 342) and the participation of the affected population in environmental management (Art. 343), which is implemented through a non-binding public consultation (compare Chapter 0). The mining law (Art. 5) stipulates that mining operations need to be carried out in the framework of the Constitution and the Framework Law on Mother Earth

potassium industrialization were estimated at 776 hectares in 2013 (ibid., 30). It does, however, not make sense to separate lithium and potash pools as they depend on the same line of production.

and the Integral Development to Live Well (Law N° 300, of 15.10.2012).³⁰⁹ Article 6h of the mining law further underlines that environmental protection is an obligation in every mining activity and that the respective environmental regulations are applicable. These environmental regulations include the Law on the Environment (Ley de Medio Ambiente – LMA, Law N° 1333, 27.4.1992) and its corresponding secondary Regulations on Environmental Management (Reglamento General de Gestión Ambiental, 8.12.1995) and Environmental Prevention and Control (Reglamento de Prevención y Control Ambiental, 8.12.1995) as well as the specific environmental guidelines in the mining sector, also known as the Environmental Statute for Mining Activities (Reglamento Ambiental para Actividades Mineras – RAAM, implemented by Supreme Decree N° 24782, 31.07.1997).

These basic environmental regulations were implemented under Morales' predecessors and have not been significantly modified. In general, the enforcement of environmental regulations is frequently rated insufficient in Bolivia (Bertelsmann Stiftung 2016, 20–21; Hollender and Shultz 2010, 6; Robb, Moran, Thom, and Coburn 2015, 16 et seqq. Ströbele-Gregor 2012, 46 et seqq.). Mining professor Carlos Sandy, for example, criticizes the 1992 environmental law as outdated and precarious (interview, 9.11.2015). In a comprehensive study on indigenous governance in Bolivian mining (Robb, Moran, Thom, and Coburn 2015), the majority of experts interviewed were of the opinion that the MAS does not enforce existing environmental regulations. This is also true for public mining projects, for which the environmental legislation is hardly applied consistently (Bertelsmann Stiftung 2016, 20–21). Furthermore, the new mining law has watered down the prevailing environmental protection framework for mining, particularly by redirecting the responsibility for environmental oversight in mining projects from the Ministry of Environment and Water to the Ministry of Mining and Metallurgy (LMyM, Art. 222)³¹⁰ (see Chapter 4.4). As will be pointed out in the following analysis, the shortcomings and vagueness of the existing legal framework for environmental protection also impact the environmental governance in the lithium project.

³⁰⁹ The first Law on the Rights of Mother Earth (Law N° 071 of 21.12.2010) was further enhanced by the more comprehensive Law N° 300 of 15.10.2012. The laws establish that mother earth is a legal subject with confirmed rights and that people, collectives, or institutions can claim these rights for mother earth in economic projects, for example. As Ströbele-Gregor (2012, 2015) outlines, the underlying regulations are, however, insufficient and it is particularly unclear how far this law applies to strategic resources such as lithium and potassium.

³¹⁰ Oscar Choque (interview 23.9.2015) from the German-Bolivian NGO Ayni that engages with the socio-economic and environmental impacts of lithium industrialization links this change to the government idea of a de-bureaucratization of the environmental impact assessment, so that in time of high resource prices mining projects can be implemented faster, without time-consuming environmental rigor.

The most important legal obligation of the GNRE is to assess, identify, and mitigate potential environmental impacts of its initiatives. The 1992 environmental law establishes that all public and private activities need to be categorized (LMA, Art. 25). Based on the categorization, there are different processes to evaluate environmental risks before the investment phase begins. In larger initiatives, such as the lithium project, this generally includes the obligation to conduct an environmental impact study EEIA as a basis for the obtainment of an environmental license. Environmental licenses are awarded by the Competent Environmental Authority at the National Level (Autoridad Ambiental Competente a Nivel Nacional – AACN), which is the Vice-Ministry of the Environment and Climate Changes (Viceministerio de Medio Ambiente y Cambios Climáticos) (Taucer and Anze 2013, chap. 3). The environmental license needs to be obtained before project activities are initiated (LMA, Art. 25, 26).³¹¹

The government applied different legal instruments to obtain the necessary environmental licensing for the lithium and potassium project. In 2009, COMIBOL first registered the “Project for the Integral Development of the Brine of the Salar de Uyuni – Exploration – Pilot Plant” with the departmental authorities (Corporación Minera de Bolivia 2009). This pilot project was classified as a “Minor Mining Activity with Known and Non-Significant Environmental Impacts” (Actividad Minera Menor con Impactos Ambientales Conocidos no Significativos – AMIAC) in the preliminary timeframe August 2008 to December 2013. For an AMIAC there is no need for an environmental impact categorization and a full-scale impact assessment; it is sufficient to process a form called EMAP (RAAM, Art. 72, 92 et seqq. and 118).

³¹¹ The process is specified in Taucer and Anze (2013, chap. 3). Every state and private mining project, beyond an explorative initiative, needs to apply for a called Environmental Token (Ficha Ambiental) based on an initial evaluation by the implementing institution, in this case the GNRE. This assessment is presented to the superior environmental agency, in this case the Unit for Environment of the Vice-Ministry of Mining and Metallurgy. This unit evaluates the project and conducts a report for the General Directory of Environment and Climate Change (Dirección General de Medio Ambiente y Cambios Climáticos) of the Ministry of the Environment and Water. Based on their technical assessment, the project receives the token with the category that defines the kind of environmental impact study necessary. This categorization ranges from large-scale industrial projects (Category 1), for which a full EEIA is necessary, to small projects (Category 5), for which no form of EEIA is obligatory. An EEIA thereby follows a specific methodology laid out in articles 23 to 31 of the LMA as well as in the RAAM. Obligatory part of the EEIA is an Audit of the Environmental Base Line (Auditoría de Línea Base Ambiental – ALBA), which determines potential damage of the program and the need for mitigation. For potash, the MMAyA established a one-year-timeframe to conduct an EEIA. After a six-month-extension, the respective study was presented to the MMAyA and the license was obtained in May 2013. For first category projects this license is called Environmental Impact Declaration (Declaratoria de Impacto Ambiental – DIA) (Taucer and Anze 2013, chap. 3).

The EMAP form for the pilot project was presented to the responsible departmental authorities in Potosí in November of 2009 and the Exemption Certificate (Certificado de Dispensación) 021/2011 (Category 3) was obtained as an environmental license in 2011 (interview with M. Subieta, GNRE environmental officer, 15.4.2016).³¹² On this basis, the project was managed for various years until GNRE sought a categorization and evaluation of the impacts of potassium industrialization. On February 9, 2011, the project was evaluated as Category 1, which demanded a full EEIA (Categorization by MMAyA, Annex I in Taucer and Anze 2013). This assessment was conducted between 2011 and 2013 by the Bolivian consultancy Simbiosis S.R.L (Taucer and Anze 2013). Based on this study, the environmental license was obtained in May of 2013. Furthermore, for the experimental station at Tauca in the Salar de Coipasa, an Exemption Certificate (Category 3) was issued on March 31, 2014 as an environmental license (GNRE 2015a, 35).

While GNRE has obtained three valid environmental licenses by the outlined processes, the legal requirements were not fully met. As will be further discussed, the artificial fragmentation of the project into different subprojects for the impact assessment allowed for an evaluation on different scales of the legislative framework. This, at least partly, curtailed the potential of GNRE to assess the impacts of the overall project. More importantly, the GNRE never conducted an impact assessment for lithium industrialization, which is still handled based on an exemption certificate obtained for a pilot project in 2009 supposed to run until the end of 2013. In the substantive EEIA that was conducted for potassium chloride production, lithium was not considered, “since it is part of another environmental license for being a different project.”³¹³ In its annual reports, the GNRE, however, presents the potash EEIA as the EEIA for evaporite resources, thus a-posteriori including lithium (GNRE 2014; 2015a; 2016). Based on the potassium EEIA, the GNRE develops annual monitoring reports on the compliance with the proposed measures for the responsible national and regional institutions (MMyM, MMAyA and departmental authorities) (interview with Monica Subieta, GNRE environmental policy officer, 15.4.2016).

Lithium and potash industrialization are considered to be individual and separate projects, depending on the circumstances. The potassium EEIA, for example, states:

³¹² GNRE provided the author with access to a copy of the EMAP form.

³¹³ Original quote: “Este proceso de reinyección consistirá en direccionar la producción de KCL de la planta modular a la piscina de evaporación de carnalita del proceso de carbonato de litio, que es parte de otra licencia ambiental al tratarse de otro proyecto” (Taucer and Anze 2013, chap. 2, 20)

“the project will be implemented in an area that was previously interceded, as pilot activities to produce lithium carbonate are developed which produce environmental impacts. For this motive, the environmental sensibility of the area is moderate, a situation which contributes to diminish the magnitude of the potential environmental impacts” (Taucer and Anze 2013, iv).³¹⁴

So, hypocritically, the lithium project, for which no environmental study was made, is used as an argument for why environmental impacts of potassium production are of minor importance. While this is illogical as such, the pilot potassium plant also started production before the lithium carbonate pilot plant.³¹⁵ Rafael Anze, the technical director of the consultancy Simbiosis, which conducted the EEIA, told me that it is a common government strategy to mix the different dimensions of environmental assessment and to fragment the project (interview, 6.5.2016).

“They have played a lot with these things to their convenience. Also, since this is the state, one phone call from the president to the Ministry of the Environment, and this had to be approved yesterday. But, they have played with two things; they have played with the times of exploration, with pilot examinations and the cycle of the project, in what refers to lithium carbonate, as the total, and what to the intermediate products, such as potassium chloride.”³¹⁶

The convenience splitting of the project is not against the law, as the GNRE can evaluate the different aspects of the initiative as different sub-projects (interviews with R. Anze, 6.5.2016 and policy analyst M. Vargas, 13.4.2016). Yet, as environmental expert Jorge Campanini points out (interview, 28.3.2016), it is legally questionable to continue to evaluate lithium exploitation as an explorative initiative and to manage this as an AMIAC project, which is designed for minor mining activities with insignificant and known impacts. First, it is uncertain to what extent the environmental impacts of lithium industrialization are known, since it is the first project of this kind

³¹⁴ Original quote: “*El proyecto se desarrollará en un área previamente intervenida en las que se están desarrollando actividades de producción a nivel piloto de carbonato de litio y que están generados impactos ambientales. Por este motivo la sensibilidad ambiental del área es moderada, situación que contribuye a disminuir la magnitud de los impactos ambientales potenciales.*” (Grammar mistakes in the original were corrected in the translation.)

³¹⁵ The same argument is used to underline minor effects of industrial potassium production on bird life. “Other affected populations would be the birds, due to disturbances of their natural habitat in flooded areas of the salar, where the pilot and industrial plants for potassium chloride will be built. Yet, since in the area already exists the pilot plant for lithium carbonate production, the habitat is already disturbed and the impact of the plants for potassium chloride would be of minor magnitude.” Original quote: “*Otras poblaciones afectadas serán las aves debido a la perturbación de su hábitat natural en las zonas inundadas del salar donde se construirán las plantas modular e industrial de cloruro de potasio, pero al ya existir en la zona la planta piloto de carbonato de litio el hábitat ya se encuentra perturbado y el impacto de las plantas de cloruro de potasio será de baja magnitud*” (Taucer and Anze 2013, chap. 6, 10).

³¹⁶ Original quote: “*Ellos han jugado mucho con estas cosas a su conveniencia. Además, como es el estado, una llamada del Presidente al Ministerio de Medio Ambiente, y eso tiene que aprobarse ayer. Pero, ellos han jugado con dos cosas; han jugado con los tiempos de exploración, con pruebas piloto (río) y con el ciclo del proyecto, en lo que se refiere al carbonato de litio, como el total, y los productos intermedios, como el cloruro de potasio.*”

in Bolivia (interview with D. Clemente, UATF, 15.5.2016). Moreover, the RAAM (Art. 93) defines clear limits on mining materials that can be moved within the framework of a minor mining project, which is 300 tons per month. It is highly unlikely that GNRE moves less than 300 tons of salt monthly excavating the evaporation pools (interviews with J. Campanini, 28.3.2016 and D. Clemente, 15.5.2016).

Moreover, the EEIA conducted for potassium in itself raises questions of adequacy and sufficiency. First, the environmental assessment started only in 2011, while the corresponding legislation establishes that project activities can only begin after environmental impacts were assessed (which is, of course, also true for lithium). This fact was also made clear to COMIBOL in a letter from the Ministry of Environment and Water dating February 3, 2011:

“Thereby, you are reminded that according to Article N° 51 of the Regulations for Prevention and Environmental Control (RPCE); **‘THE LEGAL REPRESENTATIVE can proceed the implementation of the project, work or activity, only after receiving the correspondent Exemption Certificate or the DIA’**” (highlights in the original text).³¹⁷

The project was, however, already in progress and continued to be implemented during the EEIA study, a fact that should also have been clear to the MMAyA, considering the press coverage on the project’s advances.

Second, it is uncertain whether it was possible in 2011 to access all environmental impacts of industrial potassium chloride production, when the pilot phase had not yet been concluded. GNRE had first proposed to separate the environmental evaluation for the pilot and the industrial phases but later taken that proposition back since it was administratively too difficult.³¹⁸ As lithium analyst

³¹⁷ Letter from February 3, 2011, from Cynthia Viviana Silva Maturana, Vice-Minister for the Environment, Biodiversity, Climate Change, Forest Management and Development to Hugo Miranda Rendón, Executive President of COMIBOL. Included as annex to the EEIA (Taucer and Anze 2013). Original quote: “*Asimismo, se le recuerda que según lo establecido en el Artículo N° 51 del Reglamento de Prevención y Control Ambiental (RPCA), ‘EL REPRESENTANTE LEGAL podrá proceder a la implementación del proyecto, obra o actividad, solamente después de recibir el correspondiente Certificado de Dispensación o la DIA.’*” DIA means environmental license (Category 1).

³¹⁸ Letter from March 28, 2013 from Carmen Tania Arratia G., Legal Consultant of COMIBOL, to Francisco Salvatierra Iwanami, General Director for the Environment and Climate Change at the MMAyA: “Effectively, through the note GNRE 264/2012, the GNRE initially solicits the separation of the Environmental Licensing for the pilot and industrial plants because of time lags in the planned chronogram and in the elaboration of the final design. Nonetheless, having contracted the consultancy and having already achieved an advance in the development of the study, it resulted administratively impossible to reduce the range and amount of the contract [with the consultancy Simbiosis], which is why it was decided to accelerate the elaboration of the final design and to shorten the time to comply with the planned chronogram. This is the reason why it was achieved to elaborate the Evaluation Study of the

Zuleta (interview, 2.12.2015) underlined: “it is also worth the effort to note that when this company carried out the impact study, the project did not yet have defined the production process that it would apply,”³¹⁹ devaluating the assessments, the EEIA made for environmental impacts such as water use or waste production. The EEIA estimates most impacts as of minor concern (ibid., Executive Summary). Yet, it is not always clear how these impacts were concretely estimated, since the EEIA itself specifies that important base data was not available (Taucer and Anze 2013, chap. 2). Moreover, the EEIA finds that the impacts of pilot and industrial production are similar but this is not further justified. A third critical observation can be made concerning the limited study of certain externalities, particularly the modulation of air contamination. On this, the EEIA states that this cannot be evaluated sufficiently, since the processes are new and need to be assessed in the industrial phase (ibid., chap. 6). Such data should, however, exist from other lithium projects in Chile and Argentina. Ströbele-Gregor (2014, 160) criticizes the EEIA process in general for not sufficiently considering indirect impacts resulting from additional industries and the increase of population. Finally, Rafael Anze (interview, 6.5.2016) underlined that the EEIA was conducted based on a preliminary design of the industrial potassium plant. If the plant is extended, the EEIA would need to be updated. In the case that the production process itself is changed, e. g. omitting limewashing, GNRE would need to process this update before a new procedure is implemented (ibid.).

The downside of separating potassium and lithium in the evaluation is an incomprehensive overall assessment of the environmental impacts of the GNRE project which could result in the implementation of inadequate or insufficient mitigation measures in industrial production. Potassium chloride is a precursor to lithium carbonate production which, through the higher overall production quantity and the specific procedures for lithium processing, adds additional environmental dimensions to the initiative. Since potassium is not the end stage of the chain, the generation of waste and contamination cannot be fully accessed in the potassium EEIA (interview

Environmental Impact for both plants jointly, as indicates the Categorization Note. For this reason, the EEIA-AI was presented for the modular and industrial plants jointly within the timeframe established by the norm.”

Original quote: “Efectivamente, mediante nota GNRE 264/2012, la GNRE solicita inicialmente la separación del Licenciamiento Ambiental para las plantas piloto e industrial debido a desfases en el cronograma planificado y elaboración del diseño final. Sin embargo, al tenerse contratada la empresa Consultora y teniendo ya un avance en el desarrollo de la consultoría, resultaba administrativamente imposible reducir el alcance y monto de contrato de la misma, por lo cual se decidió acelerar la elaboración del diseño final y acortar tiempos para dar cumplimiento al cronograma planificado, motivo por el cual se logró elaborar el Estudio de Evaluación de Impacto Ambiental para ambas planta en su conjunto, tal como señala la Nota de Categorización. Es por este motivo que se presentó el EEIA-AI para las plantas modular e industrial en conjunto dentro de los plazos establecidos en la normativa.”

³¹⁹ Original quote: “Porque además vale la pena anotar que cuando esa empresa hizo el Estudio de Evaluación de Impacto Ambiental, el proyecto aún no tenía definido el proceso de producción que iba a aplicar.”

with R. Anze, 6.5.2016). When only looking at potassium, the waste problem can be categorized as a minor problem, since the residuals are, first and foremost, base products for lithium carbonate production. At the end of the chain, residuals will remain which has not been accessed in the potassium EEIA. Moreover, chemical substances potentially added in the lithium process were not considered (ibid.).

Consequently, different analysts have underlined the need to conduct an additional EEIA for lithium, including a second public consultation, and to update the potassium EEIA before industrial production starts (interviews with J. Campanini, 28.3.2016; R. Anze, 6.5.2016, D. Clemente, 15.5.2016, and others). Such a lithium EEIA would not necessarily have to be a first category examination. As Rafael Anze (ibid.) outlines:

“Thus, if they have done nothing to produce lithium carbonate, they need an environmental license. It could be that this is not necessarily done through an EEIA, it could be that they say ‘no, I already have a great part, thus I only need to complement something’, and, suddenly, they can get a Category 3. I do not know, but also it is the government, they can do anything. But yes, they need one [an EEIA].”³²⁰

Also, the GNRE environmental officer M. Subieta (interview, 15.4.2016) sees this necessity and establishes that such an assessment should be based on the design of the industrial lithium plant developed by the German consultancy K-UTEC. According to her, K-UTEC would also have to manage the environmental impact study. In any case, the legal obligation for an environmental categorization and full-scale assessment before the investment phase has not been met.

There are two additional problems beyond those highlighted in the environmental mitigation strategy of the government. First, monetary resources for environmental assessment and impact management are very limited. For the industrialization phase, the BCB has approved a 617 million USD credit in 2015. Of this money, only 536,000 USD or 0.087 percent are foreseen to be used for environmental management and mitigation (La Razón 2015c). Secondly, the civil society engagement with the topic is equally deficient; none of the major environmental NGOs in Bolivia has thoroughly studied the impacts of lithium and potassium exploitation (interview Ó. Choque, 23.9.2015). Jorge Campanini from the NGO CEDIB (interview, 28.3.2016) linked this to the

³²⁰ Original quote: “Entonces, si no han hecho nada, para poder producir carbonato de litio, necesitan una licencia ambiental. Puede ser que no sea necesariamente a través de un EELA, puede ser que ellos digan ‘no, ya tengo una gran parte, entonces, yo necesito complementar una parte’, y de repente ellos pueden sacar una categoría III, no sé, pero además es el gobierno; todo puede hacer. Pero que requieren [un EELA], requieren.”

general pressure that the government is placing on NGOs which consequently lack personal and funding, while Pablo Villegas from the same institution (interview 23.3.2016) underlined that with limited resources more advanced projects in mining merit greater attention. Moreover, existing studies, such as the assessment by the CEDLA, rely on the limited information available, which does not allow for a verified assessment.

At the same time, the government evaluation of its environmental assessment and mitigation strategy is largely positive, centering on two arguments. First, the project will bring benefits for the country and for local communities that outweigh possible costs. Secondly, large-scale environmental impacts are not expected because the environmental dimensions have been thoroughly evaluated (compare GNRE *memorias*; interviews with e. g. R. Martínez and M. Castro, 12.11.2015). While all mining initiatives impact the environment in some way, it is argued that with the mitigation strategy that the GNRE has implemented, these externalities can be minimized nearly to zero. A COMIBOL board member (interview 5.4.2016) answered the question whether the project could have negative impacts for local communities: “we know that **every** industrialization creates damage to health and we know that we will have to release many gases, chemical elements, **but**, if we know how to administer, as the state, we will be able to advance with the protection of the environment.”³²¹

Lithium mining is thereby often portrayed as a clean alternative with impacts that do not compare with those of traditional mining. Saúl Cabrera, chemistry professor at UMSA and close to the government project, points out (interview, 19.5.2016):

“Concretely, in the mining sector, when you talk about traditional mining, there are two things which have to be clear. There is traditional mining, which is polymetallic, which means that it works minerals such as tin, lead, zinc, gold, and silver; this entire mining industry is highly contaminating for all the productive processes it uses. Compared to this industrial process in the mining sector, the topic of the treatment of evaporite resources is extremely clean.”³²²

³²¹ Original quote: “Sabemos que **toda** industrialización crea un daño a la salud, y sabemos que vamos a tener que botar muchos gases, elementos químicos, **pero** si vamos a saber administrar, como Estado, vamos a poder avanzar con el cuidado del medio ambiente.” Words emphasized by the speaker are in bold.

³²² Original quote: “En concreto, en el sector minero cuando uno habla de minería, hay dos cosas que hay que tener claras; hay la minería tradicional, que es poli-metálica, es decir, que trabaja en minerales como el estaño, plomo, zinc, oro, plata, toda esa minería es altamente contaminante, por todos los procesos productivos que tiene. Comparativamente a ese proceso industrial en el sector minero, el tema de tratamiento de recursos evaporíticos es altamente limpio.”

The GNRE communication strategy also underlines that lithium is an environmentally friendly resource as a fundamental component of the green-energy turn. In its report for 2010, GNRE (2011, 7) highlights the commitment of the Bolivian government “to improve the current environmental condition on the planet.”³²³ Thus, the debate about localized impacts of lithium exploitation and processing is linked to the greater discussion of lithium as a paramount building bloc of international climate justice (Ströbele-Gregor 2014, 160). In this spirit, it is repeatedly highlighted that the environmental dimension is relevant for GNRE (ibid.). Raúl Martínez from the GNRE community services (interview, 12.11.2015), for example, says about the lithium initiative, “this is an ecological project; hence we also have to work in this spirit.”³²⁴

6.5.3 Summary of Findings: Environmental Governance

GNRE has implemented measures to study the environmental impacts of the lithium and potassium projects. It commissioned an impact study for potassium industrialization and the development of a mitigation plan. Nonetheless, in this impact assessment important analytical steps have not been taken or were postponed. Particularly, the separation of the environmental studies for lithium and potassium industrialization raises doubts about the seriousness of the process and the adequacy of the results. This convenient splitting of the procedure can be linked to a frequently voiced concern against public ownership of resource projects – the limited control mechanisms. The environmental management of GNRE, as part of COMIBOL, is supervised by COMIBOL, the Ministry of Mining and the (weak) Ministry of the Environment, all controlled by the same government party. This allows public institutions an overly large auto-control of the process which supported a lax interpretation of the already deficient legal framework, while non-government actors have not been involved in environmental planning.

Government interpretation of externality management stresses the benefit site of the project and links back to arguments that mining of lithium is crucial for local development and without alternative; potential environmental impacts notwithstanding. Thereby, government sources frequently relate to what Scott (1998) describes as a “high-modernist ideology”, a belief that technological progress can fix every (environmental) problem. Bureaucrats in particular tend to overstate the mitigation potentials of technology solutions and underestimate social, ecological, and

³²³ Original quote: “(...) *para mejorar la actual condición medio ambiental del planeta.*”

³²⁴ Original quote: “*Este proyecto es ecológico, entonces también en este sentido tenemos que trabajar.*”

economic uncertainties and complexities (ibid.). In the lithium project, these uncertainties are enhanced since important primary data on the ecosystem and the impacts of the mining initiative on the Salar de Uyuni remain mostly unclear.

Furthermore, allocated funds for environmental evaluation and impact mitigation are extremely limited. This leads to the possibility that the proposed mitigation measures are inadequate or insufficient. Existing environmental evaluations, both from the government and from non-government sources, were carried out on this insufficient database. In result, academic discussions and analyst opinions in Bolivia range between two extremes: on the one hand, lithium industrialization is portrayed as a clean technology with little impacts for the environment. Critical voices, on the other hand, warn against a complete destruction of the regional ecosystem and even the Salar de Uyuni itself. This information gap and opposing reports on lithium impacts are likely to have created insecurities about the externalities of the project on the local level.

7 Case Study Part II: Grievance Dimensions of Lithium Governance

7.1 Introduction

The present study seeks to understand how different governance dimensions of the lithium project interact with grievances. Resource projects, in a great majority, create grievances for local actors. Livelihood grievances are concerned with the impacts of extraction on traditional ways of life and the environment, economic grievances evolve around questions of material benefits such as the monetary participation in a project or employment, while political grievances emerge from the political structures of participation and transparency in which an initiative is developed. Yet, as social movement studies outline, not all of these grievances result in mobilizations (see for example Jasper 1998; Snow and Soule 2010; della Porta 2015; and Simmons 2016b). To explain mobilizations, it is necessary to engage with the meanings of grievances, relating to the perceptions of local actors and the context conditions in which they interpret a resource project. Thereby, mobilizations are often linked to grievances imbued with historically and culturally interpreted feelings of exclusion and injustice. In this context, scholars have shown that unjust power constellations can deepen grievances (Harvey 2004; Svampa 2013; Engels and Dietz 2014).

Simultaneously, mobilizations also depend on the context or what social movement studies refer to as the political opportunity structures in which grievances emerge (Della Porta 2015; Jasper 1998; Simmons 2016b). Resource governance is an important component of these context conditions of meaning-making, as encompassing research on the resource conflict link has underlined (Humphreys 2005; Schure 2007; Basedau and Lay 2009; Sinnott, Nash, and Torre 2010; Tänzler and Westerkamp 2010; Mähler, Shabafrouz, and Strüver 2011; Mildner, Lauster, and Wodni 2011a; Frerks, Dietz, and van der Zaag 2014). In the theoretical chapter, I discussed different dimensions of resource governance and their impacts on grievances and grievance interpretation. In Chapter 6, I assessed these dimensions of governance for the lithium case with a focus on questions of benefit distribution, externality management, and stakeholder integration. Moreover, I analyzed the planning and decision-making framework of the initiative, the ownership of the lithium project, and its framing by both government and non-governmental actors. In the Bolivian Water Wars, a resource governance approach based on a societally widely rejected “neoliberal” market ideology was important to unite people beyond societal boundaries, also because the protest was framed as

resistance against neoliberalism (Simmons 2016b, 2016a; similarly della Porta 2015 for austerity protests in general). Consequently, to understand grievances and their mobilizing potential in the Bolivian lithium project, it is paramount to engage with the way the project is presented and which meanings people consequently award to lithium and an industrialization project of this magnitude in the Salar de Uyuni.

Simmons (2016a, 2016b) underlines that grievances initiate social movement formation only when common interests and perceptions form local alliances. Thereby, it is important to consider that local communities in the Salar de Uyuni are far from homogeneous and, while certain actors are natural allies, others have been separated by long-standing cleavages. Literature has pointed to the potential of valuable natural resources to intensify existing cleavages by raising the material stakes of the dispute (Mähler and Pierskalla 2014). Moreover, also beyond the local level, different stakeholders influence local perceptions and the meanings awarded to the lithium project. While government actors have framed the project as an important step towards sovereignty, critical analysts and different civil society organizations consider it an expression of neo-extractivist continuities (see Chapter 6.2). It is thus also important to consider the interaction of local opinions with information from other sectors of society.

A mobilizing scenario can emerge from both vertical grievances, between the different state levels as well as between local communities and the state, and horizontal grievances, between different communities. As Olivera (2014, 162–67) outlines in his study of rural communities in the lithium project, two separate local blocks can be identified, which are historically opposed due to unresolved land issues and cultural differences. The first block represents the communities in the municipalities of Colcha “K” and San Pedro de Quemes (province Nor Lípez) in the southern part of the salar, which are locally closest to lithium production sites. The municipality of Uyuni in the eastern salar province of Antonio Quijarro also links to this block. The southern salar area is marked by a strong presence of Quechua cultures and rural union structures and is supported by the MAS ally FRUTCAS. Moreover, this region has an important political representation in the departmental and national governments. Because this group has stronger political ties, it has greater leeway to influence opinion formation at the political level and has received more political support in its territorial claims. The second block represents the northwestern municipalities of Llica and Tahua (province Daniel Campos) and Salinas de Garcí Mendoza, where Aymara cultures dominate. This block is more distant from the lithium program, critical of FRUTCAS’ involvement and not well

connected at the political level (Figure 14). The block structure indicates important power imbalances, as rural communities can influence political decisions to very different degrees due to (non-)existing alliances. I hypothesize that this impacts potential grievances and the local interpretations of the lithium project.

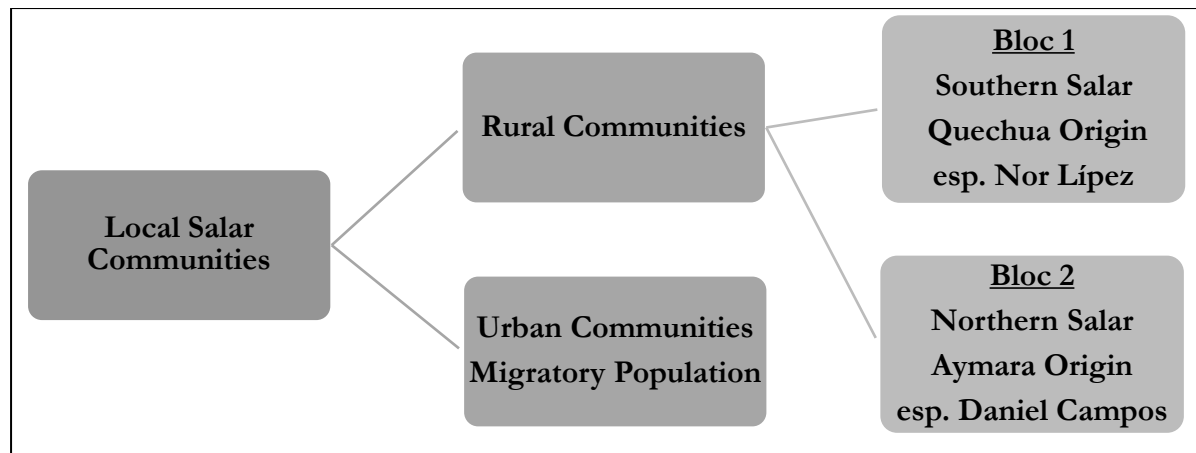


Figure 14: Block Formation in Local Salar Communities

Yet, despite intercommunal grievances, it is also possible that local actors form horizontal alliances based on common interests vis-à-vis the lithium project that span the outlined geographical and cultural divides. Such cleavage bridging alliances have frequently been described in case study research; they are also an important component of social movement emergence in recent Bolivian history (e. g. Gas Wars, Water War) (Farthing and Kohl 2014; Simmons 2016b, 2016a). Relating back to the environmental dimensions of lithium industrialization, earlier academic engagement with the case has suggested that quinoa farmers might oppose lithium exploitation due to the high water needs (Hollender and Shultz 2010; Ströbele-Gregor 2012). Also, indigenous groups have a special relationship with the environment and could unite against potential impacts on mother earth and their traditional lands, such as Göbel (2013b) argues for Argentinean lithium projects. Other potential alliances could emerge from mining cooperatives as they might fear an impact on their exploitation rights through the expansion of the industrialization project and the establishment of a fiscal reserve. Moreover, political developments might also act as a catalyzer for group formation. The MAS government lost support after the failed referendum of 2016 (compare Chapter 4.1). This could indicate that opposition against the project might also form on political grounds, headed by the local political opposition. A schematic actor panorama of local communities is developed in Figure 15.

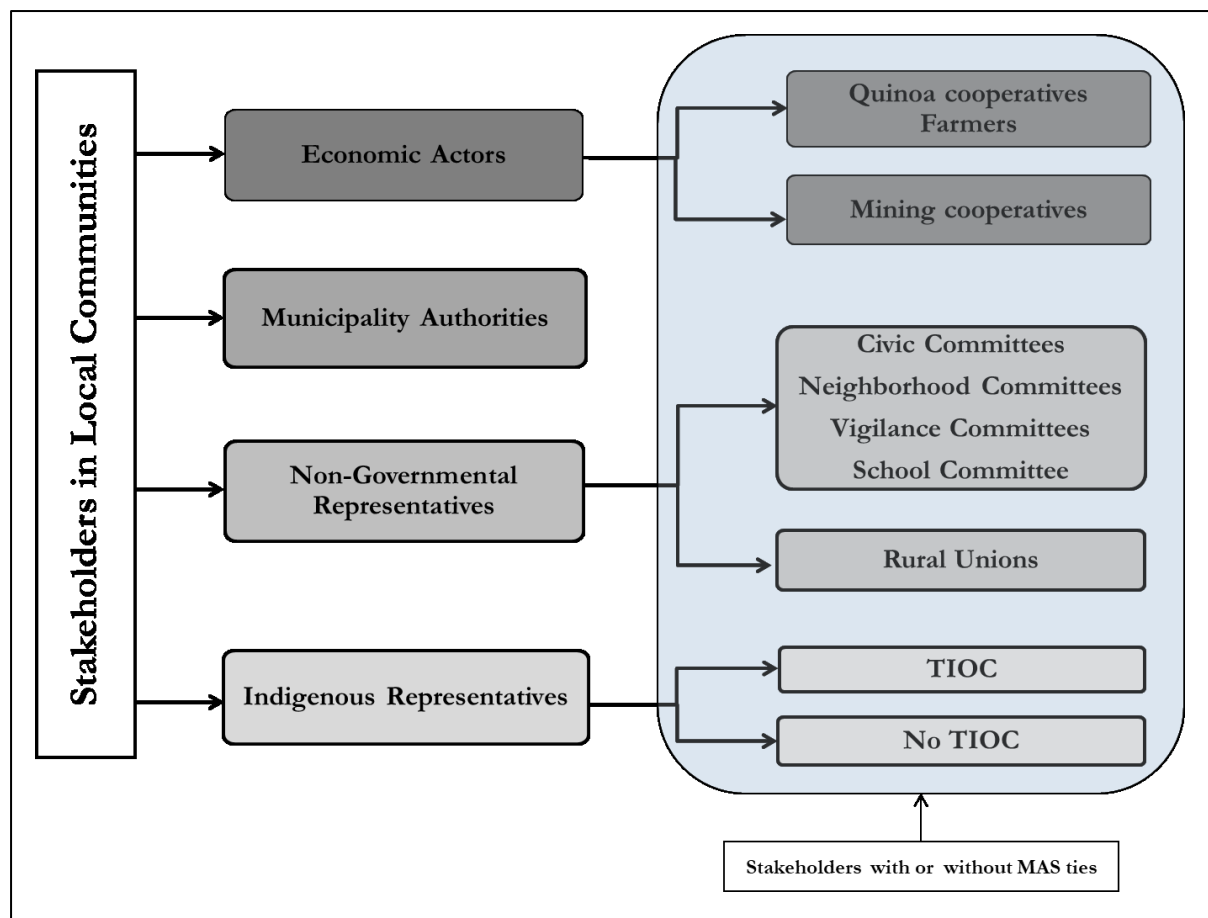


Figure 15: Stakeholder Panorama in Local Salar Communities

Next to horizontal alliances also vertical protest formation is possible. The lithium governance approach is highly centralized. Neither sub-national government actors are involved in planning, nor does the project design envision a major participation of local actors. In the past, departmental actors have demanded a stronger position vis-à-vis the central government in public mining activities in general and in the lithium project in particular. As has been outlined, both major crises in the project have evolved around issues of departmental benefit participation. The Civic Committee of Potosí, COMCIPO, has been a central actor; COMCIPO openly opposes any centralization of administrative institutions or benefits of departmental projects to La Paz, targeting a re-distribution of lithium benefits (Bullaín Iñiguez 2009). Considering the power held by the mining department of Potosí and its social organizations vis-à-vis the central government, another protest alliance could form between local communities and departmental actors against a centralized and bureaucratic management of the project. The exclusion of the University of Potosí from the lithium initiative might add further meaning to existing grievances.

In summary, different dimensions of the governance of the project, when linked to other emotionally felt context factors such as cultural identities and historic experiences, could support the local interpretation of the project and the meanings awarded to project-related grievances. Economic, political, and livelihood grievances could form in the lithium project as the result of the perceptions of power imbalances, material, or political disadvantages or from frustrated expectations. The different grievances categories and types have been summarized in relation to governance dimensions in Table 1 in Chapter 2.5.

Whether and to what extent existing grievances create groupness and support the formation of protest alliances beyond individual interests, however, depends on the interpretation of the project and its governance in the specific circumstances. Also, the local interpretation of the lithium project would need to develop in a way that can span existing local-local cleavages in the area. To access the meaning-making process around the lithium project and to understand the formation of potential protest alliances, the localized stakeholder perceptions of the governance decisions become particularly relevant. Thus, in the subsequent chapters, the findings from interviews with local stakeholders are discussed in relation to the outlined governance dimensions and grievance categories.

7.2 Local Project Support and the Expectation-Benefit Gap

Government communication on lithium and potassium industrialization centers on its positive impacts. The GNRE frames the project in its local and national information campaigns as a strategic initiative that will bring economic benefits for the Bolivian people in general and southwestern Potosí in particular. These promises of work and income have impacted local perceptions of the project. In the poor salar communities, where any kind of economic development is welcome, the strong intertwining of lithium exploitation with direct economic benefits has increased local support for the initiative. As Froilan Condori, former head of FRUTCAS, stressed “everybody is convinced” in the region (interview, 1.12.2015).³²⁵ Moreover, the former President of the Scientific Committee Roelants stated that as long as he accompanied the initiative, no community in the area was opposed to it in any way (interview, 20.5.2016).

³²⁵ Original quote: “*Abora todos están convencidos.*”

Local communities, also in the context of the hardship they are experiencing with declining quinoa prices and impacts of climate change, connect high hopes for their future to lithium industrialization. A quinoa farmer in Llica told me “lithium is a dream, in any case we want it” (interview with O. Lucas, 14.11.2015)³²⁶, a cooperative worker in Rio Grande commented “we have lived such a great illusion, we hope that it becomes a reality” (interview with L. Ali, 25.4.2016), while the principal of the primary school of Colcha “K” demanded that the project “advances in the fastest possible way, that it is improve and gets perfected”³²⁷ (interview with E. Cayo, 27.4.2016) and the accountant of the quinoa cooperative in Llica stressed, “we hope that in the future, our economic basis will be lithium” (interview with D. Carlo, 14.11.2015).

The widespread support for the project is also connected to the rural backing of the MAS administration and, as it was frequently phrased in my interviews, “our brother” or “our companion” President Evo Morales,³²⁸ who initiated the program. The interpretation of the initiative is thereby strongly impacted by a dominance of the MAS in municipality governments in the region which results in strong political support for the initiative and the president’s policies in general in local administration. This is exemplified by a statement of the MAS mayor of Llica, Edgar Apala (interview 14.11.2015): “we will back all of our brother president’s strategies.”³²⁹

The idea that the lithium project will have a significant impact for national development and support the country’s sovereignty, is widely referred to by local actors, highlighting an impact of government framing of the project on local perceptions of lithium exploitation. Local actors strongly refer to the vision of the project as outlined by the MAS administration and the GNRE. The MAS mayor

³²⁶ The image of the lithium project as a dream is an allegory used by different local interview partners (e. g. interviews with O. Lucas and D. Villca from Llica, 14.11.2015; I. Calzina from Colcha “K”, 27.4.2016 and E. Calizaya, former President of FRUTCAS, 13.5.2016) and by the GNRE (2014, 111; interview with J. Carballo, GNRE, 4.12.2015). Policy analyst Fernando Molina (interview, 13.4.2016) related this to the extractive Bolivian dream: “thus, Bolivia immediately searches for another thing that is the new dream. The Bolivian dream is always extractivist; it is to live of the exploitation of the non-renewable natural resources and to benefit from the rents in one or another way (...). That is the Bolivian myth and the only thing we know how to do, if truth be told.” Original quote: “*Entonces, Bolivia inmediatamente busca otra cosa, ese es su nuevo sueño. El sueño boliviano siempre es extractivista, es vivir de la explotación de recursos naturales no renovables y aprovechar las rentas en uno u otro sentido (...). Ese es el mito del boliviano y lo único que sabemos hacer, la verdad.*”

³²⁷ Original quotes: O. Lucas: “*El litio es un sueño, si o si lo queremos.*” L. Ali: “*Hemos vivido una ilusión tan grande, esperamos que se realice.*” E. Cayo: “*Que avance lo más antes posible y mejore y perfeccione.*” D. Carlo: “*Esperamos que en el futuro nuestra base económica sea el litio.*”

³²⁸ Expression used in interviews with E. Apala, MAS mayor of Llica, 14.11.2015; D. Aleyo, “Political Instrument” of FRUTCAS, 16.11.2015; the members of the COMIBOL directory J. C. Zambrana and P. Ticona, 5.4.2016; J. Pimentel, former Minister of Mining, 4.5.2016; and E. Calizaya, President of the Departmental Assembly of Potosí and former President of FRUTCAS, 13.5.2016.

³²⁹ Original quote: “*Vamos a apoyar a todas estas estrategias que tiene nuestro hermano presidente.*”

of Uyuni, Patricio Mendoza (interview, 16.11.2015) pointed to a positive disposition among local inhabitants and municipal governments and their desire to support the initiative in any way possible:

“As the authority, our wish is that this battle is substantiated and brings benefits to the whole region. For any kind of situation, we as the municipality are predisposed to support, assist, facilitate, manage anything, and also put anything at disposition.”³³⁰

Expectations in local communities connect mostly to monetary benefits, employment opportunities, and infrastructure. Quantitatively, expectations of direct payments to the communities were mentioned in 71 percent of my local interviews, followed by expectations of employment (69 percent) and infrastructural improvements (36 percent). Other stated benefits (24 percent) included general community development, educational improvements, and singular issues, such as the access to cheap commodities (Figure 16).³³¹

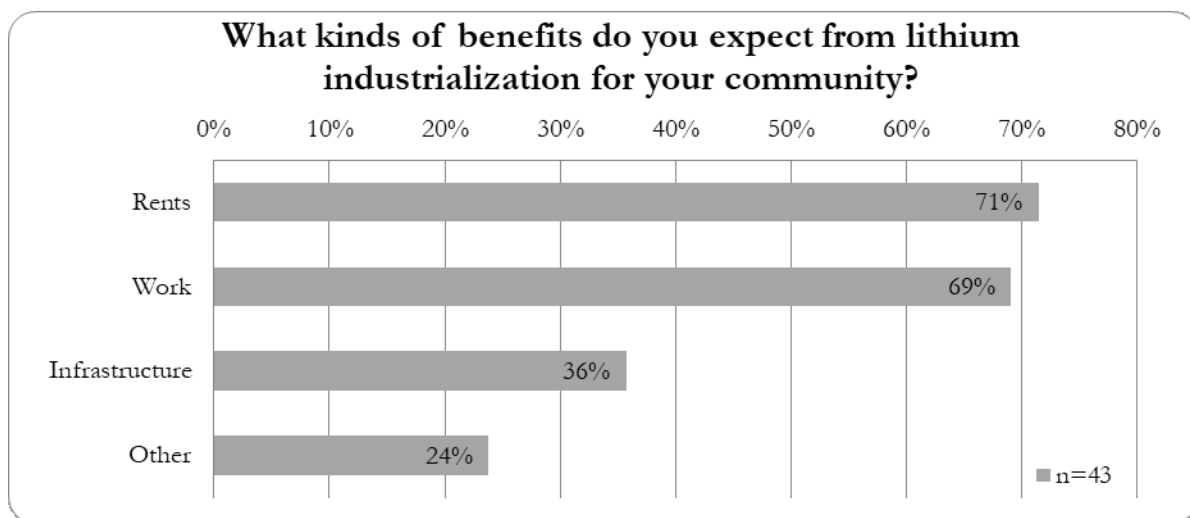


Figure 16: Project Benefits Expected in Local Salar Communities

In relation to meaning-making about rents, a municipality authority in Salinas de Garcí Mendoza underlines his expectation that “a **great** majority of the royalties will benefit us, the region above all”³³² (interview with R. Mamani, 11.5.2016). Primary school teacher Eugerto Cayo from

³³⁰ Original quote: “En función de autoridad, nuestro deseo es que esa lucha se vaya concretando, dando beneficio a toda la región. Para cualquier situación, nosotros como municipio, estamos predispuestos a apoyar, a coadyuvar, a viabilizar, a gestionar cualquier cosa y poner a disposición también de cualquier cosa.”

³³¹ Based on the interviews in which this question was answered. The percentage is based on the count of mentioned topics per interview partner; more than one answer was possible. Three interview partners did not see any benefits for their communities. Data from Salinas de Garcí Mendoza is partly based on a group interview with six interview partners who agreed on the benefits rents, employment, and infrastructure.

³³² Original quote: “Creo que una **gran** mayoría de regalías nos van a beneficiar, sobre todo a la región.”

Colcha “K” expresses his hopes for real change in which employment produced through the lithium plant would help to revive local communities and motivate those who migrated to Chile, Argentina, and other parts of Bolivia to come back to their home communities (interview, 27.4.2016). Similarly, the municipality agent of Rio Grande, Amador Quintin (interview, 25.4.2016), highlights that the lithium project will substantially change his community for the better and support the urbanization of the salar provinces:

“In reality, Rio Grande will be a village, a new city of lithium, like this, more or less, this is the situation and we are urbanizing. Also, this will be an urban radius. I mean that it will be, more or less, like a city, at least, I image, like Uyuni.”³³³

The lithium project is thus locally perceived as an important driver of development and “it is still believed that this project can resolve multiple social problems, above all poverty, education, health, infrastructure and telecommunications” (interview with F. Mamani, former President of FRUTCAS, 19.4.2016).³³⁴ Yet, when comparing the expectations, for example of Rio Grande becoming a lithium capital, to the governance set-up, the gap between hopes and reality becomes clear. In the current legal framework, the producing municipality could profit from little more than one million dollars in royalties at full production levels, leading the analyst Carlos Arze to conclude that: “the perception of the people, their expectations, are a lot larger than the reality of the project.”³³⁵

Also, as the project runs behind its initial timeframe, it is not clear when industrial production can start. After more than nine years of project development without the materialization of benefits, the gap between local expectations and project realities is also more intensely debated in local communities, showing a growing impact on local interpretations of the project and economic grievances. Many of my interview partners expressed a deception with the present status of the project and the fact that the expected benefits have not reached their communities. Particularly in the generation of local jobs, many feel that the company has not lived up to its promises. The legal counsel for the municipality council of Colcha “K”, Milton Belén (interview, 27.4.2016), expresses

³³³ Original quote: “*En realidad, Rio Grande que sea un pueblo, una nueva ciudad de litio, así más o menos, esa es la situación y también estamos urbanizando. O sea que va a ser como una ciudad más o menos, a lo menos me imagino, por lo menos como Uyuni.*”

³³⁴ Original quote: “*Aun todavía se cree, que este proyecto puede resolver múltiples problemas sociales sobre todo pobreza, educación, salud, infraestructura, telecomunicaciones.*”

³³⁵ Original quote: “*Que la sensación de la gente, las expectativas son mucho más grandes que la realidad del proyecto.*” Similarly, interviews with F. García (28.10.2015); J. Villalobos (4.12.2015); B. Mayorga (27.4.2016); and I. Soto (28.4.2016).

his feelings as follows: “there is the sentiment, that, in the aspect of work, from the beginning, the communities or the inhabitants of our communities are benefitting little or not at all.”³³⁶

There is a widely held opinion that the GNRE should value the local workforce and support local qualification initiatives to enable communities to access the plants beyond the unskilled level (ibid.). Local communities start to perceive that they are not sufficiently valued in their knowledge and competences by the lithium organization. As the *curaca* (indigenous authority) of Colcha “K”, Crecensio Ali (interview, 28.4.2016), highlights:

“Work, work for the future, for the children, for the young people. Here, we have so many professionals. I would like that they take our professionals, from our province, into account. That is what we ask of the company. That they do not bring [professionals] from elsewhere, because there are competent people in the province, in Colcha ‘K’.”³³⁷

Next to local work opportunities, the generation of monetary rents and particularly the distribution of income has been a long-standing economic grievance between local communities. As has been outlined, direct monetary participation of individual municipalities in the project is small and confined to royalties. Local actors, consequently, demand a higher participation in the income of the project. The *curaca* from Colcha “K”, Crecensio Ali (ibid.) was adamant:

“The royalty is too little, 15 percent. At least, I protest, a minimum of 25 percent should stay in the sector, minimum 25 percent and then up, this should be discussed, because the lithium is here where we live, in our territory, in our village, on our land. Thus, we want the royalties to be 25 percent or more.”³³⁸

In reality, the royalty is even less than Ali expects, a 15 percent share of a 3 percent royalty. This is a good example of the insufficient knowledge of many locals on income distribution. A central problem, as Teodoro Colque from Colchani (interview 28.4.2016) outlined, is that the government does not fully disclose regulations, which leads to misinformation on the nature of the revenue sharing regime in place. Municipality secretary Rolando Mamani from Salinas de Garcí Mendoza, for example, told me that he expects a benefit sharing framework like the IDH tax for gas, in which

³³⁶ Original quote: “*Pero hay ese sentimiento, que, en el trabajo desde el inicio, poco o nada está beneficiando a las comunidades o los habitantes de nuestras comunidades.*”

³³⁷ Original quote: “*El trabajo, el trabajo para el futuro, para los hijos, para los jóvenes. Aquí tenemos tantos profesionales. Nuestros profesionales, quisiera, que tomen en cuenta de nuestra provincia, no. Eso es lo que pedimos a la empresa. No, que no traiga de otro lado, porque en la provincia hay mucha gente capacitada en Colcha ‘K’.*”

³³⁸ Original quote: “*La regalía es muy poco, el 15 por ciento, por lo menos, yo protesto, por lo menos, en el sector debería quedarse un 25 por ciento mínimo, mínimo 25 por ciento y de ahí arriba habrá que ir discutiendo, porque el litio está en el lugar donde nosotros vivimos, en nuestro territorio, en nuestro pueblo, en nuestra tierra. Entonces con eso nosotros queremos, queremos que las regalías sean el 25 por ciento para arriba.*”

the producing municipalities in the whole area, including Salinas de Garcí Mendoza, benefitted (interview, 11.5.2016). Revenue distribution for the project is, however, highly centralized and royalty payments only directly profit the local producing municipality. This could indicate that meanings awarded to these economic grievances are interpreted as less severe than they would be if local knowledge on the existing regulations was more substantial.

At the same time, municipality borders in the production area are not clearly defined and it is not agreed upon between local communities which municipality is the producing one. My interviews showed that the issue of rent distribution between municipalities has impacted highly on the local interpretation of the lithium project and its governance. Existing economic grievances thereby strongly connect to emotional, long-standing cultural and socioeconomic cleavages in the region. I have already pointed to the existence of two opposing local groups in the salar region: the Aymara dominated northern salar provinces, and the southern salar areas with a strong Quechua influence and important union backing. Additionally, a third regional block, comprised of the social actors in the Department of Potosí, is important when it comes to monetary claims regarding the lithium project (Olivera Andrade 2014, 162–67). In my interviews in the salar area, different opposing demands were made to the salar territory (and consequently lithium royalties), mostly from the provinces of Daniel Campos and Nor Lípez but also from Antonio Quijarro and Sud Lípez.³³⁹ As has been discussed, mutual distrust between communities in the area is widespread and based on historic struggles over land and borders that go back to colonial times and link to cultural differences between Quechua and Aymara regions. These cleavages are hardened by a feeling that injustice was done in past distribution of rents and investments. These past experiences and cultural differences are central to meaning-making and grievance formation in the lithium project.

This is exemplified by local interviews when the monetary privileges of some regional actors, particularly the regional capital Uyuni and the province of Colcha “K”, where the San Cristóbal mine is located, are harshly criticized by those stakeholders that perceive themselves as outsiders in the rent distribution. Uyuni in particular is considered by many locals as an unjust beneficiary of the tourism income, while other regions, the real owners of the salar, do not partake in this wealth. In referring to the Salar de Tunupa as Salar de Uyuni, different (mostly northern salar) interview

³³⁹ The Civic Committee of Potosí supports the claim of Llica (interview with J. Llally, 14.5.2016). Also, opinions were voiced that both provinces share the salar and, as *curaca* Crecensio Ali from Colcha “K” upholds, the project should also benefit Daniel Campos, but just not as much as Nor Lípez (interview, 28.4.2016).

partners underlined, the city of Uyuni has directly linked itself to the salar and now profits from tourism income (interviews with A. López, Tahua, 16.11.2015; M. Lérica, 9.10.2015; and M. Ayaviri, 13.11.2015, both Llica). This favoritism, inhabitants of other municipalities fear, might repeat itself in the lithium project. Llica's mayor Edgar Apala from the MAS party outlines (interview 14.11.2015):

“[The locals] expect that not everything goes to the central level and other provinces benefit more. In the case of Uyuni, they do not have salar, the province of Antonio Quijarro has not even a meter of salar, but at this moment, they are the ones who benefit most. We, although our resources are in the province, receive nothing. We hope that [the benefits] also arrive here and the people also expect that the resource will be industrialized in the salar and that a substantial percentage arrives at our province Daniel Campos and also in the municipality of Llica.”³⁴⁰

Also, the municipality of Colcha “K” is viewed suspiciously by other municipalities, particularly Llica and Tauca, since it already exclusively receives the benefits of the San Cristóbal mining project, 6.5 million USD in 2014 (Pimentel Castillo 2016).

The local rejection of centralization tendencies in the project is nourished by communal perceptions that revenues and jobs are drawn to the departmental and central levels. Former head of the Llica Civic Committee, Sigfredo Calle (interview, 14.11.2015), stated:

“But the current government centralizes all of the resources. Only very little reaches the provinces. This is also the case with San Cristóbal. This is the largest mining company in the country but it does not bring resources for the province, it is as if it did not exist in the country. We think that this could also happen with lithium.”³⁴¹

Moreover, it was repeatedly outlined that Potosí had lobbied to move parts of the project away from the region. Various interview partners criticize the location of the pilot plant for battery production, the centerpiece of industrialization; it was constructed close to the city of Potosí and not in the region. This has negatively impacted on local job opportunities (interviews with S. Llave

³⁴⁰ Original quote: “*[Los comunarios] están esperando que no se vaya todo a nivel central u otras provincias se benefician más. En el caso de Uyuni, no tiene salar, no tiene ni un metro de salar la provincia Antonio Quijarro, pero en este momento los más beneficiados son ellos. Nosotros, cuyos recursos están en la provincia, no estamos recibiendo nada. Esperemos que también llegue y eso también espera la gente que los recursos se vayan a industrializar en el salar y llegue un buen porcentaje para nuestra provincia Daniel Campos, también para el municipio de Llica.*”

³⁴¹ Original quote: “*Pero el actual gobierno centraliza todos los recursos. Llega muy poco a las provincias. También es así con San Cristóbal. Es la empresa minera más grande del país, pero no trae recursos para la provincia, es como no existiera en el país. Pensamos que también puede ser eso con el litio.*” See also the previous quote of E. Apala; the people expect industrialization in the Salar de Uyuni, not outside the area.

from Colcha “K”, 27.4.2016; L. Morales and D. Villca from Llica, 13.11.2015).³⁴² Simultaneously, the Civic Committee of Potosí has announced a “frontal fight for lithium benefits” (ibid.). COMCIPO demands between 50 percent and 100 percent of the income from lithium and potash industrialization for the department.³⁴³ Local communities criticize that royalties benefit the department over-proportionally and demand a greater local share in royalties (interview with M. Lérica, local activist from Llica, 9.10.2015; E. Apala, mayor of Llica, 14.11.2015; and P. Mendoza, mayor of Uyuni, 16.11.2015). An additional problem is that the Departments of Potosí and Oruro are also in conflict over borders, since Oruro claims a minuscule part of the Salar de Uyuni and, consequently, access to the revenues generated in the lithium project (interview with C. Sandy, professor at Oruro University, 9.11.2015).

Despite the outlined differences and the mistrust among local communities and between the local and departmental level in rent distribution, these three groups are not opposed to the lithium program or industrialization of the evaporite resources. Their grievances center on the degree of participation in the distribution of benefits and the recognition of territorial claims by the central government but also evolve around feelings of negligence and exclusion. The northern block, for example, interprets Nor Lipez’ claim to the lithium project as a repeated attack on their municipal territory and integrity. With the central government taking Nor Lipez’ side, at least this is the widespread interpretation in Llica, it continues to neglect the interests of Daniel Campos, which as a rural frontier municipality feels historically neglected by the government. The former head of Llica Civic Committee, Sigfredo Calle (interview, 14.11.2015), argued “for being a border province, we should be supported by the government, but the province is abandoned, there is nothing favorable even though we are the guardians of the border. This border province must be protected, but we are forgotten.”³⁴⁴ Llica citizen E. Aguirre (interview, 14.11.2015), added: “this capital is abandoned, the capital of Daniel Campos, frontier capital. It has all the right to ask for help from the government, but the government gives nothing.”³⁴⁵

³⁴² Similarly, P. Mendoza, mayor of Uyuni, 16.11.2015; and C. Coallaviri, engineer from Tahua, 15.11.2015. The construction of the plant in La Palca has also been criticized from a technical viewpoint, considering the long distances between the lithium and the battery plant (interview with analyst G. Cortéz, 4.5.2016).

³⁴³ In the outlined conflict in 2015, COMCIPO demanded 50 percent of the income from lithium and potash industrialization (Observatorio Boliviano de Recursos Naturales 2015; Opinión 2015); in an interview with me, Jhonny Llally, head of COMCIPO, demanded 70 percent (interview, 17.5.2016), while earlier heads of the organization sought the complete income from the project for the departmental budget (Bulláin Iñiguez 2009).

³⁴⁴ Original quote: “*Por ser provincia fronteriza, deberíamos ser apoyados por el gobierno, pero la provincia está abandonada, no hay nada a favor, aunque somos las guardias de la frontera. Tiene que ser protegida esa provincia fronteriza, pero somos olvidados.*”

³⁴⁵ Original quote: “*Esta capital está abandonada, la capital de Daniel Campos, capital fronteriza. Tiene todo derecho de pedir ayuda al gobierno, pero el gobierno no da nada.*”

The discussion indicates that demands of participation in lithium wealth are strongly connected to perceptions of livelihood and that this impacts local interpretations of the initiative. The government communication has created high expectations that lithium industrialization will bring important development opportunities in a region that desperately seeks new forms of income. The head of the Llica quinoa cooperative, Dionisio Villca (interview 14.11.2015), expressed his distress: “We need support; we are in a bad situation. With the wind, there is no quinoa. We do not know from what we can live. Lithium could help us very much.” The lack of quinoa is expressed as an important threat to subsistence and lithium is identified as a solution. Communities are, however, preoccupied about being excluded from the lithium as a central livelihood resource for subsistence to the benefit of a historic opponent. In the same interview, Villca said that “it is a great preoccupation that Nor Lipez will take over the project.”³⁴⁶ In most of my local interviews it became clear that people think strongly about benefits and that demands are emotionally felt in the different blocks as an important component of the local securing of livelihoods making this a very relevant local grievance in the lithium project.

To this adds the unresolved question of land rights. Next to the royalty payments to the producing municipality, claims to project income are also made based on collective land titles that extend over municipality borders. As has been outlined before, in 2010 different original groups from Nor Lipez succeeded in titling the largest Bolivian indigenous territory, which includes considerable parts of the Salar de Uyuni, and substantially impacts land rights in the area. This has supported further ruptures between the provinces of Nor Lipez and Daniel Campos, as the latter harshly opposes this claim. It is important to note the interconnectedness of the lithium project with these land claims, particularly this union-backed TIOC in Nor Lipez. Calla Ortega (2014, 46 et seqq.) argues that the success of the gigantic TIOC is a result of political pressure for property right security to implement the lithium project in the Salar de Uyuni.

The territorial claim of the rural union associated with FRUTCAS had been refused by previous administrations. Yet, when the MAS government came to power, FRUTCAS, as an important ally and initiator of the lithium project, obtained the necessary leverage to push for this claim in exchange for an acceptance of the fiscal reserve over the Salar de Uyuni (Calla Ortega 2014, 51). When the INRA approved the TIOC application in Nor Lipez (and others proposed by

³⁴⁶ Original quotes: “Necesitamos apoyo. Estamos mal. Con el viento no hay quinua. No sabemos de qué vivir. El litio nos podía ayudar en grande;” “Es una enorme preocupación que se va a adueñar Nor Lipez del proyecto.”

FRUTCAS), this changed the ethnocultural configuration of the salar region. Next to the indigenous *ayllu*-structure, the union-based form of communal landownership was further enhanced. At the same time, the fiscal reserve over the Salar de Uyuni re-confirmed the central government's exclusive ownership of the project. This fiscal reserve, established in the 1980s and conserved by the MAS government, and the support for union land claims has cemented existing insecurities and inequalities in land right regimes in the area and mirrors land right protections of post-colonial regimes in South America and Africa (Auty and Gelb 2001; Basedau and Lay 2005; Le Billon 2008; Mähler, Shabafrouz, and Strüver 2011). By favoring individual land claims, the lithium project has already had an important sociocultural impact on the region, as the existing TIOC and the fiscal reserve restrict the possibilities of other (*ayllu*-based) claims for collective land titles in the region to succeed (Poveda Ávila 2014, 130 et seqq.). Especially for those communities disadvantaged by these arrangements (in reality or their perception), land rights become an important political grievance.

As has been discussed in Chapter 6.4.2, existing collective land claims do not grant any direct fiscal participation rights in the revenues of the lithium project. Nonetheless, the complicated and partly confusing legal situation has created additional monetary expectations in local communities based on these collective land titles. My interviews in the region indicate that locals connect to these land titles their privative control of the subsoil. These are, in opposition to the legal reality, often seen as a way to own the extractive project and have a veto right over it.³⁴⁷ This is also why grievances over land titling are such a prominent issue in the region. For example, the mayor of the Huatri *ayllu* and member of the Communal Council of Salinas de Garcí Mendoza, Javier Calani (interview 1.5.2016), said about the GNRE project in the Salar de Coipasa:

“They are exploiting our salar. One has to study the norms very well, the mining law, whether the norms are complied with in this project. We are a TCO, therefore, legally, the *marka* is the owner of the complete salar and all of the project.”³⁴⁸

³⁴⁷ This also connects to the findings of Robb, Moran, Thom, and Coburn (2015) on indigenous perspectives on mining projects and collectively titled lands. The discourse links both to ownership demands about the initiatives and to expectations of monetary participation in “their” projects. Yet, as has been explained in Chapter 6.4.2 in more detail, these titles connect to rights over non-renewable resources and consultation rights.

³⁴⁸ Original quote: “*Es nuestro salar que están explotando. Hay que estudiar bien la normativa, la ley de minería, si se está cumpliendo la normativa en este proyecto. Nosotros somos una TCO, por eso legalmente la Marka es dueño de todo el salar y todo el proyecto.*”

Also, intentions exist to seek an indigenous autonomy on the historical territory of *Los Lípez*, which is seen as a way to access nonrenewable resources (interviews with F. Mamami, 19.4.2016; J. Llave, 27.4.2016; compare also Gysler 2011, 129–30). It seems unlikely that the government will concede land rights to an AIOC for this area. The head of social control in Uyuni, Mario Ramos (interview, 28.4.2016), told me, for example, that although rules are not clear, with the new autonomy law all benefits would have to reach the communities. He further accentuated that the communities will demand this, hinting at his interpretation of the mobilizing potential of claims based on the new autonomy law.

The outlined grievances and opposing demands are met by an ambiguous communication strategy of the central government. While the MAS government has substantiated its exclusive claim to the management of the strategic resources lithium and potassium in the Constitution and the new mining law, and, by a specific passage in the TIOC certificate for Nor Lípez, this has not been communicated widely on the municipal level. As for the dispute over municipality borders, the GNRE has equally acted inconsistently. The official GNRE position signals that the producing municipality is defined by the location of the administrative structures of the project. While the administrative seat is in the province of Nor Lípez (Taucer and Anze 2013, chap. 4, 1), claims of the Daniel Campos province to the Salar area were in the past both acknowledged and refused. In an article for the publication “El ABC de Litio”, GNRE director Echazú (2015, 306) states that the Salar de Uyuni is part of the province Daniel Campos while Raúl Martínez, GNRE manager of community relations, believes that the claim of the Daniel Campos province to the Salar de Uyuni is not substantiated (interview 12.11.2015). In the initial environmental study for the pilot phase, the project area was defined as the provinces Nor Lípez, Daniel Campos, and Antonio Quijarro (Corporación Minera de Bolivia 2009).

Raúl Martínez (interview 12.11.2015) underlined that the GNRE will not enter in the difficult border discussions and consequently the nature of the producing municipality, which must be resolved between the communities and in the authority of FRUTCAS: “With the communities, we do not work the border topic, we can only loose” (ibid).³⁴⁹ In Potosí, the departmental government similarly follows a “hands off” approach. As Richard Apaza, policy officer at the regional mining agency, expressed (interview, 17.11.2015):

³⁴⁹ Original quote: “*Con las comunidades no trabajamos el tema límite. Sólo podemos perder.*”

“The border topic is more a competence of the central state (...). We, as Secretariat of Mining, have not entered much in the border topic because it is a very delicate topic. The border topic can generate whatever type of social conflicts between the municipalities.”³⁵⁰

Thus, the topic is highly important to the local population, yet it seems that government institutions shy away from touching the issue due to its complicated nature. A resulting communication strategy emphasizes the vision of the project as an initiative for all Bolivians carried out in a fiscal reserve that takes priority above localized claims and demands (interviews with e. g. R. Martinez, 12.11.2015; F. Condori, 1.12.2015; A. Echazú, 17.5.2016). The fiscal reserve established on the Salar de Uyuni, however, only mandates that no private concessions are awarded over the territory, not affecting the royalty demands of the producing municipality.

Consequently, “frustrated expectations” and the perceived gap between the government created “paradigm that Bolivia will enter a new age of high technology with lithium”³⁵¹ (interview with J. Villalobos, 7.12.2015) and the project reality become a relevant grievance in the region. The initiative is not only behind its initial schedule, but it is also disconnected from local realities. While the government framed the program as a way to overcome poverty and socioeconomic problems in the poor area, the current project design does not support a large-scale participation of local communities in rents and job opportunities and does not consider existing cleavages over land rights. Particularly, economic grievances connected to the distribution of future rents between historic opponents show a high potential to create emotional interpretations which could be an important component of a meaning-making context that drives social mobilizations.

³⁵⁰ Original quote: “*El tema de límites es más competencia del estado central. (...) Nosotros como Secretaría de Minería no nos hemos entrado mucho en el tema de límites porque es un tema muy delicado. El tema de límites puede generar cualquier tipo de conflicto social entre municipios.*”

³⁵¹ Original quote: “*El otro problema es que el gobierno ha ido creando en el imaginario de la gente, no toda la gente es tan educada, incluidos nosotros los profesionales, un paradigma que Bolivia va a entrar en una etapa de alta tecnología con el litio.*”

7.3 Centralized Project Management and Stakeholder Integration

When trying to understand political grievances over lithium, it is important to engage with local knowledge about the project and stakeholder perceptions of their participation in the development of the initiative. The governance strategy of the GNRE has placed emphasis on local information and highlighted that the project is the result of a local (FRUTCAS) initiative. Yet, particularly with respect to the information level and content of community information, two important points of contestation emerge in the salar communities as local expectations remain unfulfilled. First, interview partners from the communities perceive shortcomings in the information given by the company and demand a more comprehensive consultation process considering their viewpoints. Second, community members identify a localized preference in the GNRE information strategy towards southern salar provinces, indicating the perception of group-based disadvantages and power imbalances.

A great majority of community members, as well as most analysts I interviewed at the national level, criticize that information on the project has been insufficient.³⁵² Already during the public consultation that was carried out in 2012, individual participants expressed uncertainty about signing the public act in support of the project since they needed more information on the initiative (Taucer and Anze 2013, chap. 4, 105). Different local interview partners stress that they have asked for more information from the company without success (e. g. interviews with E. Aguirre, 14.11.2015; M. Lérida, 9.11.2015, both Llica). Llica citizen Eliodoro Aguirre (ibid.) stated: “We have made claims for more information; they have not responded our letters.”³⁵³

Often, it was also underlined that the information provided was too superficial and general (e. g., in interviews with A. and L. Huayllas, Q. Amador, and L. Ali from Rio Grande, 25.4.2016; M. Belén and A. Cabrera from Colcha “K”, 27.4.2016), overly positive (such as in interviews with B. Mayorga from Colcha “K”, 27.4.2016; and F. García from Llica, 28.10.2015) or that the information did not advance from one presentation to the next (S. Llave from Colcha “K”, 27.4.2016). Individual interview partners stress that company reports are too complicated for locals to understand (e. g.

³⁵² The code “incomplete information” was the code I most frequently applied in my interview evaluation, 144 times in a total of 53 interviews. Among analysts, insufficient information was a topic e. g. with M. Lérida, 9.10.2015; C. Arze, 26.10.2015; J. Zapata, 5.11.2015; J. C. Zuleta, 2.12.2015; S. Escalera, 25.3.2016; P. Villegas, 23.3.2016; J. Campanini, 28.3.2016; G. Cortéz, 4.5.2016; R. Carvajal, 4.5.2016; D. Oropeza, 6.5.2016; and R. Anze, 6.5.2016.

³⁵³ Original quote: “*Hemos hecho reclamos para más información, no han respondido nuestras cartas.*”

interviews with C. Ramos from Colcha “K”, 26.4.2016; and C. Coallaviri from Tahua, 15.11.2015) or that locals obtain information from the television rather than from the company itself (E. Aguirre from Llica, 14.11.2015; A. Huayllas and L. Ali from Rio Grande, 25.4.2016; M. Belén and E. Yucra from Colcha “K”, 27.4.2016; M. Ramos from Uyuni, 28.4.2016). Julia Colque from the Municipality Council in Salinas de Garcí Mendoza concluded: “it is strange to see that after so many years of the project, we know nearly nothing”³⁵⁴, indicating frustrated expectations vis-à-vis government communication. Robb, Moran, Thom, and Coburn (2015, 25–26) made similar observations for other mining projects in Bolivia, where culturally sensitive information for indigenous communities was absent, insufficient, superficial, or inadequate for the recipients.

Based on my own observations, I agree that most of my local interview partners had no detailed knowledge on the government initiative and its execution. Nonetheless, all people I talked to possessed a basic understanding of lithium as an important resource, which many linked to electric cars. When looking at interview questionnaires from the consultation process for potassium from 2011 and 2012³⁵⁵, it becomes clear that specifically on these general aspects of the usefulness and value of lithium, local information levels have increased.

That local information has amplified is also underlined by Rafael Anze from the environmental consultancy Simbiosis (interview, 6.5.2016), who conducted the public consultation for the potassium project. When Simbiosis initiated the consultation process, local knowledge on lithium was very low, while, at the same time, the support for any kind of industrialization project in the region and the MAS government as such was nearly unanimous. In 2016, local knowledge on lithium is more substantial, yet there is also some hesitation about the MAS administration in general and the GNRE management of the lithium project in particular (ibid.). This is strongly linked to the observation that the project has been managed exclusively by the central government. Thus, while communities are not opposed to the project, it is criticized that locals and their organizations of social control are insufficiently involved in its management.³⁵⁶ As the director of community relations of Colcha “K”, Juan Llave, phrased it (interview, 27.4.2016): “therefore we are

³⁵⁴ Original quote: “*Es raro ver ahora, después de tantos años del proyecto, que no sabemos casi nada.*”

³⁵⁵ About half of the 75 people interviewed in 2012 (according to the consultation sheets) had heard about the project, while only 12 interview partners indicated that they knew what the program was actually about.

³⁵⁶ The limited involvement of social organizations in the project is also related to their weakness or absence in local salar communities which leaves only government institutions as voices of the local communities (interviews with M. Ayaviri, provincial delegate in Daniel Campos, 13.11.2015 and O. Choque, NGO Ayni, 23.9.2015).³⁵⁶

saying that it does not stop, that the project gets better, that there is more control. That's it. Besides this, the project is fine."³⁵⁷

The President of the Civic Committee of Potosí, Jhonny Llally, demands project management to be decentralized and recommends that COMCIPO itself or at least the departmental government becomes part of the GNRE directory to obtain more detailed information on a crucial industrialization project in the Department of Potosí (interview, 14.5.2016). Also, the head of the Municipality Association of Los Lípez, Icler Soto (interview, 28.4.2016), underscored that the regional salar organization has not been involved or specifically informed about the project.

One further aspect that has been frequently commented on in my interviews is that information campaigns of the GNRE have been reduced in the last years. While these events took place regularly in the early years of the project (at least in the southern parts of the salar), interview partners from Rio Grande and Colcha "K" concord that the GNRE has not appeared in the communities since 2014 (interviews with S. Calle from Llica, 14.11.2015; Q. Amador from Rio Grande, 25.4.2016; and J. Llave; B. Mayorga; R. Bernal; and A. Basilio from Colcha "K", all 27.4.2016). The mayor of Uyuni, Patricio Mendoza (interview, 16.11.2015), divided the project information campaign into two phases. First, the time when local actors petitioned that the project would be executed in their region, then people were most widely informed. After that, a second phase started, when GNRE began working on the plants and the industrial design, when information declined. I found that the regular visits prior to 2014 had raised expectations in the communities that this engagement would continue, which resulted in a deception with information management by GNRE in later years. Cooperative miner Luis Ali from Rio Grande (interview 27.4.2016) stressed: "they haven't come in the last years, three, four years before they have informed us, but this has declined. Before, the community was more connected. We want them to come back again. We are not here to put up obstacles."³⁵⁸

The GNRE identified the southeastern part of the Salar de Uyuni as the area that would be impacted the most (Taucer and Anze 2013, chap. 4). Consequently, communities outside of this area stress that the GNRE caters much more to the information and participation demands of the provinces

³⁵⁷ Original quote: "Por eso estamos diciendo que no se frene, que mejore el proyecto, que haya más control. Es eso. Después está bien."

³⁵⁸ Original quote: "No han venido estos últimos años, tres, cuatro años atrás nos han informado, pero han bajado. Antes la comunidad era más ligada. Qué otra vez vuelvan. No estamos para obstaculizar."

of Antonio Quijarro, Nor LÍpez, and the regional organization FRUTCAS than to claims from the northern Daniel Campos province indicating perceptions of unequal treatment (interviews with M. LÉrida, 9.10.2015; L. Morales, M. Ayaviri and a representative of the municipality government, all Llica, 13.11.2015; and A. Lopez from Tahua, 16.11.2015).³⁵⁹

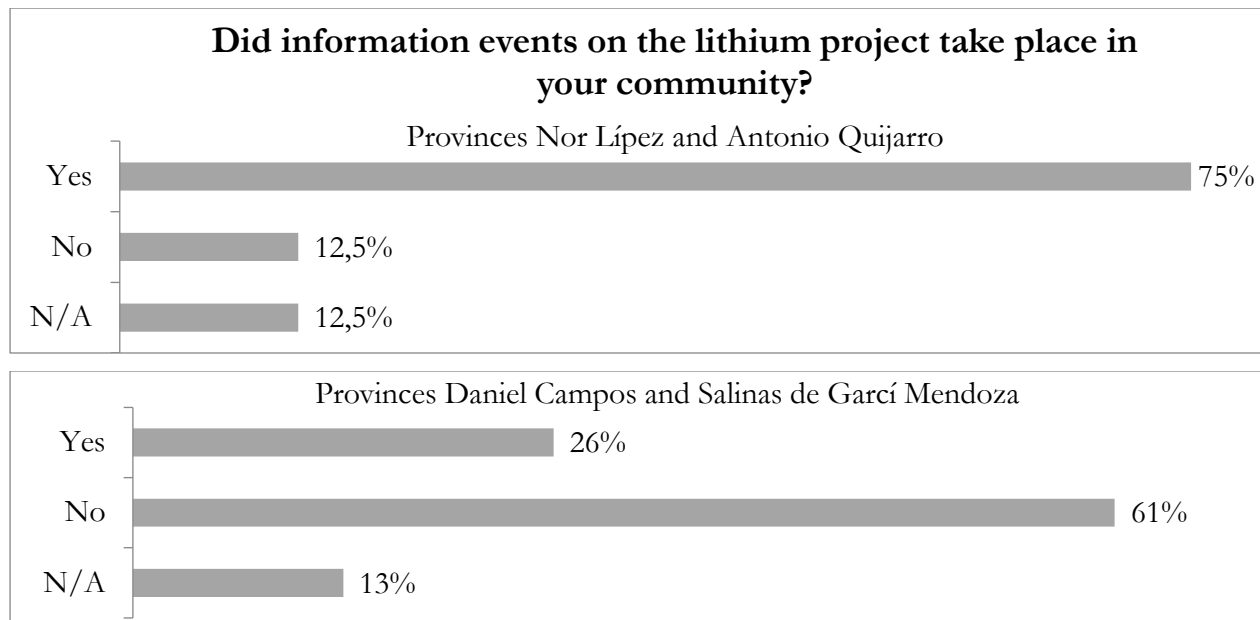


Figure 17: Information Events by Province

More than 60 percent of my interview partners in the provinces of Daniel Campos and Salinas de GarcÍ Mendoza expressed that no informative events or consultations had taken place in their communities (Figure 17). A representative of the municipality government of Llica (anonymous interview, 13.11.2015) confirmed that “the municipalities of Llica and Tahua have not been informed at all about the project,”³⁶⁰ while the head of the Llica quinoa corporation Dionisio Villca echoed that they were left out (in relation to the battery plant in La Palca): “they have not asked us for permission, there was no consultation. We have been taken by surprise. They have petitioned this secretly. The people in PotosÍ, they have been working on this for years.”

³⁵⁹ The northern salar province of GarcÍ Mendoza is hardly considered in community relations of the GNRE as it is part of the department of Oruro which has only minuscule territorial claims on the Salar de Uyuni. GarcÍ Mendoza is, however, affected by the project in the Salar de Coipasa, which has not been part of the environmental impact assessment and is also only a minor focus of GNRE communication initiatives and information material in general.

³⁶⁰ Original quote: “Los municipios de Llica y Tahua no han informado absolutamente nada sobre el proyecto de litio.” Villca: “No nos han pedido permiso, no habÍa consulta. Ha sido sorpresivo. Ocultamente han hecho los trámites.”

In comparison, 75 percent of my interview partners from Nor LÍpez and Antonio Quijarro (in Rio Grande and Colcha “K” in Nor LÍpez even 100 percent) indicate that the GNRE had visited their communities to inform them about the project (Figure 17). Yet, as has been outlined above, the frequency with which information is disseminated has also declined in the southern salar areas. The dominance of the southern block in project information and management is also linked to power imbalances created by a prioritization of rural union structures over other social actors. This particularly links to the special role of FRUTCAS in the initiation and control of the project. Peasant syndicates are stronger in the southern salar and FRUTCAS sustains important relationships with the municipal governments in the provinces of Antonio Quijarro and Nor LÍpez (Olivera Andrade 2014, 82–83). In the northern salar, however, FRUTCAS and peasant unions are less established actors of social control and are not accepted as social power brokers. FRUTCAS is also not very active outside of Potosí and thus not a relevant stakeholder for the inhabitants of the province of Garcí Mendoza in Oruro.

Particularly in the province of Daniel Campos, with its municipalities Llica and Tahua, the special position of FRUTCAS is widely criticized. This indicates frustration with existing power imbalances between the different social actors in the region. The involvement of FRUTCAS is rejected for three main reasons. First, the local union is linked to the registration of the indigenous territory in Nor LÍpez which includes large parts of the Salar de Uyuni and thus areas that Daniel Campos claims as part of its province (Calla Ortega 2014, 48). Second, FRUTCAS is considered to be a Quechua-dominated political organization and has consequently not gained much trust in the northwestern salar, where the Aymara have a stronger presence.³⁶¹ Third, FRUTCAS is perceived locally and nationally as a political organization and as the local political arm of the MAS government (e. g. interview CEDIB analyst P. Villegas, 23.3.2016).³⁶² Sigfredo Calle, former President of the Civic Committee in Llica, expresses the mistrust of many inhabitants of the Daniel Campos province towards the regional union as a politicized and biased organization (interview, 14.11.2015):

³⁶¹ Sigfredo Calle, former President of the Civic Committee of Llica, says about the local disputes (interview, 14.11.2015): “Moreover, we are Aymaras. They are Quechuas. In reunions, when they don’t want to, everything is done in Quechua and we are left on the outside.” Original quote: “*Además somos Aymaras, ellos son Quechuas, en reuniones, cuando no quieren, hacen todo en quechua y quedamos afuera.*”

³⁶² Also, interviews with analysts Ó. Ballivián, 15.12.2015; and G. Cortéz, 4.5.2016 as well as with locals C. Ramos from Colcha “K”, 26.4.2016; M. LÉrida, 9.10.2015; F. García, 28.10.2015; and S. Calle from Llica, 14.11.2015.

“FRUTCAS has direct contacts with the government. If those from FRUTCAS were peasants, they would talk about agriculture but they are politicians (...). FRUTCAS manipulates, they do not allow that the ideas of the Daniel Campos province are executed.”³⁶³

Added to this is the fact that FRUTCAS, as the only communal organization involved in project planning and thus potentially able to take over functions of social control, has also been seen as having certain disconnections from the project after 2012. When FRUTCAS criticized delays in the lithium initiative, this supported a rupture with GNRE (Olivera Andrade 2014, 80). Former FRUTCAS officials (F. Condori, 1.12.2016, F. Mamani, 19.4.2016; and E. Calizaya, 13.5.2016) as well as several community interview partners (including Q. Amador and L. Huayllas of Rio Grande, both interviewed 25.4.2016) emphasized that the organization has been less involved in the project in the last years, also because the current leadership of FRUTCAS is less active. Former FRUTCAS President Freddy Mamani, stressed (interview, 19.4.2016):

“Although it [the project] is in its implementation phase, we, the former leadership say auto-critically, in the beginning it was FRUTCAS, COMIBOL, Evaporite Resources of the Salar de Uyuni, the instance, the entity, together. But with the renewal, the change of authorities, now the lithium project seems to be more of the state government without the participation [of FRUTCAS], I would say, in all of this process.”³⁶⁴

Froilan Condori, former mayor of Uyuni and ex-President of FRUTCAS (interview, 1.12.2015), further underlined that since the MAS government took office, many government-supporting social organizations became part of the government and that internal struggles have taken important tolls on the clout of organizations such as FRUTCAS.³⁶⁵ At the same time, independent local organizations and citizens lack the necessary resources and access to information to monitor government management of the project. This entails that local organizations cannot provide a meaningful check on the initiative and carry out a social control function. Moreover, in other mining

³⁶³ Original quote: “FRUTCAS tiene contacto directo con el gobierno. Ellos de FRUTCAS, si fueran campesinos hablarían de cosas agrarias, pero ellos son políticos. (...) FRUTCAS manipula, no dejen que se cumplan las ideas de la provincia de Daniel Campos.”

³⁶⁴ Original quote: “Si bien [el proyecto] está en su etapa de implementación, ahí también, autocríticamente los ex-dirigentes, decimos que al inicio era FRUTCAS, COMIBOL, Recursos Evaporíticos del Salar de Uyuni, la instancia, la entidad, juntos. Pero con la renovación, el cambio de dirigentes, ahora el proyecto del litio más parece también del gobierno estatal sin la participación [de FRUTCAS], diría por lo menos, en todo este proceso.”

³⁶⁵ On my question of how he sees the involvement of FRUTCAS at present, Froilan Condori answered: “A little bit disconnected, because it [the project] is more technically, and, well, the organizations used to be stronger when we weren’t with President Morales, because there was someone to fight with (laughs). Now we do not have anybody to fight with. Now we are part of the government and we fight amongst ourselves (laughs). It is a serious problema.” Original quote: “Un poco alejado, porque [el proyecto] es más técnico y bueno, las organizaciones estaban más fuertes, cuando no estábamos con el Presidente Morales, porque había con quien pelear (ríe). Ahora ya no tenemos con quien pelear. Ahora somos parte del Gobierno y nos peleamos entre nosotros (ríe), es un problema serio.”

projects, the MAS government has shown a tendency to bypass social and indigenous organizations altogether in favor of individual negotiations with communities (Pellegrini and Ribera Arismendi 2012; see also Chapter 4.4). In the lithium project, however, instead of negotiating through social organizations or directly with communities, the central government has, at least after the uncoupling of FRUTCAS from the project, abstained from any kind of meaningful cooperation with local communities in designing the initiative.

Individual interview partners have linked these intransparencies to problems of corruption in the program and the government itself (anonymous interviews e. g. in Potosí, La Paz and Llica in April and May 2016). However, other than could be expected considering the historic dimension of corruption prevalence in Bolivian resource sector (compare Chapter 4.2) and the rather high general corruption as indicated by Transparency International scores (compare Chapter 2.4.2), the matter of corruption in the lithium project has only been a topic of individual local interviews. This demonstrates that corruption has, at least until 2016, not been a major factor in the local meaning-making and the interpretation of the project.

Information management, transparency, and stakeholder integration have, next to rent management, proven to be the most contested aspects of resource governance in local communities. While local actor expectations about the milestones that were communicated in the beginning of the lithium initiative have continuously been missed, community information by the company and control by social actors have similarly declined. This strengthens local perceptions that the project is managed from above and that their opinions and participation are not relevant to the central government. Particularly in the northern salar area, this supports the feeling of governmental partisanship for southern demands in the lithium project, placing the northern frontier municipalities at a continuous disadvantage. That project information is perceived as insufficient and tilted also links to economic grievances. In relation to rent management and employment, locals fear that their benefits are funneled away from them behind their backs.

7.4 Local Viewpoints on Externalities and Environmental Governance

Lithium and potassium industrialization, like all industrial mining projects, will necessarily impact on the area of implementation. Case studies from all over the world have underscored that mobilizations in resource projects have repeatedly been triggered by impacts on the environment and local livelihoods. Moreover, in Bolivia, environmental concerns have long been politically undervalued. Particularly in the neoliberal era of the 1980s and 1990s, environmental and social regulations were loosened on mining projects to attract investments from abroad (Arze Vargas and Kruse 2004; Hindery 2013). The environmental code that is in place since 2001 was published in the early 1990s and follows a political mind frame that environmental concerns should not hamper productive projects for development.

With the government of Evo Morales, a different discourse entered the political arena, suggesting that economic development should be sought in harmony with nature. Yet, as has been extensively discussed in Chapter 4, national and international realities in the light of a tremendous resource boom motivated the government to separate discourse from practical policy making. The MAS now equally targets an extension of extractive practices and a pursuit of new industrialization initiatives based on the country's vast natural resources. Scholars of neo-extractivism argue that an expansion of exploitation initiatives, together with an insufficient externality management, will result in direct impacts on local livelihoods (Andreucci and Radhuber 2017; Bebbington 2012; Engels and Dietz 2014; Gudynas 2015a; Svampa 2013). Particularly in the light of discursive contradictions, this could support mobilizations against the extractive development model.

Local interviews, however, showed that mining-based development has wide local support and possible environmental impacts are less important concerns in the communities. In the interviews, a great majority of respondents made only very general references to potential environmental dimensions of the lithium and potassium project. Frequently, the environment was not actively mentioned by the speakers but only discussed after an interviewer impulse was given. When relating to nature and the environment, locals frequently underscored that the environment is important, that it needs to be protected, that there are local concerns about the environment, without going into details or voicing concrete demands. Francisco Lopez, an indigenous authority from Llica (interview, 14.11.2015) told me, for example, "there is preoccupation about the environmental

impact. The factory, the company that will enter could possibly have an environmental impact,” while Eugberto Cayo, school director in Colcha “K” (interview 27.4.2016) stressed, it “could be that an [environmental impact] exists, because at some point they can use some chemicals, and this really, in some ways, could have an effect.”³⁶⁶

A continuing problem is the limited information on the environmental impacts. Many interview partners stressed that they do not fully understand the consequences of the project on the environment. Most frequently mentioned are concerns about water and contamination, which are very general preoccupations in the mining industry. The limited government and non-government studies on lithium impacts, such as the EEIA or the CEDLA study, are not known in the region I visited, at least there was no reference made in any of my local interviews. Rolando Mamani, secretary in the municipality government of Salinas de Garcí Mendoza (interview, 11.5.2016), told me: “maybe it could have negative impacts, but we don’t know. But I imagine that if they existed, they will be of a minor scale, I don’t think it will be much, (...), the salar is nearly intact, it does not have much use; it is more touristic.”³⁶⁷

The limited information has produced two contradictory responses. In most interviews, limited knowledge resulted in giving less importance to environmental factors as livelihood grievances (see above). Other respondents, however, linked all kinds of phenomena to the lithium project, for example, the extremely dry periods the salar region has been experiencing. Javier Calani, head of the *ayllu* Huatri and member of the Municipality Council of Salinas de Garcí Mendoza (interview, 11.5.2016), told me:

“Already there is no rain, no water. There is a well that COMIBOL shares with two communities (...). The rain has changed its path; it does not rain as it used to. The community that has authorized the exploitation, needed to emigrate to the city. COMIBOL paid for it. The peasants start to curse, why has the company come? It could be that the gas disperses the rain in a different direction.”³⁶⁸

³⁶⁶ Original quotes: Francisco López: “Hay preocupación por el impacto ambiental. Posiblemente haya impacto ambiental con la fábrica, con la empresa que va a entrar.” Cayo: “Puede que exista [impacto ambiental], porque algún momento, que pueden utilizar algunos químicos y esto realmente puede también, de alguna otra forma, afectar.”

³⁶⁷ Original quote: “Puede ser, tal vez podría tener impactos negativos, pero no sabemos. Pero me imagino que, si existiera, va a ser en menor porcentaje, no creo que sea mucho (...). Casi el salar está intacto, no tiene mucho uso, más es turístico.”

³⁶⁸ Original quote: “Ya no hay lluvia, no hay agua. Hay un pozo que se está compartiendo COMIBOL con dos comunidades (...). La lluvia ha cambiado en su rumbo, ya no llueve como antes. La comunidad que ha permitido la exploración, tenía que emigrar a la ciudad. COMIBOL ha pagado. Los campesinos empiecen a renegar, ‘¿por qué ha venido esa empresa?’ Puede ser que el gas dispersa la lluvia a otro lado.”

There is no further media information of any displacement connected to the impacts of the lithium project in the Salar de Coipasa. Thus, it seems more likely that the limited information has supported the creation of rumors and fears which a more comprehensive information campaign could have confronted (see Chapter 7.3).

While different analysts and NGOs voiced environmental concerns, only few people in the local communities told me that they expect major impacts from the lithium and potassium project or that they want the project to stop advancing because of the environment (e. g. interviews with A. Lopez, Tahua, 16.11.2015; and G. Mayorga, 11.5.2016). Existing critical opinions were mostly linked to potential impacts on socioeconomic activities, specifically quinoa production, related to the idea that the high water use and the employment of chemicals could affect organic quinoa quality (interview with J. Yucra from Colchani, 28.4.2016; and the Municipality Council of Salinas de Garcí Mendoza, 11.5.2016). Gladys Mayorga from the quinoa cooperative Proquinbol in Salinas told me (interview, 11.5.2016):

“But we are also a production zone of organic quinoa. We cannot allow them to exploit all of our salt lakes (...). Big companies will exploit potassium and lithium, and they will take [all of it] and the royalties will be minimal and there is the great risk that this will destroy the environment (...). With the exploitation of the salt lakes, it could kill all organic quinoa production.”³⁶⁹

Yet, all in all, support for the project in local communities with a view to its potential economic benefits continues to be strong and a certain indifference becomes visible vis-à-vis environmental risks. The responsibility is delegated to the government which, it is assumed, has taken care of the problem and will use adequate technology and implement the necessary measures of mitigation. The head of Uyuni Social Control, Mario Ramos (interview, 28.4.2016) told me:

“The truth is that I can’t tell you, but I imagine that they have done an environmental study because every project has to have that. I am not much into the topic but I suppose that they have done that. And if that is approved, I don’t think that there will be major contamination of the environment.”³⁷⁰

³⁶⁹ Original quote: “*Pero somos también zona productora de quinua orgánica. No podemos permitir que exploten por completo nuestros salares (...). La explotación de potasio y litio van a ser grandes empresas y se van a llevar [todo] y la regalía va a ser mínima y hay el gran riesgo que destruye el medio ambiente (...). Con la explotación de los salares, mataríamos toda esa producción orgánica.*”

³⁷⁰ Original quote: “*La verdad es que no sabría decirle, pero supongo que han hecho un estudio medioambiental, porque todo proyecto tiene que tener eso. No estoy muy interiorizado en el tema, pero supongo que haya esto. Y si eso está aprobado, no creo que haya mayor contaminación al medio ambiente.*”

This highlights a certain local trust in government judgment and responsibility of COMIBOL and GNRE. As has already been emphasized, the rural support for the MAS administration in the salar area is strong and most communities are politically headed by a MAS authority giving momentum to the MAS framing of the lithium project as the centerpiece of its sovereignty strategy. The MAS-critical former mayor of Llica, Fausto García (interview, 28.10.2015), linked this political support to the limited interest of local communities to study potential impacts of the project in more detail. It is not only the local trust in government judgment that makes the environment a secondary concern. Many local communities, struck by economic hardship, see little alternative to a mining economy to secure their livelihoods, despite environmental impacts. As the mayor of Uyuni, Patricio Mendoza (interview, 16.11.2015), expressed: local communities “have and always have had hope, this has not changed, meaning that the salar, for all of us, is a resource that will help us to be able to develop.”³⁷¹

In the light of the potential importance of the project for local development, environmental aspects are sidelined. In this context, several analysts I interviewed refer to the path dependency in Bolivia’s history of extractivism which has created a rentier mentality that comes with an acceptance of environmental impacts of mining.³⁷² Consequently, analyst Fernando Molina (interview, 13.4.2016) is not convinced that environmental concerns will become mobilizing grievances:

“I am very cynical about this because this country, like I told you, always is a mining country, thus, it is accustomed to adapt to the incommunities or to the damages that exploitation causes, as long as it is economically beneficial (...). And you cannot take mining away from villages that do not have anything. There is nothing there.”³⁷³

For the local population and local authorities, economic impacts, and employment opportunities are the most important concerns and are likely to create economic grievances. Livelihood grievances about the environment are, however, not central to meaning-making. Even in relation to the valuable good water in the water-scarce saline desert, the population is open to grant the company large-scale access in hope of a financial payback. Crecensio Ali, indigenous authority of Colcha “K” (interview, 28.4.2016), told me that the project “is what the community wants and we want to

³⁷¹ Original quote: “Ellos tienen y siempre han tenido, eso no ha cambiado, la esperanza. O sea, el salar para todos nosotros es un recurso que nos va a ayudar para poder desarrollar el pueblo.”

³⁷² Interviews with O. Choque, 23.9.2015; P. Villegas, 23.3.2016; and F. Molina, 13.4.2016; local interviews with F. García, Llica, 28.10.2015; and C. Coallaviri, Tahua, 15.11.2015.

³⁷³ Original quote: “Yo soy bien cínico respecto a eso porque este país, como te digo, siempre es un país minero, entonces, está acostumbrado a adaptarse a las incomodidades o a los daños que causa la explotación, tanto sea beneficiosa económicamente. (...). Y no les puedes quitar la minería a unos pueblos que no tienen nada. No hay nada ahí.”

support it with water or with any liquid thing, like water, that we have. Yes, we are capable to support them. It does not inconvenience us at all.”³⁷⁴

Similarly, the attorney of Colcha “K”, Andrés Basilio (interview, 27.4.2016), stressed, “we are disposed to give them water to obtain work.” Limbert Huayllas, municipality authority from Rio Grande (interview 25.4.2016), called this exchange of water for work “the small margin of coexistence” with the company. Linking back to the dominance of benefits in the discourse, individual analysts argued that environmental concerns will only come to the forefront when the economic benefits do not materialize, as a way to demand compensations (interviews with F. Molina, 13.4.2016; and H. Córdova, 21.10.2015).

Beyond the local tendency to value economic resources over environmental wellbeing are important power imbalances between the national government and local communities. The government framing of the lithium project as a development opportunity for the whole country gives rural communities little leeway to block a national initiative or to seek significant changes in environmental governance. The sub-prefect of Nor Lipez, Beimar Mayorga from Colcha “K” (interview, 27.4.2016) told me, very reflectively, in response to the question of what information he would like to have from the company:

“And this situation, to see what we can do if contamination existed, the ways to protect ourselves. Because we cannot stop a national project, especially if it will bring good economic resources for the state. If we stop this, it means stopping all of the country at the same time. But we, how can we act?”³⁷⁵

Similarly, the bailiff of Colchani, Joaquín Yucra (interview, 28.4.2016) underlined that the project will impact local communities negatively, while it will be an important milestone for the country at large: “the project is advancement in science and technology at the national level, but for the people here it can cause grave problems.”³⁷⁶ Thus, the framing of the project at the national level and the perception of their own disadvantaged position has had important impacts on local meaning-

³⁷⁴ Original quote: “Eso es lo que quiere el pueblo y nosotros queremos apoyar con agua o con alguna cosa liquida, como el agua, que tenemos. Sí, nosotros estamos aptos para apoyarlos. Nosotros no tenemos ningún inconveniente.”

³⁷⁵ Original quote: “Y esa situación, para ver, nosotros también que podemos hacer si existiese contaminación, las formas de cómo cuidarnos. Porque no podemos frenar un proyecto nacional, también si va a brindar buenos recursos económicos al estado. El frenar nosotros, es frenar a todo el país también. ¿Pero nosotros como podemos actuar?”

³⁷⁶ Original quote: “El proyecto es un adelanto en la ciencia y tecnología a nivel nacional, pero para gente de aquí nos puede causar problemas graves.”

making about the initiative, indicating a frustration about the limited consideration of local knowledge and viewpoints in the initiative, despite its potential national impact.

Further potential negative externalities besides environmental aspects and impacts on quinoa production are hardly discussed in the interviews. Only one interview partner referred to health concerns (interview F. García, Llica, 28.10.2015). Other aspects that were infrequently mentioned included preoccupations about the cost of living that could further increase with the plant and more economic activities in the area (interviews with G. Roelants, 20.5.2016; and F. Mamani, 19.4.2016). Some interview partners, mostly from the national NGO side, were concerned about impacts on tourism.³⁷⁷

In summary, it can be said that local viewpoints on environmental externalities of the lithium and potassium project are varied but mostly unconcerned. Environmental governance is seen as a major responsibility of the government in general and GNRE and COMIBOL specifically. Many interview partners are convinced that when existing laws are followed and modern mitigating technology is used, impacts of the project will be minor. Whether GNRE has allocated sufficient funding, whether the company followed the existing legal framework, and how it has assessed environmental impacts are questions of limited concern for interviewees. Moreover, communities are barely informed about potential impacts of lithium and potassium industrializing and do not have access to information on these aspects, indicating important imbalances in knowledge between the local and the national level. Moreover, the remoteness of the exploited area and the small size of local communities provide little leeway to challenge the government and demand information or policy changes. Therefore, environmental grievances do not seem to possess an important mobilizing potential, at least not in the current context of meaning-making about the project that prioritizes socioeconomic development.

³⁷⁷ Interviews with P. Villegas, NGO CEDIB, 23.3.2016; J. Campanini, CEDIB, 28.3.2016, F. Peñailillo, SOPE, 19.11.2015; also B. Mayorga from Colcha “K”, 27.4.2016; and A. López from Tahua, 16.11.2015.

7.5 Summary in the Light of the Analytical Framework

The first part of the case study in Chapter 6 analyzed the Bolivian lithium project with a focus on different dimension of its governance. Based on my theoretical model, I hypothesized that the governance instruments employed would significantly impact meanings awarded to lithium and on local grievances connected to the initiative. The second part of the case study in Chapter 7 engaged with perceptions of the lithium program and used interview data to compare theoretical expectations in a congruence test with local observations. Thereby, I focused my analytical attention on the meanings people award to lithium, on the grievances that are visible in the project, and how different dimensions of governance impacted on local perceptions of the program as well as the development and interpretation of existing grievances. In the following, I will discuss central findings along my variables lithium governance, grievances and local meaning-making as well as other context factors, including the government's framing of the initiative.

7.5.1 Lithium Governance

In Chapter 6, I analyzed the governance of the lithium initiative in Bolivia with a specific focus on its different dimensions as defined in my theoretical model. These included the internal organization and the decision-making framework, the inclusion of local stakeholders and organizations of social control, questions of monetary benefits and their distribution in local communities, and the assessment of potential externalities including the development of mitigation instruments. I hypothesized that the governance of the lithium project, as the flagship initiative of the public strategy in mining of the Bolivian MAS government, would show central features connected to a public management of mining resources.

Public resource management has been linked to a focus on long-term revenue generation (in comparison of short-term gains envisioned by private mining actors) and the implementation of an integrative governance approach to increase public approval (Acheson 2006; see also discussion in Chapter 2.4.2). At the same time, public management of resource projects has also often been connected to nontransparent institutions, a bureaucratic simplification of context and an insufficient analysis of social, environmental, and financial risks (Acheson 2006; Mildner, Lauster, and Wodni 2011a; Scott 1998). I expected similar developments in the governance of lithium,

although the prominent environmental focus of the MAS government and the *vivir bien* discourse could have indicated otherwise. Research on Bolivia has, however, pointed to important contradictions between this discourse and the limited practical implications of this focus on mother earth in the implementation of mining projects (see Chapter 4.5.2).

The findings on the Bolivian lithium governance strategy showed that classic shortcomings connected to a public management of resources are present in the initiative, while the MAS government has also tried to overcome inherent problems. The MAS approach to lithium industrialization envisions a long-term national economic benefit through knowledge-generation and value-adding in the country. While private (transnational) companies that exploit resources in Bolivia tend to focus on raw material export and rely on foreign expert personnel, the GNRE seeks local value-adding and the generation of local industry and jobs. Despite shortcomings in the approach (lack of knowledge, personnel, market), it envisions a lithium strategy that fundamentally differs from neighboring lithium exporters and indeed seeks a limited separation from exploitative structures that have driven economic and social imbalances in the past. As will be discussed further below, this vision of sovereignty is central for local communities in their interpretations of the initiative.

Yet, within this nationalistic and sovereign focus on lithium industrialization, the government has sought a highly-centralized approach that does not include sub-national state entities (beyond minor oversight functions at the departmental level), local organizations beyond the MAS ally FRUTCAS or local communities. In relation to the lithium project, I showed that the MAS administration has opted for centralization particularly in the fields of revenue and information management. In revenue management, the MAS government prioritized national development over local benefits by centralizing taxes to the national level and royalties to the departmental level. At the same time, royalty obligations for lithium and potassium have been set considerably lower than they are set for other minerals. This reduces royalty payments at the central state level and impacts the local participation in project income.

Another central aspect of lithium governance is the institutional framework in which the initiative is developed. The conservation of ownership rights to lithium and potassium by the central government and the impacts this had on land titling and land rights is locally relevant. The LMyM of 2014 created specific regulations for strategic resources to be exploited exclusively by the central

government, while the fiscal reserve over the Salar de Uyuni further secured a non-participatory management of these resources by that central state level. I have shown that this severely affects communal land claims in the area where lithium is exploited. At the same time, to secure local support for this centralization strategy, certain FRUTCAS-backed collective land claims were prioritized over others, which significantly impacted administrative and cultural realities in rural salar municipalities. In the resulting design, the only local access to monetary participation in the project is through a share in royalties for the producing municipality. Nonetheless, this royalty is not significant and which municipality gets this funding has not been clarified. The problem is further enhanced as different government institutions take diverging positions on which province “owns” the salar territory and has access to these royalties, while the lithium organization GNRE does not take a clear stand on the issue.

A further problem is the limited study of environmental impacts, including the limited involvement of neutral scientific actors and local communities in environmental governance. While the GNRE has conducted an environmental impact assessment and a public consultation in the framework of the environmental legislation, I showed important limitations in the implementation and the content of the assessment. Other potential impacts on socioeconomic structures and cultural practices (see the discussion on land rights above), have not received much government attention. Moreover, the Bolivian government has developed bureaucratic nontransparent structures of environmental governance and anchored its mitigation strategy in an unbacked trust in the potentials of technology.

In general, it can be said that the lithium governance strategy has significant impacts on local communities. Different aspects are of crucial relevance for local stakeholders as they influence their participation in revenues, knowledge about the initiative, and the mitigation of potential externalities of lithium industrialization. In the following, I will discuss my findings on the impacts of governance on meaning-making and grievance interpretation in the lithium program. The case study showed that certain governance dimensions were more relevant for the creation and interpretation of grievances than others. Also, contextual conditions impact local interpretations and the escalation potential of existing grievances.

7.5.2 Lithium Grievances and Local Meaning-Making

The second part of the case study in Chapter 7 analyzed grievances. I approach grievances with the lens of meaning-making focused in local perceptions and interpretation of the resource initiative. Local context factors in which the resource project is embedded are relevant for the formation of group-based, emotionally felt grievances. Governance is an important component of this meaning-making context and can support the assessment of the likelihood of social movement and conflict formation.

Based on a congruence test of my theoretical model with the empirical cases, I assess emerging grievances in relation to their content. Economic grievances emerge over the generation and distribution of (potential) material benefits of the project, including revenues, employment, and infrastructure. Livelihood grievances connect to the impact of a resource project, on local ways of life or the environment, for example. Political grievances emerge from the institutional conditions which shape a resource project and connect to underlying formal and informal rules such as land rights, questions of information-sharing and consultations, and the arrangements of social control. All grievance categories can thereby manifest as different types, meaning that an economic, political or livelihood grievance can emerge as a subsistence threat, based on frustrated expectations or experiences of disadvantages (e. g. because of power imbalances).

Economic grievances connected to rent management and distribution proved to be the most deeply felt concern in local communities. The limited local participation in benefits is, as local activist Milton Lériida (2015) challenged “discrimination and the reason why the population of the southeast [of Potosí] lives in a complete and extreme poverty”³⁷⁸ The quote indicates what I found across all salar communities: a continued connection of the lithium project and its potential monetary implications to past experiences and a historic consciousness of having been treated unfairly by both the government and opposing local groups. This perception of injustice is not unfounded. The established revenue sharing regime for lithium income disadvantages local communities over national and departmental actors. They become outsiders in a resource project that targets income at the central state level instead of local development.

³⁷⁸ Original quote: “Esta distribución de las regalías mineras es una discriminación, motivo por el cual la población del Sud Oeste [de Potosí] vive en una total y extrema pobreza.”

I found that local communities do not yet fully realize the limited extent of their participation in lithium revenues. The government's framing of the initiative as a centerpiece of the country's industrialization strategy has promised important income. These expectations connect to a critical economic situation in the region. Particularly in the northern areas, climate change, and impacts on quinoa production have supported a significant downturn in the local economy, while income in the remote areas cannot be substituted by mining or tourism. Quinoa failure has thus produced a threat to subsistence that has resulted in people attaching high expectations to lithium. Local communities envision lithium becoming their future economic basis. All over the Salar communities, I observed expectations of a large-scale local participation in lithium benefits, through royalties, local employment, and infrastructures, resulting in an urbanization of the region. I also found that these expectations have subsequently been disappointed with the continuous delays in the program, the limited visibility of real impacts in local communities, and the employment of workers from outside the area. These frustrations, which already generate local fears of continued economic hardship, are likely to increase. I showed that in the lithium project, even if production starts, direct benefits will never live up to the monetary expectations and employment demands that government communication and subsistence threats created. At the same time, the current legal framework, which channels nearly all monetary benefits away from the municipality level, is not even fully understood in local communities which expect their monetary participation to be higher (while, simultaneously, not high enough).

A second important economic grievance is the distribution of even these limited (and still potential) benefits. I found that the question of revenue-sharing is highly significant for the local interpretation of the project. Because land rights and the administrative anchoring of the Salar de Uyuni have never been sufficiently defined, revenue distribution can be considered the most challenging governance issue in project and the one with the largest frustration potential. First, because local royalties from the program will be small, dividing them between different municipalities will increase grievances all over the region. Second, questions of land rights and ownership of the Salar de Uyuni are emotional issues in the communities. The question of which municipality the Salar de Uyuni administratively belongs to has been contested by local communities since the 1950s. Moreover, this is connected to territorial decisions in the colonial era. Interview partners showed a high consciousness of these aspects, referring to historic events in the 16th century to underline their specific claim to the territorial ownership of the salar. The fact that this ownership has become connected to a valuable natural resource and royalties from an important industrialization initiative,

has raised identity stakes in the project and could serve as an important unifying factor in mobilizations (compare Mähler and Pierskalla 2014).

Moreover, regional rivalries over the ownership of the Salar de Uyuni also involve important cultural dimensions and relate strongly to perceived past injustices. The different local provinces, particularly Nor LÍpez, where most inhabitants are Quechua, and the Aymara-dominated province Daniel Campos, are historically and culturally estranged and distrust each other. Particularly, the inhabitants of the northern province of Daniel Campos fear strongly that the project will be captured by Nor LÍpez, when, in historic repetition, the central government forgets the remote frontier municipality and hands monetary favors out to political followers and better connected actors such as FRUTCAS. These local fears and perceptions of inequalities impact the interpretations of the lithium project and could cement existing local-local and local-national power imbalances.

Against this panorama, many analysts I interviewed see the topic of rent distribution “with increasing preoccupations” (interview with F. Mamani, former President of FRUTCAS, 19.4.2016)³⁷⁹. They concur that rent generation and distribution impacts the local interpretation of the project significantly and that these grievances can become an important conflict trigger (for example, interviews with J. Campanini, 28.3.2016; G. Roelants, 20.5.2016; J. C. Montenegro, 5.11.2015 and R. Apaza, 17.11.2015). Particularly in the Daniel Campos province, I found that grievances over revenue distribution already go beyond individual concerns and demonstrate a collectively and emotionally felt nature that strongly relates to local livelihoods, historic experiences, and the perceptions of power imbalances between the opposing blocks.

I also observed that economic grievances over lithium and evolving frustrated expectations in this area connect to second important governance issue, namely the integration of local communities in the project displayed by their level of information. The frequency of this topic in local interviews indicates the importance of this political grievance in the interpretation of the project. Local interview partners have, in all the communities I visited, complained about their limited involvement in the initiative, inadequacies in information management, and social control. They demand continuous informational updates on the project, including regular visits from the

³⁷⁹ Original quote: “Y el otro tema, vemos con bastante preocupación, es el tema de cómo distribuir las regalías que generan estos recursos naturales.”

company, community programs to increase local participation targeting local employment, as well as meaningful consultations, particularly on the extent and distribution of benefits. These feelings of inequalities are further enhanced by the perception, particularly in the northern block, that the government's communication strategy and focus of community activities favor the provinces of Nor Lipez and Antonio Quijarro, where the influence of FRUTCAS is stronger, over the less unionized northern region. This, again, connects to the above outlined cultural distrust and the perception of historic and political power imbalances between communities.

Based on the literature discussion, I expected a third important grievance dimension to emerge over potential impacts of lithium industrialization on the environment and local livelihoods. The congruence test of local responses with theory, however, showed an important divergence. Environmental concerns were only considered superficially in the local discussions on the lithium initiative, which was framed near exclusively around its potential benefits. This is related to different important context factors that impact on meaning-making about the project. Local inhabitants strongly related to the history of Bolivia as a mining country and the local experiences with mining. While mining can result in environmental impacts, it also provides the necessary economic income, which locals consider more essential for their livelihoods than environmental resources. Thus, before strongly experienced subsistence threats, local acceptance of mining and its impacts is high. I found that local communities do not seek a different kind of non-resource, non-lithium based development. Consequently, it can be established that environmental livelihood grievances do not resonate as much with local communities as economic grievances do. As a result, environmental concerns fail to develop into a mobilizing context in the lithium project.

7.5.3 Context Factors and Framing

In the present study, I showed the importance of governance as a component of local meaning-making and the relevance of meanings to create conditions for social movement formation around collectively interpreted grievances. In the Bolivian case study, I found that a lithium governance strategy anchored in the centralization of project management, especially in relation to information and revenues has deepened local grievances. Environmental concerns have, however, proven less relevant in the local interpretations of the project. The emergence of a social movement, however, does not only depend on these grievances but on the interaction of local meanings awarded to

grievances with relevant context factors as well as competing frames. In the following, I will elaborate on these contextual conditions.

While I showed that emotional and collectively felt grievances, particularly economic grievances over revenue distribution, exist in the salar communities, no visible social conflict has developed to date. Following the definition of conflict from the Heidelberg Institute for International Conflict Research (2013), the lithium project does not yet connect to observable conflict means outside of established regulatory procedures, in contrary to lithium mobilizations in the early 1990s. I found that the non-emergence of conflict over relevant grievances can be explained by four factors that impact on meaning-making in a way that local interpretations of grievances are not (yet) strong enough to create groupness for movement formation.

First, the project does not yet create significant revenues for local distribution. I have discussed that local communities experience a subsequent deception of their expectations regarding lithium revenues. Nonetheless, I also found that these failing expectations are not yet frustrating the widely present local hope connected to lithium. In my interviews, the perception of the project in the communities was still majorly positive. Local inhabitants see no alternative to the success of the initiative for the securement of their livelihoods, especially in light of existing threats to subsistence. At the same time, the non-existence of benefits diffuses the central economic grievance of revenue distribution. As long as factual regulations on sharing royalties and actual money flows do not materialize, questions about distribution will not likely lead to mobilizations. As former prefect of Potosí Daniel Oropeza (Interview, 6.5.2016) phrases it, “nobody can fight for the crumbs of a cake that has not yet been made.”³⁸⁰

A second related aspect that influenced local meaning-making is the gradual non-compliance with community expectations as a governance strategy. I found that the limited transparency on regulations of revenue distribution has had de-escalating effects on grievance interpretation. In the lithium case, important culturally and historically framed cleavages exist between local communities. In light of these rivalries and considering the importance of lithium income for local livelihoods, the design of a revenue distribution scheme to benefit of one actor over another could very likely create significant and mobilizing grievances. While normatively questionable, the government’s

³⁸⁰ Original quote: “*Nadie puede pelearse por las migas del pan de una torta que todavía no se ha hecho.*”

centralization of benefits, intransparencies, and the inconclusive argumentation on existing rights has hindered a joint local interpretation of the problem at hand. As the factual distribution is disguised, this has not created conditions for the escalation of inter-communal economic grievances over revenue distribution and connected land rights. Limited transparency thus becomes an important political instrument of conflict containment.

On top of these issues is a third point; the way in which the MAS frames the project. The MAS administration has defined lithium as the flagship of a new sovereign approach in mining that aims at national industrialization. It has also connected the project to important revenues for national and local development. I have outlined that this can add to a gradual frustration of local expectations towards the lithium project. Yet, at the same time, the MAS discourse that presents lithium industrialization as a central strategy to reach a greater independence from neoliberal market structures has been interpreted by local communities with a positive pre-disposition towards the Morales administration. While MAS support has been tumbling in urban areas, rural backing for Evo Morales is continuously strong, especially in southwestern Potosí. The MAS has been elected by the rural poor also because it promised to stop a sell-out of Bolivian resources and place natural resource governance in public hands to the benefit of the Bolivian people. By framing the lithium project as a cornerstone of this strategy, it is, at least discursively, living up to its promise. I found that, at least until 2016, this positive MAS-frame and the local support particularly for Evo Morales himself has suppressed economic grievances and an emerging dissatisfaction with lithium benefit governance. It is before this positive predisposition towards the MAS that the limited local relevance of the national discourse on contradictions between the environmental *vivir bien* agenda and the expansion of extractivism must be understood. This also shows that other framings of the lithium project as neo-extractivist with a limited potential for local development, as voiced by civil society and academics at the national level, were irrelevant for meaning-making in the communities.

This rural MAS support needs to be contrasted to the limited engagement of national civil society in the lithium project as a further important context factor. As will be discussed in more detail in the following Chapter 8, lithium protests in Argentina emerged from a collaboration between local communities and urban environmental organizations that supported capacity building and legal action by local stakeholders. The closing of ranks between rural and national actors cannot be observed in Bolivia. This limits the possibility of a grievance-based spanning of the rural urban divide as an important condition for the formation of a national movement, similar to the Gas

Wars. Next to the rural backing of the government, this can also be linked to a general weakening of civil society actors under the MAS administration. The MAS has streamlined political debates in Bolivia by incorporating like-minded social organizations into the movement and curtailing the funding of critical NGOs (compare Chapters 4.5.2 and 6.2). Many large (environmental) organizations have lost funding and, also in light of the conflicts around the road through the TIPNIS territory, decided to lower their profiles (several anonymous interviews with NGO representatives in 2015 and 2016). Therefore, NGOs could also have preemptively decided not to engage with the MAS flagship project of lithium exploitation to prevent repression. Moreover, the remoteness of the area and the scarce population curtail possibilities of larger movement formation as these factors complicate the local mobilization of resources, including civil society support.

A further important aspect to explain the non-emergence of conflict is the already discussed existence of important local cleavages in the salar area that have rendered the formation of a horizontal communal alliance against lithium exploitation or individual aspects of lithium governance impossible. The power imbalances between the local actor groups with different ties to the government also impact on local meaning-making. Particularly the better connected southern block can expect to benefit in one way or the other from lithium and will thus be hardly inclined to fight the government on these issues.

Thus, while the current set-up of the Bolivian lithium program and the governance have supported the emergence of grievances, these grievances have – for the discussed reasons – not resulted in the development of a social movement or the emergence of conflict. In the following Chapter 8, I will provide a counter-example of grievance formation and show on the case of lithium governance in Argentina that meaning-making over lithium can in other context conditions support group-building processes and result in social mobilizations. In the subsequent Chapter 9, I will then discuss the overall findings before the theory, give an outlook for the Bolivian lithium project and provide policy recommendations.

8 Discussion and Comparison: Lithium Grievances in Argentina

8.1 Introduction to the Case

When analyzing lithium governance in Bolivia and local grievances that emerge in the Salar de Uyuni, it is interesting to see how these aspects compare to other lithium projects in the region. While Chile has exploited lithium for over 30 years in a scarcely populated location, Argentina has established new lithium projects in the last years. It is thus interesting to evaluate how these projects in Argentina are locally perceived and how meaning-making over lithium works in the neighboring country. The scope of this thesis does not allow for a full-scale assessment of the Argentinean case, but aims to provide some general insights based on expert interviews and existing literature. Through this comparison the control case can deliver tentative insights into the relevance of the findings for Bolivia beyond the individual case, while it can also provide impetus for further research.

When analyzing the Argentinean lithium experience in comparison to Bolivia, it is important to keep in mind that historically Argentina has not been a mining country. Its economy has traditionally been marked by large-scale agriculture and state-led industrialization. However, Argentina applied neoliberal reforms in the early 1990s, resulting both in the privatization of state-owned companies and the facilitation of investments of private multinational corporations in the country (Svampa, Bottaro, and Sola Álvarez 2009, 33–34). In the spirit of the time, Argentinean legislation was liberalized during the Presidency of Carlos Menem under the guidance of the World Bank. The neoliberal reforms opened a window of opportunity for private mining operations (*ibid.*). This possibility was soon seized by the lithium industry aiming at the large potentials of salt lakes in northern Argentina. In 1998, the first operation opened in the Salar del Hombre Muerto. Thereafter, however, for more than ten years the lithium industry stagnated in Argentina, producing consistently about five percent of global lithium (Vasters et al. 2010, 87).

It was the worldwide talk of a lithium boom that brought renewed industry interest to the white deserts in northern Argentina, where resources are high quality and national legislation is rather encouraging. Following the foreign debt and economic crisis of 2001 and 2002, Argentina was ruled

by the left Kirchner governments³⁸¹, but the supposedly post-neoliberal and interventionist Kirchners kept the mining code in place and supported the expansion of mining (Anlauf 2014, 23).³⁸² Under their rule, two new lithium operations started production and many others entered in concrete planning phases. In 2011, lithium was declared a strategic resource by the provincial government of Jujuy and, in 2012, by the Catamarca province (Nacif 2015, 265–266). In 2016, Argentina was the third largest lithium producer (USGS 2016) and has considerable growth possibilities, also when taking the regional panorama into account. Chile, although still the main lithium exporter, has already mined a substantial part of its resources and has meager expansion possibilities due to restrictive legislation (Anlauf 2014, 17). Bolivia has not entered production, has less competitive resources and is not seeking a direct participation of automotive companies in its initiative. In consequence, a large industry focus is placed on Argentina, which could boost its production by 60 percent in 2016 (USGS 2017).

Yet, although (or because) Argentina chose a different governance approach, lithium mining has resulted in social mobilizations in the northern areas of lithium prevalence. In the following, I will first give an overview of the Argentinean resources, briefly confer to lithium governance in Argentina and describe the lithium region and its population. Then, I will discuss meaning-making over lithium and grievance formation in northern Argentina, outlining existing conflict lines to provide a comparison with the Bolivian case.

8.2 Characteristics of the Argentinean Lithium Resources

Argentina's lithium resources are among the largest in the world. For 2016, the US Geological Survey (2017) adapted its resource estimates from 7.5 million to 9 million tons, now equaling Bolivian estimates. These resources are spread out over a multitude of small salt lakes in an area of more than 17,500 km² in the three northern provinces of Catamarca (department Antofagasta de la Sierra), Salta (departments La Poma, Los Andes), and Jujuy (departments Susques, Cochinoca, and

³⁸¹ Néstor Kirchner was president of Argentina from May 2003 to December 2007. His wife Cristina Fernández de Kirchner succeeded him. Both Kirchners were members of the left-wing Peronist party. Fernández de Kirchner was replaced after general elections in December of 2015 by Mauricio Macri from the conservative party.

³⁸² Between 2002 and 2011, Argentinean mining exports increased by 434 percent, mining production by 841 percent and mining investment by 1,948 percent (Göbel 2013b, 170).

Tumbaya).³⁸³ The main lithium production sites are the Salar del Hombre Muerto, the adjunct salt lakes of Cauchari and Olaroz and the Salar del Rincón (Figure 18).³⁸⁴

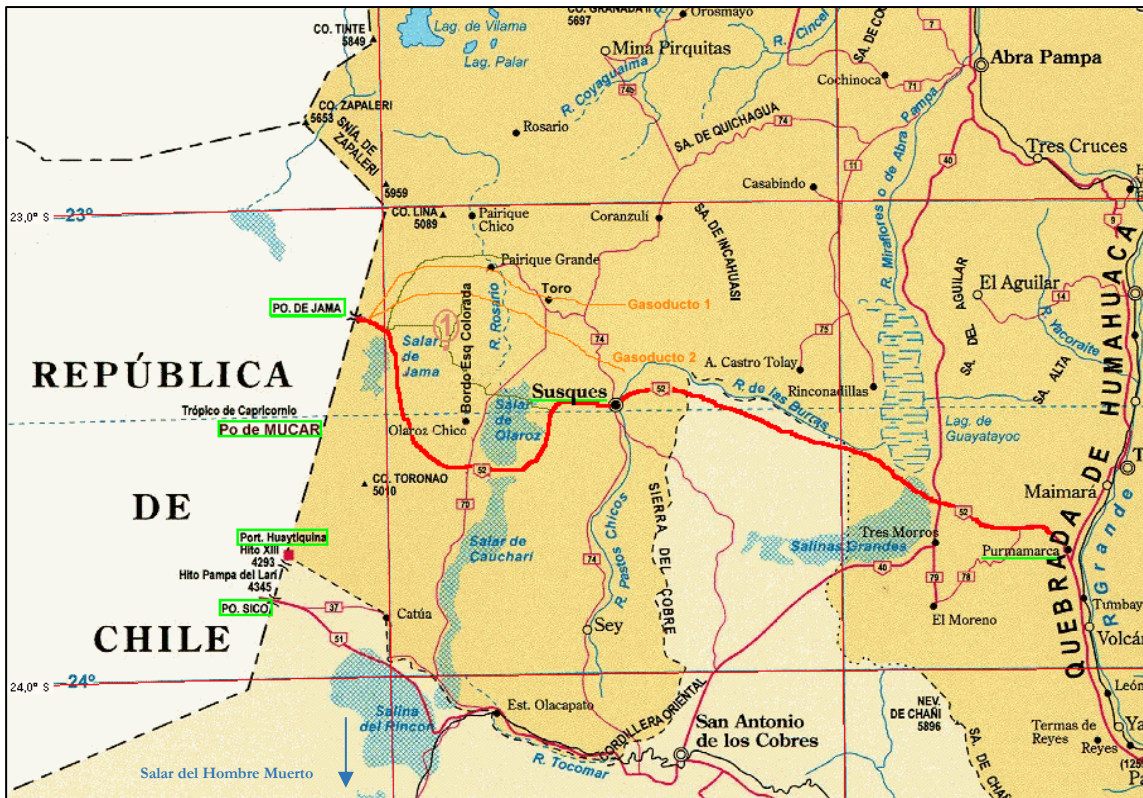


Figure 18: Salares in Argentina

In comparison to Chile and Bolivia, lithium exploitation in Argentina is managed primarily by private international corporations with little public participation. Nearly all of the saline areas of the northern part of the country have been awarded in concessions³⁸⁵ and over 40 projects for the exploitation of evaporite resources (lithium, boron, and potassium) are in development, often with direct participation of large car companies (Nacif 2015, 224).³⁸⁶

³⁸³ Argentina consists of 23 federal provinces and the Autonomous City of Buenos Aires. Unlike many other Latin American countries including Bolivia, “province” in Argentina denotes a federal state, thus the highest level of administrative subdivision, while departments are territorial divisions of second order. Thereby, the department system in Argentina co-exists with a municipality system on the same level. The provincial constitutions define the municipality organization that subdivides the province, as well as the degree of municipality autonomy. The department borders thereby rarely coincide with municipality jurisdiction.

³⁸⁴ The map was taken from <http://argpatriagrande.blogspot.de/2011/11/litio-metal-precioso-de-argentina.html>.

³⁸⁵ Göbel (2013b, 171) outlines that in Argentina, these concessions do not have to be activated right away through concrete exploration, as is the case in other countries.

³⁸⁶ For an overview of individual project locations see the map in Slipak (2015, 95). For more details on different lithium exploration projects and the involved companies see also Goebel (2013a, 2013b) and Nacif (2015).

The Salar del Hombre Muerto is one of the oldest brine production sites in South America. The salt lake is located mostly in the Catamarca province³⁸⁷, and is considered the third largest reserve in the world. Although at 588 km² it is much smaller than other salt lakes in the region, it is very lucrative because of its great depth, high lithium concentration and the excellent natural conditions for evaporation (low rainfall, strong winds) (Kunasz 2006, 606). The Salar del Hombre Muerto is believed to contain 800,000 tons of lithium (Salazar and McNutt 2012, 5), with average lithium concentrations estimated between 521 ppm (Garrett 2004, 24) and 650 ppm (Tahil 2008, 11), in some parts even up to 2,000 ppm (Kunasz 2006, 606). Lithium in the Salar del Hombre Muerto is extracted by a special process that differs from the technology used in Chile and Bolivia. To separate lithium from other minerals, an adsorption process based on alumina (clay) is employed preceding solar evaporation (Garrett 2004, 5). This way near pure lithium chloride can be extracted directly. Consequently, the project does not focus on by-products such as potassium (Kunasz 2006, 606). The fast-track process is, however, environmentally challenging because of its high freshwater use (Blume, Greger, and Pomrehm 2011, 29).

After having failed in the attempt to exploit the Salar de Uyuni in Bolivia, the US company LITHCO (later FMC) obtained mining concessions in the Salar del Hombre Muerto (see Chapter 5.2). With an initial investment of 150 million USD, FMC's subsidiary Minera del Altiplano SA started production of lithium chloride and lithium carbonate in 1998 (Nacif 2015, 248). In 2015, lithium carbonate production capacity in the Salar del Hombre Muerto amounted to 23,000 tons a year, while an additional 5,500 tons of lithium chloride were produced annually (ibid., 224). This makes FMC one of the largest global lithium producers (Jaskula 2013, 4). All of this production is exported (Nacif 2014; Slipak 2015, 96).

In the last decade, a multitude of new lithium projects were initiated, of which the majority is still in the (pre-)exploration phase. The three most advanced projects are two in the Olaroz-Cauchari valley in Jujuy and one in the Salar del Rincón in Salta. The Salar de Olaroz has excellent conditions for exploitation because of the high lithium concentration (900 ppm) and the low contamination with other minerals, which makes the production of high purity lithium faster and cheaper (Slipak 2015, 96). The Olaroz salt lake in the Department of Susques (Jujuy) is exploited by a consortium

³⁸⁷ The administrative assignation of parts of the Salar del Hombre Muerto is disputed between the provinces of Salta and Catamarca which links to the question of who receives the rents of the project (Slipak 2015, 94). After different legal processes, this was decided in the favor of Catamarca (ibid.).

of the Australian-Canadian company Orocobre³⁸⁸ and its Argentinean sub-company Sales de Jujuy (66.5 percent), Toyota (25 percent) and the provincial Jujuy Energy and Mining Society of the State (Jujuy Energía y Minería Sociedad del Estado – JEMSE) (8.5 percent).³⁸⁹ The project obtained operational permission in July 2012 and production started in November of 2014. The site produces 17,500 tons of lithium carbonate annually (ibid., 97–98).

Minera Exar, an Argentinean subsidiary of the Canadian Lithium Americas Corporation³⁹⁰, and the Korean State Company Posco have set up a pilot plant in the adjunct Salar de Cauchari, with minor participation of the public company JEMSE (Slipak 2015, 98). The Cauchari salt lake holds one of the most important lithium reserves in the world and could produce up to 4.9 million tons of lithium carbonate (ibid.). The salar area of 1,277 km² is mostly in the province of Jujuy (department of Susques) and to a smaller part in the province of Salta (ibid.). It is interesting that Posco developed a completely new extraction process for the Cauchari salt lake. This procedure works, according to company declarations, already at the pilot scale and produces high purity lithium in only eight hours without the use of evaporation pools (see Chapter 5.1.4). Expected annual production at the Salar de Cauchari is 20,000 tons of lithium carbonate and 40,000 tons of potassium chloride (ibid., 99).

In 2010, the ADY Resources Ltd. (owned by the Canadian Enirgi Group Corporation, which is part of the Sentinent Group) commissioned operations for lithium exploitation in the Salar del Rincón in the Salta province and produced 1,200 tons of lithium carbonate in 2015, while planning aims at 30,000 tons annually (Slipak 2015, 99). Lithium reserves there are estimated at 250,000 tons and could be the fourth largest in the world (Tahil 2008, 17). Further explorations for new lithium projects have already been initiated by various international companies in the salt flats Arizaro, Centenario, Diablillos, Incahuasi, Lullailaco, Pocitos, Pozuelos, and in the Salinas Grandes valley (Slipak 2015, 92). Additional lithium-rich brine resources are found in the Argentinean highlands in the salares of Pastos Grandes, Rotonos, and Antofalla (Evans 2008, 10). Argentina also possesses

³⁸⁸ Orocobre has additionally to Olaroz other projects in Argentina with other sub-companies. Borax Argentina SA produces boron, while the second company South American Salars SAS (85 percent shareholder is Orocobre) has carried out explorations and assessments of pre-feasibility in the Guayatayoc lagoon in Salinas Grandes as well as in Cauchari, Incahuasi, Antofalla and Cangrejillos. It also holds a multitude of further concessions (Slipak 2015, 96).

³⁸⁹ Researcher Federico Nacif (interview, 16.3.2016) questioned the competence of JEMSE to influence the lithium projects in the province: “The provincial authorities in Argentina lack technical knowledge. JEMSE in Jujuy is two lawyers and an accountant; they have no scientific support and no power vis-à-vis the companies.” Original quote: “*A las autoridades provinciales en Argentina les falta conocimiento técnico, la JEMSE en Jujuy son dos abogados y un contador, tienen ningún apoyo científico y ningún poder frente a las compañías.*”

³⁹⁰ Shareholders of the Lithium Americas Corporation are, amongst others, Mitsubishi and the car part manufacturer Magna (Slipak 2015, 98).

minor hard rock lithium deposits in the Sierras Pampas region in the western part of the country, where lithium compounds for the glass and ceramics industry were produced on a minor scale from the 1930s onwards (Nacif 2015, 226–228).

The description of the different lithium projects in Argentina already outlines a central problem faced by the lithium industry there. While exploitation initiatives in the neighboring countries concentrate on one side, the Salar de Uyuni in Bolivia and the Salar de Atacama in Chile, every salt lake in Argentina has a different lithium concentration, due to “contamination” with other resources, diverging evaporation conditions, and varied chemical compositions. Thus, for every project there is the need to develop a different, adapted technology, which also explains the multitude of actors in the lithium sector (interview with investigator A. Slipak, 17.3.2016).

8.3 Lithium Governance in Argentina

As I have limited space for a discussion of the Argentinean case, I can only give a brief overview of the existing legislations. Lithium exploitation in Argentina is regulated by the legal mining framework³⁹¹, as no special regulations for evaporite resources have been developed.

8.3.1 Ownership of Resources

For an understanding of lithium governance in Argentina, it is important to underline that, in contrast to the Bolivian case, the provinces (equivalent of the departments in Bolivia, compare Footnote 383) own the natural resources. This dates back to a 1994 reform of the National Constitution (Constitución Nacional de la República de Argentina – CNA, Art. 124). This constitutional reform also marked a retrieval of public actors from mining, which is nearly exclusively managed by private companies based on provincial concessions. Thereby, the different provinces have developed independent mining regulations, use the leeway of national legislation differently and follow diverse political projects in mining.

³⁹¹ Particularly the Mining Code (Law N° 1919 of 1887, last modified by Law N° 27111, 26.1.2015) and the Law on Mining Investments (Law N° 24.196, 28.4.1993). Both were shaped significantly during the neoliberal Presidency of Carlos Menem (July 1989 to December 1999). For a more comprehensive overview see Svampa, Bottaro, and Sola Álvarez (2009) on mining regulations in general, Nacif (2015) and Slipak (2015) on legislation applicable in the lithium project and Puente and Argento (2015) on indigenous rights and the existing legal framework in Argentina.

While, for example, Jujuy with its provincial company JEMSE aims at a regional participation in mining initiatives, the Salta province does not directly engage in these projects and encourages long-term transnational cooperation (interviews with F. Nacif, 16.3.2016; and A. Slipak, 17.3.2016). While national regulations are generally forthcoming to international business, the provincialization of mining responsibility has increased insecurities. According to the mining industry survey of the Fraser Institute for 2016, Jujuy had the least attractive mining jurisdiction in the world, followed by other Argentinean provinces (Neuquén, La Rioja) and countries such as Afghanistan and Zimbabwe (Jackson and Green 2017). This reflects, however, the mining industry's viewpoint. Jujuy has, for example, also more rigorous regulations on public participation and the consultation of indigenous communities than other provinces (see below).

8.3.2 Management of Monetary Benefits

Another important aspect of governance is the management of monetary benefits. While taxes are comparatively high in Argentina (such as a corporate tax of 35 percent), exemption possibilities are equally substantive (e. g. allowing for a complete deduction of investments from taxes) (Anlauf 2014, 26). The tax profit goes mostly to the national treasury.³⁹² The provinces benefit from royalties, which are, however, low in Argentina (ibid.). Despite provincial ownership, national legislation sets boundaries to regional and local monetary participation, as it allows provinces to charge a maximum of three percent of the value “*boca mina*” (pithead value) in royalties (Law N° 24.196 on Mining Investments, 28.4.1993, Art. 22).³⁹³ Moreover, since the neoliberal reforms of the 1990s, Argentinean investors are guaranteed 30 years of fiscal stability, meaning that taxes and royalties cannot be raised for three decades once a contract is signed (the longest period in the region) (Nacif 2015, 241).

³⁹² First order taxes (profit tax, value-added tax) are charged by the central government and shared with the provinces according to the Law on Federal Co-Participation of Taxes (Law N° 23548, 7.1.1988). Second order taxes on gross income and the called “*canon minero*” are collected by the provinces. In addition to this there are municipality taxes, which are, however, of limited financial importance (Slipak 2015, 103).

³⁹³ The pithead value is the effective value of the resource at the moment of extraction and is, since a 1999 reform of the Mining Investment Law (by Law N° 25.161), declared by the company. In its modified version, Art. 22 of Law N° 24.196 allows for a deduction of different costs to determine the pithead value including the costs for the transformation of the minerals into the final product, for transportation, administration, commercialization, or smelting. The provincial royalty is in all three lithium-owning provinces defined at three percent (Slipak 2015, 103). The sharing mechanism with local communities for royalties varies according to province and project (ibid.).

For the four major lithium projects, I calculated provincial royalty income based on a lithium carbonate price of 7,000 USD at a maximum of 5.5 million USD for Jujuy, 4.4 million USD for Salta and 3.4 million USD for Catamarca (see Appendix VI).³⁹⁴ Income in 2016 was probably lower, since the projects were not all running at full capacity. Also, there is only insufficient information of the costs declared by the companies (Slipak 2015). Argentinean estimates compare to tentative calculations from Bolivia for which I estimated potential royalty income of 7.27 million USD on the departmental level and an additional 1.28 million USD on the municipality level (compare Chapter 6.4.1). So, similar to Bolivia, in what Slipak (2015, 105) calls a “hardly federal tributary model,” Argentinean provinces benefit only on a minor scale compared to the large company income. The neoliberal constitutional reforms, researcher Slipak highlighted (interview, 17.3.2016), have burdened the provinces with important new tasks (e. g. in social services), while limiting their financial participation (e. g. in mining rents). This model encourages the cash-strapped provinces to hand out more mining concessions to obtain the necessary royalties, thereby increasing their dependency on mining as well as environmental and social externalities (ibid.).

8.3.3 Local Consultation and Management of Environmental Costs

Despite the legislative dominance of the provinces in mining, certain competences have been conserved by the central government, most importantly in environmental management and indigenous participation. The Constitution determines that the national level must define minimum standards for environmental protection which are supplemented by provincial norms (CNA, Art. 41) and guarantee the participation of indigenous peoples in the management of resources (CNA, Art. 75, No. 17)³⁹⁵. The constitutional reform also established the possibility of the recognition of a legal personality of indigenous peoples (ibid.). Yet, how indigenous or communal participation in lithium projects is organized is dependent on provincial regulations.

³⁹⁴ Calculations are tentative as the estimated mining value (sales value minus the costs of production) is unknown since it is declared by the companies and not published (Svampa, Bottaro, and Sola Álvarez 2009, 34). For the calculation, production costs were estimated at 30 percent of sales value (see Appendix VI).

³⁹⁵ Indigenous land rights are secured by article five (paragraph 17) of the Constitution which establishes the pre-colonial ethnic and cultural existence of the Argentinean indigenous peoples and recognizes the legal personality of its communities. It further recognizes communal property of lands and guarantees the participation of indigenous peoples in natural resource management. Nonetheless, the actual recognition of indigenous land titles has advanced only slowly in the last decade (Puente and Argento 2015, 146).

All three provinces with lithium have different laws on prior consultation and communal participation (Slipak 2015, 101). In Salta, for example, different decrees on individual lithium projects mandate an integration of local communities in project development, while this has not resulted in consultations in practice (Puente and Argento 2015, 142). In Jujuy, provincial mining regulations are much stricter. The Mining Court (*Juzgado de Minas*) needs to approve even prospective activities which, in theory, require the consent of local communities with ancestral rights over the territory. For exploration and exploitation, oversight requirements are more comprehensive and all phases of a project need a prior green light from the Provincial Expert Committee for Lithium (Slipak 2015, 100–101).³⁹⁶ Researcher Slipak underlined that these regulations have, in practice also in Jujuy not always resulted in consultations and respect of indigenous rights (interview, 17.3.2016), while the consultations implemented have not met international standards (Puente and Argento 2015, 151). As will be discussed further on, as a consequence of lacking provincial regulations on consultation and their limited application, communities demanded consultation rights based on the already discussed international framework of the ILO Convention 169 (Marchegiani 2013, 464).³⁹⁷

As for the management of externalities, similar to the Bolivian case, the Argentinean legislation mandates an environmental impact assessment to obtain a license for a lithium project. This also includes an environmental public consultation based on environmental regulations (interview with researcher P. Marchegiani, 17.3.2016). The responsible provincial institution would then evaluate the assessment of environmental impacts by the company (or the environmental consultancy it hires) and grant the permit. While this provides a certain independence in oversight (in the Bolivian project, the impact assessment is commissioned and assessed by the same government), Anlauf (2015) underlines that the existence of multiple lithium projects also means multiple responsibilities in environmental evaluation. Thereby, the individual company only assesses the targeted impacts of an individual project but not the overall externalities of lithium industrialization for the hydrological balance of the region, to name one example.³⁹⁸

³⁹⁶ An exploration or exploitation project needs approval of the Ministry of Production and the General Secretary of the Governor as well as a favourable opinion from the Provincial Directorate on Mining and Energy Resources and the Provincial Expert Committee for Lithium.

³⁹⁷ Puente and Argento (2015, 151) identify a systemic shortcoming for the securement of the territorial rights of indigenous peoples in Argentina. While at the national level, the legislative body has increased, there is a lack of public policies and provincial regulations to implement this legislation.

³⁹⁸ At the same time, assessments by individual companies in Argentina have proven more critical than the Bolivian EEIA. While the Bolivian report identifies only manageable minor risks, the environmental impact assessment of the

8.4 The Lithium Regions: Expectations and Fears

In socioeconomic and natural conditions, the lithium regions in Argentina are comparable to the Salar de Uyuni in Bolivia. The northern salt lake area is extremely dry with scarce vegetation and a highly specialized fauna. Also in Argentina, the territories of lithium exploitation are marked by low population density, disperse communities, and a high degree of social fragmentation and local mobility (2013b). Like southwestern Bolivia, northern Argentina is the poorest region in the country with the lowest per-capita income. Historically, the area is shaped by agriculture (mostly tobacco and sugar cane), while mining is an expanding economic sector (Anlauf 2014, 24). Exports are dominated by mining products; however, lithium is only a notable economic factor with 2.4 percent of exports in Catamarca (Slipak 2015, 106).³⁹⁹

Most mining activities for the internal market concentrate on salt. The communities on the border of the saline lakes possess a strong identity as salt workers, while other groups farther away from the salt areas are frequently involved in subsistence farming or herding (Göbel 2013a; Marchegiani 2013, 460–461; Puente and Argento 2015, 127–130). Several indigenous communities inhabit the area, particularly the *kollas* (*kollasuyu*)⁴⁰⁰ and the *atacama* that mostly live in the northern highlands region (Puna). For them, also because they depend on the salt for their livelihoods, the salares have a strong cultural and symbolic significance as “their space of life, their means of subsistence, the place where their ancestors rest, and where they deploy their culture” (Puente and Argento 2015, 130).⁴⁰¹

Indigenous self-government, as established by national legislation, is only weakly implemented, and lacks financial and political resources (Göbel 2013b, 173). Also, only some of the local indigenous communities have sought national registration in the National Registry of Indigenous Communities (Registro Nacional de Comunidades Indígenas – RENACI) or provincial recognition (Puente and Argento 2015, 126). While communities in the department of Susques (province of Jujuy) have

Cauchari project by Lithium Americas concluded that severe impacts can result from water use and the extraction of brine which could endanger both the quantity and the quality of hydrological resources (Anlauf 2015, 177).

³⁹⁹ Important export products are in Catamarca: copper (87.4 percent), gold (3 percent), lithium (2.4 percent); in Salta: corn (13.9 percent), tobacco (11.9 percent), petrol (11.3 percent) and in Jujuy: Silver (38.2 percent), tobacco (17.1 percent), lead (8.4 percent) (Slipak 2015, 106).

⁴⁰⁰ In Argentina, *kolla* is a generic name given to Quechua and Aymara people. In Bolivia, however, *kolla* refers to all inhabitants of the highland region, in comparison to the “*cambas*” of the eastern lowlands.

⁴⁰¹ Original quote: “*los salares revisten un carácter simbólico identitario ya que constituyen su espacio de vida, su medio de subsistencia, el lugar donde descansan sus ancestros y donde despliegan su cultura.*”

mostly obtained legal personality, recognition of community statuses and communal land titles, the 33 communities in the Salinas Grandes valley (provinces of Jujuy and Salta) with the lithium-rich Laguna de Guayatayoc had not sought these titles and had not even processed their application for legal recognition as indigenous peoples when lithium exploitation started (ibid., 148). Rather, territorial limits were agreed collectively and orally between different families and communities over generations, often based on water sources, and had not been secured through written titles (ibid., 128). As it became necessary to be recognized as an indigenous people to obtain consultation rights and be able to collectively challenge the lithium projects, several indigenous nations accelerated their registration processes after companies entered their territories (ibid., 148). In effect, authors such as Göbel (2013a, 144), Marchegiani (2013), Puente and Argento (2015, 148–149) sustain that the lithium industry already had important impacts on the cultural identity formation in these parts of Argentina.

Similar to the Bolivian case, local communities in Argentina connect hopes for local development to lithium industrialization, concentrating mostly on expectations of local jobs and monetary participation. Göbel (2013b, 174) found that with a successive disappointment of these hopes, local communities developed an increasingly ambivalent opinion about emerging lithium projects. Locals observe that while the different lithium sites generate high profits for the involved international companies, the direct socioeconomic impacts for the communities in northern Argentina are limited, as direct monetary participation is limited and hardly any jobs have been created. After a more extensive employment phase during construction, Argentinean experiences show that employment opportunities were limited after the start of production in the highly specialized and automatized lithium industry. Job opportunities mostly benefitted formally educated workers from outside the rural areas (Göbel 2013a; Slipak 2015, 107).⁴⁰²

Visible benefits of the company engagement in the region include the construction of infrastructures, particularly energy nets and roads that support the remote communities. Yet, as Slipak (2015) points out, these infrastructures are primarily oriented in industry needs and only secondarily benefit the communities. Yet, certain communities, comparable to the Rio Grande in Bolivia, have changed with the lithium industry. The most prominent example is the capital of the

⁴⁰² Currently, FMC employs 200 to 250 workers directly, Orocobre has a monthly workforce of 290 employees while ADY has a working staff of 60 (potentially 110). Additionally, about twice as many work indirectly for the lithium industry (Slipak 2015, 107).

Olaroz-Cauchari region, Susques, in Jujuy (about 1,000 inhabitants), which is the largest and most urbanized community in the region (Anlauf 2014, 33–34). The urbanization process was supported by the fact that different companies active in the lithium industry have established regional headquarters in Susques (Puente and Argento 2015, 128). Moreover, there are also social responsibility initiatives of the companies in individual communities, such as financial support of community projects and local infrastructures. Research has described an ambivalent interaction between the companies and the local communities. During the implementation of new projects, many companies engaged in different initiatives of corporate social responsibility to increase the support for the project or “buy the local communities” (interview with researcher F. Nacif, 16.3.2016). Thereby, these initiatives often filled a gap of limited public engagement in the remote areas (Göbel 2013b), stepping in where the government had neglected to. This is similar to the experience of local communities in the Salar de Uyuni.

An important concern of locals about the lithium projects are the resulting environmental impacts. Considering the similar natural conditions, environmental challenges are equal to those described for Bolivia (see Chapter 6.5.1). Although lithium industry activities have been operational longer in Argentina, a thorough evaluation of already existing impacts is not available. The Salar del Hombre Muerto communities have, however, declared impacts on fresh water streams (Hollender and Shultz 2010, 41). In the FMC project, this problem is enhanced because the specialized adsorption technology uses particularly high amounts of fresh water challenging the hydrological equilibrium (Blume, Greger, and Pomrehm 2011, 29).⁴⁰³ In other lithium projects, environmental preoccupations in the arid communities center on the water question. Concerns also evolve because of a potential competition over scarce water resources between the lithium industry and traditional economic sectors such as herding, farming, and salt exploitation, as the awarded concessions also include the border areas of the salt lakes (Göbel 2013b, 172). A further preoccupation is the salinization of water sources (Marchegiani 2013).

Meaning-making over lithium in Argentina thus centers on very similar expectations and fears that emerge in local communities. Thereby, the cultural and historic significance of salt and saline lakes in these communities interacts with a dire economic situation and the need to find alternative sources of income. As described for the Bolivian case, local communities are divided on the issue,

⁴⁰³ According to government sources cited in Anlauf (2015, 176), the FMC project uses 78.4 liters of freshwater per second.

with some supporting and others rejecting project implementation or expansion. Yet, in juxtaposition to the Bolivian case, grievances over lithium have resulted in visible mobilizations at individual locations in Argentina.

8.5 Lithium Conflicts in Argentina

Argentina has seen different conflicts emerging from its lithium industries. Thereby, Argentinean communities followed diverging strategies of mobilization in the various lithium projects. Puente and Argento (2015, 130) identified three types of conflict connecting to (1) the symbolic-cultural dimension, as lithium might impact on local economic strategies, particularly salt exploitation, (2) the environmental dimensions, especially the fear that water scarcity increases with lithium exploitation, and (3) the limited transparency of the mining projects, particularly connected to insufficient compliance with consultation demands. This latter aspect connects to the question of land rights and participation in lithium benefits.

A visible example of community protest is the roundtable (*Mesa*) of 33 communities⁴⁰⁴ in the valley of Salinas Grandes (provinces of Jujuy and Salta). The communities organized against explorative activities of the Orocobre company in the Laguna de Guayatoyou and referred to national and international NGOs for legal and organizational support. A driving factor behind the organization was the limited information provided by the company; that communities demanded their indigenous rights to a free prior consultation. Researcher Pía Marchiagiani (interview 17.3.2016) additionally pointed to a strong regional organization against destructive mining practices in general in Jujuy, making the compliance with environmental norms, the protection of *pacha mama*, and the securing of water rights major points of contestation (Marchegiani 2013). The communities enacted a protest strategy that combined legal demands with campaigning and direct action. Legally, information on the projects was demanded before both provincial and national courts. In 2010, the group also filed a complaint with the United Nations claiming a violation of the Constitution and international treaties, particularly ILO 169 (ibid., 464).⁴⁰⁵ This legal action was seconded by a

⁴⁰⁴ These are not all communities that inhabit the area but those that have organized under one judicial personality as the *Mesa* (compare Puente and Argento 2015, 133).

⁴⁰⁵ Legal action on the provincial level includes a formal information request to the Mining Justice (Juzgado de Minas) of Jujuy, which when declined was taken as an interprovincial case to the Supreme Court of Justice which again handed it down to the provincial level. Reasons for the decline included that the court did not recognize the status of the plaintiffs as indigenous peoples because they were not nationally registered as such and that exploration activities had not started. Upon the decline, the communities decided to take the case to the international level, filing a

communication strategy supported by national and international NGOs, involving blogs, social media, webpages, and protest action such as the blocking of a national road by 86 communities from Salta, Jujuy, and other provinces in 2011 (Puente and Argento 2015, 136).

In other communities, the rejection of the lithium industry has not been so unified. In the department of Susques, where two major projects are developed in the adjacent salares of Cauchari and Olaroz, conflicts emerged mostly within local communities, between those in favor and those against the projects, resulting in particularly conflict-intensive scenarios (Puente and Argento 2015, 137 et seqq.). These internal conflicts were also fueled by the community relations strategies the involved company implemented and their impact on meaning-making over lithium (ibid.). Since the development of the Olaroz project was a priority for the Orocobre company and in light of the experiences in the Salinas Grandes valley, the multinational company engaged actively with the affected local communities in the Susques department (Anlauf 2014, 35–38). Similarly, other companies in the Olaroz-Cauchari region supported local projects with specifically employed community relations personnel (ethnologists, social workers, etc.) (Göbel 2013b, 173–174), following “divide and conquer” strategies (see Pellegrini and Ribera Arismendi (2012). Companies such as Orocobre sought to create close political networks, particularly with younger decision-makers and returning migrants to support a generational change in community leadership in favor of the project (Göbel 2013b, 174; Puente and Argento 2015, 138).

In the Cauchari project, the Exar company offered money to cooperative salt workers for ceding their territorial rights to the lithium industry (ibid., 132). This created severe conflicts within local communities, especially because water access rights had not been defined and no formal consultations had been implemented. While initially many individuals signed agreements with the company, other community members organized in protest and convinced the signatories to retrieve these signatures at a later stage (ibid., 137 et seqq.). Those in opposition to the company arrangements sought legal and expert help from the civil sector to present cases before provincial and national courts against both the company and the government. This legal action involved demands for information and consultation, direct monetary participation of the communities and

complaint before the UN Special Representative for the Rights of Indigenous Peoples in July of 2011, a report to the UN Committee of Economic and Social Rights and a case in front of the Interamerican Court of Justice. As a result, after a visit to the area in 2011, the UN Special Representatives confirmed that the provincial and national governments in Argentina violated indigenous rights in not consulting the local population. For more detailed information see Puente (2015, 135–36).

the securement of water rights, also recurring to the fact that the area of exploitation is a natural reserve (Marchegiani 2013).

In other projects, such as the long-running engagement of FMC in the Salar del Hombre Muerto in Catamarca, there is no visible local rejection of lithium exploitation (interviews with F. Nacif, 16.3.2016; and P. Marchegiani, 17.3.2016). Also in the Salta province, conflicts did not erupt openly. One reason could be that in the depopulated and arid regions of the Salar del Hombre Muerto and the Salta saline lakes, communities lack the necessary resources and organizational structures (Puente and Argento 2015, 133; and interview with P. Marchegiani, 17.3.2016).

8.6 Discussion of the Findings for Argentina

The findings for the Argentinean cases portray similarities with Bolivia but also important differences. In general it can be said that lithium projects in Argentina are smaller than the initiative envisioned by the Bolivian government which aims at industrializing 30,000 tons of lithium carbonate and 700,000 tons of potassium chloride (Echazú Alvarado 2015, 316). Jointly, however, the Argentinean market potential surpasses that of Bolivia. This is also because investment conditions are better from the transnational market perspective, as Argentina concentrates on raw material export and subsidizes mining investments (Göbel 2013b, 170). Thus, on the one hand, Argentina, in juxtaposition to Bolivia, has not made efforts to separate from the role of a raw material provider nor does it aim for large-scale public participation in these mining projects or national value-adding. On the other hand, this export-oriented strategy has made Argentina the darling of international car manufacturers and large businesses that seek supply security. In result, analyst Juan Carlos Zuleta expressed his belief that Argentinean lithium will dominate the market for the years to come (interview, 2.12.2015).

The single most important discrepancy on the governance side regarding the Bolivian case is that the ownership of the individual lithium projects is in private hands. This has important impacts on local interactions with the lithium initiatives. In Argentina, while the institutional side of governance, the legal framework that defines royalties, environmental standards, and consultation rights and the oversight of these regulations are shared at the central and provincial levels; the interaction with local communities is partly the responsibility of transnational companies.

Moreover, the provincial ownership of natural resources has resulted in diverging legal frameworks in the individual Argentinean provinces that secure communal rights and interests regarding the mining companies.

At the same time, while financial benefits are targeted at the national level, provincial participation in monetary benefits of the projects is reduced by unfavorable national legislations that curtail royalties. While Argentinean communities participate monetarily only on a minor scale, other benefits which Bolivian communities demand from the MAS government (local jobs, infrastructure investments, subsidies etc.) are at the discrepancy of private entities. In consequence, local communities in Argentina are negotiating with different stakeholders concerning their participation, their benefits, and their concerns about externalities in lithium exploitation. They are interacting with the government to demand changes in regulations and the respect of constitutionally agreed rights. At the same time, locals are communicating with the involved transnational actors to seek modifications in exploitation practices and corporate social responsibility initiatives. This produces power imbalances on different levels; between local communities and transnational corporations, between local communities and the government, and between different provincial administrations and powerful international companies.

Grievance creation in Argentina and Bolivia shows a certain overlap. Economic grievances related to the question of participation in monetary benefits and local jobs are voiced in both countries. Also, the political grievances, particularly in relation to transparency and stakeholder integration are present in the debate across borders. Studies of individual lithium projects show that consultation rights have been considered insufficiently in Argentina (Anlauf 2014; compare Göbel 2013a, 2013b; Puente and Argento 2015). However, the intensity in which certain grievances are debated and in how far they support mobilization is very different. In Bolivia, horizontal grievances between local communities over rent distribution and land rights are central in the debate. Thereby, local meaning-making about these issues connects to long-standing cleavages and power imbalances between Quechua and Aymara communities. In Argentina, the local access to lithium rents is only a secondary focus. More important are concerns of company transparency, the right to be consulted and livelihood grievances connected to environmental rights. Particularly the latter aspect has proven to be only of minor concern in Bolivia.

I see five important differences in meaning-making over lithium and lithium grievances in Bolivia and Argentina. The strongest factor is the difference in ownership and the resulting divergence in the recipients of local demands and concerns. In Argentina, some locals have developed a more critical stance towards emerging lithium projects, particularly because of the ambivalent attitude of the different private companies in the individual lithium projects. This has created tensions and deepened grievances connected to lithium exploitation. The different examples discussed in this chapter show that companies have lobbied individual communities very differently, depending on prior experiences, local organization, and the importance of an individual project in the company's business strategy. Thereby, they have repeatedly sought the establishment of clientelist networks while transnational corporate activities also filled a vacuum left by a limited public engagement in the remote locations. In Bolivia, the government has acted similarly in individual mining projects (yet not in the lithium project) compensating individual actors in local communities while bypassing indigenous and communal organizations (see Chapter 4.5.2).

Second, the different lithium projects in Argentina demonstrate that meaning-making is also shaped by the relationship of individual communities with salt and the salt lakes. One reason for protest emergence in the Salinas Grandes case was that local salt worker communities that live directly by the salt lake connect a particular value to salt for their livelihoods and identity; salt has an established significance in their cultural practices and rituals. Communities farther away from the saline areas lack this (see Göbel 2013a, 2013b; Marchegiani 2013; Puente and Argento 2015; Anlauf 2015). Based on this special relationship, individual Argentinean communities demanded that their consultation rights be respected by the companies. Here, similarities to Bolivia can be observed. A strong cultural and historic connection to the Salar de Uyuni was also a relevant factor in interviews, yet these cultural ties were mostly referred to in relation to the ownership of the project and its revenues. Moreover, in both countries, communities whose economic activities could be potentially endangered by lithium exploitation show more concerns (quinoa production in Salinas de Garcí Mendoza and Llica in Bolivia, salt exploitation in the Salinas Grandes valley in Argentina), demonstrating more eminent grievances. Yet, in Bolivia, these concerns are generally overshadowed by other more relevant factors, such as expectations of high monetary benefits and an important local trust in the MAS administration, which are lacking context conditions in Argentina.

Third, the evolving protest action in Argentina has particularly profited from an intertwining of local community action with national and international civil society activity. As the points of

contestation over lithium mining, namely environmental impacts and indigenous consultations, can be generalized over different mining initiatives at the national and international level, a mutually-beneficial cooperation between rural communities and the urban civil society emerged. The most relevant grievance in Bolivia, land rights in the Salar de Uyuni and distribution of local rents between individual salar communities, was not such a catch for national and international NGOs. This might explain the lack of a comparable external support for lithium-critical local actors in Bolivia, together with a general rural support for the MAS government and the debilitation of civil society. Moreover, this can explain why movements also in Argentina did not emerge from the start of lithium industry activity in the late 1990s but rather from new lithium projects initiated after 2010.

Fourth, it is important to consider the framing of lithium initiatives in both Argentina and Bolivia. In Bolivia, the focus of the lithium debate is on the question whether the public exploitation and the industrialization of lithium in the country can emerge as the flagship of a new national mining strategy and fix problems of the former extractivist mining practices. Lithium in Bolivia is portrayed by the government as part of the overall strategy for the new plurinational post-neoliberal Bolivia that, for a greater good, surpasses individual, localized concerns. For Bolivia, I argue, this national industrialization discourse, the resulting high benefit expectations, and the strong local support of the MAS government has contained mobilizations around local grievances. This political trust is not a factor in Argentina, where communities organize against transnational corporations and where particularly civil society support for local protest movements strengthened a framing around aspects of environmental protection and indigenous rights. Moreover, extractivist continuities can more easily be linked to transnational exploitation than to public mining, which has made it easier to bridge the rural-urban divide in Argentina. At the same time, local protests are not aimed at stopping individual lithium initiatives or changing the overall exploitation model. Rather, protests seek to correct existing initiatives and connect them to national debate about a need for stronger environmental protection in mining regulations and their enforcement, for example.

Fifth, the surrounding conditions are important. In Bolivia, mining has always been an important backbone of the economy, while northern Argentina only recently emerged as a mining hub, particularly for lithium. In Bolivia, this long-term dependence on mining has created a certain acceptance of associated environmental challenges, which are thus not a prominently voiced concern and do not provide a context for mobilizations in Bolivia. In Argentina, on the contrary, this long-term mining focus is not present, which makes it easier, also because of external support,

to frame protests around environmental aspects. Consequently, in Argentina, emerging protests against individual lithium projects had a prominent environmental dimension.

The examples of the lithium programs in Argentina and Bolivia highlight the relevance of Jasper's (1998, 103 et seqq.) suggestion to develop different grievance categories vis-à-vis the types of mobilizations they could support. As environmental concerns span the local-national-global divide, they can support the formation of broader social movements. Yet, economic grievances related, for example, to the question of the distribution of rents between individual communities do not have this potential to activate broader support networks. This either hinders protest formation, as can be observed in Bolivia, or, as Jasper (1998, 285) outlines, supports the formation of more diffuse movements.

9 Conclusions and Policy Recommendations

9.1 Discussion of Research Findings

This chapter summarizes the central findings of this thesis in relation to the objectives and research questions stated in Chapters 1 and 2. I also discuss the theoretical, methodological, and practical implications of the findings and outline their significance for the Bolivian case and beyond. In addition, I point to limitations of the present study, provide recommendations for further research, give an outlook for the Bolivian lithium program, and offer some policy advice.

The analysis began in view of a complex yet ambiguous research panorama on the relationship between resources and conflict development, engaging with the research puzzle of why resources can be linked to conflict in some cases but not in others. Based on an extensive, interdisciplinary literature review, I confirmed the need to disengage from theories that seek universal applicability. I found that the concept of “meaningful grievances” developed by Simmons (2014, 2016b) can help comprehend the development of low intensity resource conflicts at the local level. Following reemerging academic discussions on the importance of grievances for understanding resource conflicts, I aligned myself with findings that highlight the significance of local meaning-making for grievances to consolidate and support mobilizations. Thereby, I showed that these grievance meanings are linked to different context factors and the framing of the project. Resource governance is an important component of these contextual conditions and can facilitate the interpretation of grievances in a way that supports the emergence of conflict.

Empirically, the thesis aimed at analyzing grievances over lithium exploitation in Bolivia and the meanings awarded to these grievances. Bolivia, as the country with the largest lithium resources, does not only provide a good entry point to study local grievances associated with lithium but the engagement with a producer country in the Global South also supports a more holistic evaluation of a lithium-based technology-switch to electric mobility in the Global North. At the same time, recent modifications in the resource politics in Latin America initiated an academic discussion on neo-extractivism associated with “pink tide” governments in the region (see Bebbington 2009; Svampa 2012; Gudynas 2012, 2015a). Literature found that extractive expansion is increasingly met with social resistance against a development model which continues to rely on the exploitation of natural resources (*ibid.*). By concentrating my analytical interest on a publicly managed resource

project in a “pink tide” governance context, I could evaluate assumptions of the neo-extractivism debate. To allow for a limited comparability of my results, I studied the first attempt to exploit lithium in Bolivia in the late 1980s and early 1990s; a project that was abandoned due to social protests. In an additional chapter, I also engaged with lithium exploitation and emerging conflicts in Argentina.

The overall aim of this thesis is the understanding of the impacts that different dimensions of resource governance (such as project planning and decision-making, stakeholder integration, benefit and externality management) have on the development of grievances in a resource project managed by a progressive “pink tide” government. Thereby, I was specifically interested in meanings awarded to grievances as an entry point to understand the conditions under which resource conflicts emerge. These meanings are impacted by governance as well as the context conditions and frames of a resource initiative, leading me to the following research question:

Do local meanings awarded to grievances in the present context of the Bolivian lithium program provide sufficient conditions for the emergence of conflict?

This general research interest can be broken down into three research sections, involving different sub-questions for analysis:

1. How is lithium mining and processing governed in Bolivia until 2016? How does the lithium governance approach integrate into the more general Bolivian mining panorama?
2. What impacts does lithium governance have on the development of grievances and on the local meanings awarded to these grievances?
3. Which other context conditions and frames are important for the local interpretation of the lithium project? How do these context factors interact with grievances and resource governance dimensions in the lithium program?

At the end of Chapters 4, 6, and 7, the findings on the individual research objectives were discussed extensively, so in the following only a brief summary is given.

The *first objective* was to describe the governance of the lithium project up to 2016 and to analyze it against the general developments in the mining sector under the progressive Morales government. The thesis outlined that the MAS administration profited from the 2003–2013 resource boom, allowing it to develop a state-led modernization agenda that prioritized public investment in mining. Structural changes did, however, not take place. Primary resources continued to be the backbone of the economy. Simultaneously, President Morales commenced a discourse of environmental protection which demonstrated important inconsistencies with the extractive expansion. These contradictions facilitated internal disruptions within the heterogeneous MAS movement. At the same time, the nationalizing agenda in mining was met with important barriers. Strong private interests, particularly by cooperative miners, clashed with nationalization attempts and supported a surge in mining violence. Furthermore, inefficiencies of public mining projects rendered the nationalization strategy economically unviable, particularly in the context of decreasing resource prices after 2014.

In the context of a difficult mining environment at the end of Morales' first term in office (2005–2009), high-value lithium emerged as a resource widely untouched by these developments and became a flagship project of the MAS mining strategy. For lithium industrialization, the government committed itself to its largest mining investment to date and a project in complete public control. Yet, an analysis of lithium governance showed that discrepancies exist between discourse and reality. Lithium is considered a cornerstone of the MAS industrialization strategy and the vision to produce lithium batteries seeks to move Bolivia beyond the role of a raw material provider. However, in the present project, the administration lacks important competences to comply with its projections and has failed to sufficiently analyze market potentials. These problems are not only related to bureaucratic errors but also to globalized structures of resource markets which confine countries like Bolivia to the production of primary commodities.

At the same time, this study found that the lithium project embodies classic shortcomings which the governance literature connects to the public control of resource projects. Project planning and organization are bureaucratic and nontransparent (see Acheson 2006; Scott 1998; see also discussion in Chapter 2). Decision-making is highly centralized and does not incorporate independent control bodies. These inefficiencies also relate to the assessment and management of environmental risks. While the government complies with some regulations, others are adapted or (partly) ignored, exacerbating the danger of ecological impacts. In revenue management, the current

project organization puts local communities at a disadvantage by streamlining rents and taxes to the central government level. In line with expectations of neo-extractivism research (Svampa 2013; Gudynas 2013, 2015a), the MAS administration destined potential benefits to the national state level to the dismay of a larger monetary participation of the producing region.

The *second study objective* was concerned with the effects of lithium governance on local grievances. I found that in the study region, resource governance had already had important impacts on grievance formation and interpretation. Thereby, individual governance dimensions proved more important in the local context of meaning-making than others. The analysis of the perceptions of the lithium program showed that, while communities back the initiative, they are concerned because their inclusion in project planning has been limited and are worried benefits will not be appropriately distributed. This is in line with the findings of many case studies from Bolivia and beyond (see Chapter 2.4.2). The balance between generated revenues and the inflicted costs in resource projects has been identified as a central driver of conflicts (Humphreys 2005; Orihuela and Thorp 2012; Schure 2007).

This research found that long-standing cleavages between salar communities and land right insecurities significantly impacted the local interpretation of economic grievances. In the Salar de Uyuni, Aymara, and Quechua municipalities claim ownership of the salt lake. Existing cleavages go back to colonial times and have intensified in recent years with land titling in the area. In line with the findings of Mähler and Pierskalla (2014), I observed that valuable lithium resources raised the identity stakes and increased the relevance of these cleavages for the local assessment of the project. At the same time, the intercommunal distribution of project revenues links to subsistence threats. A recent economic downturn has worsened the already difficult economic situation especially in the northern salar area, while lithium emerges as a potential replacement for failing traditional income sources. This material need is connected to a question of historic justice. Particularly in the remote northern municipality of Llica, the centralization of lithium revenues and a perceived prioritization of other municipalities are viewed as a continuation of exclusive tendencies. This emotional and historic charged dimension of local meaning-making over lithium turned the horizontal intercommunal distribution of lithium benefits into the most relevant local grievance.

I expected another grievance to emerge from the governance of externalities. Research on resource conflicts in Latin America highlighted the importance of environmental considerations, expressed

in the rejection of an extractive development model, for social movement formation (see Bebbington 2012; Burchardt and Dietz 2013; Gudynas 2015a; Svampa 2013). Yet, in the Bolivian case, deficient environmental governance was not a relevant grievance and did not provide a basis for alliance formations. Similarly, my analysis of mining in Bolivia beyond lithium indicates a predominance of economic over livelihood grievances as conflict motives (see Chapter 4.5). The long mining history, a strong dependence on extractive revenues, subsistence threats, and a monetary vision of natural resources overshadowed potential environmental concerns in the local interpretation of these resource projects.

These findings already link to the *third objective* of analysis, my interest in frames and context factors of meaning-making beyond resource governance. While I found that the local interpretations of the lithium project awarded more significance to economic grievances than to questions of environmental safety and livelihood, a focus on the interpretative context of the case shows that we cannot understand grievances in the lithium project as merely distributive. Rather, the interconnection of economic grievances with intercommunal cleavages and existing power imbalances, on the one side, and the framing of the project by the MAS administration, on the other side, underline a complex meaning-making context.

I found that for many locals, their identification with the MAS government strongly interacts with their interpretations of the lithium project. Simmons (2016b) discussed in relation to the Water Wars in Cochabamba that the neoliberal market frame was an important driver for mobilizations as people felt that large companies would take their water away from them. Similarly, it was argued that the first lithium exploitation attempt by a US company in the same neoliberal frame supported large-scale mobilizations in Potosí. In the case of the MAS political frame, the opposite is the case. Even though people expressed concerns with individual aspects of the project, their trust in “brother” Evo continuously dissipates their doubts and contains their grievances. At the same time, a long-standing historically and culturally understood intercommunal distrust has impeded the formation of communal alliances, while limited transparencies and unclear communication of existing regulations have not provided an argumentative basis to voice collectively felt concerns. As I will discuss further below, nontransparent governance became an important strategy of conflict containment. Thus, in relation to the overall research question, I found that while what Zald (1991) would call “hard grievances” exist in the lithium project, specifically around its economic dimensions, different aspects of governance, context factors, and a local trust in the MAS

government impacted the meanings awarded to grievances, so that sufficient conditions for the emergence of conflict did not exist in the time frame studied.

9.2 Theoretical and Methodological Implications

The case study proved that micro level meanings that are connected to grievances are a convenient angle to understand complex mobilizing conditions. Meaning-making is thereby intertwined with other context factors. The research underscored the importance of resource governance as a central component of the interpretative context of a resource project and a promising lens to understand grievance formation and interpretation and, in a subsequent step, conditions for resource conflicts to emerge. Thus, while the study highlighted the relevance of the pledge of grievance scholars to bring the grievance concept back into the study of conflict and assess it from a perspective of meaning (see Humphreys 2005; Jasper 1998; Simmons 2014, 2016a), it also extended this understanding by showing the relevance of an interpretation of meanings before the context of governance. Governance arrangements and practices impact on meaning-making and need to be taken seriously in their idiosyncratic relevance for grievance interpretation and consequently conflict emergence. Thereby, the study succeeded in linking the long-separated discussions in the social sciences on resource governance, on the one hand, and the causes of resource conflicts and social movement formation, on the other hand.

At the same time, the research convincingly underlined the benefit of an analytical separation from a normative perspective on governance as “good” or “bad” in the study of the resource governance conflict link. In the Bolivian lithium case, limited transparency proved to be an important political instrument of conflict containment. This aspect has not received any attention in the study of the resource governance or the Bolivian lithium program and leads to two important conclusions. First, although it might be counterintuitive, we should not assume that normatively defined “good governance” reduces conflict per se while “bad governance” supports the emergence of conflict. Rather, my initial statement is underscored; a study of governance should not be guided by these normative limitations. Second, this sustains that the local intertwining of meaning-making and governance is an important vantage point for the study of resource conflicts.

The case study showed that in the Bolivian lithium project, economic grievances were clearly more relevant than concerns about environmental practices. At the same time, however, the comparison

with Argentina highlighted that environmental concerns over lithium exploitation can, in other contexts, serve as an important conflict driver. In Chapter 4.5.2, I outlined that also in individual mining projects in Bolivia, a link between environmental factors (such as the poisoning of local fishing grounds) and questions of subsistence existed and had an impact on meanings awarded to grievances. Livelihood grievances related to the environment are thus not irrelevant but they require a context in which local meaning-making strongly connects to these environmental concerns.

The way in which different grievances influence movement formation underlines the need to engage with the content of local concerns. For a better cross-case understanding of resource conflicts, we need to work towards novel and more nuanced grievance classifications. While meanings are relevant to understand if individual grievances provide the conditions for social movements to emerge, my work also supports the findings of Jasper (1998, 103 et seqq. and 285) that different grievance categories generate different types of movements. For the present study, I developed grievance categories based on their content (political, economic, livelihood) and, building on findings from conflict and social movement studies, differentiated them in different types according to the way the individual grievance worked. Grievances, I showed, can develop from frustrated expectations, subsistence threats, and perceived inequalities (most prominently unequal power constellations).

The different contents of grievances impact the way alliances form and movements develop. Environment implications of resource projects, for example, can go (far) beyond the individual community and thus have the potential to activate social networks at the national and global level (compare Jasper 1998, 285). The Argentinean lithium case showed that urban NGOs, motivated by a national fight for a cleaner environment, entered local lithium communities and supported the emergence of a broader social movement against local project impacts. Socio-economic threats, such as the distribution of monetary benefits, however, are a zero-sum-game. These issues support cleavages between local actors who – as the Bolivian example exemplified – fight individually for their benefits and do not form a cleavage-spanning alliance. In result, more diffuse movements emerge (*ibid.*) or movement formation is hindered, as in the lithium project in Bolivia.

An important further implication of my findings is that generalizing claims over resource conflicts in a region are difficult to maintain, as conditions for social mobilizations depend on the local interpretative context of meaning-making. This underlines the methodology and theoretical value

of case study research, as it can scrutinize theoretical findings. Based on my results on the importance of local context, I challenge the generalizing tendency in neo-extractivism research to connect resource conflicts in Latin America to a rejection of neoliberal continuities in resource exploitation practices. Revette (2017, 151) highlights that neo-extractivism's macro perspective misses micro level dynamics of conflict development while Wolff (2017) criticizes that neo-extractivism unnecessarily confines resource conflicts to contestations of extractive practices as a development model. For the lithium case, I underlined the relevance of these critical perspectives empirically. Local salar communities question how the project is developed, not its development as a whole. Also, my analysis of Bolivian mining in general showed the limited local relevance of the discrepancy between the government's discourse on the environment and extractive expansion. While this inconsistency triggered debates in intellectual circles as well as ruptures within the MAS movement, place-based actors connect their livelihoods to resource-based development. In consequence, local interview partners did not discuss extractive practices as contradictory to *vivir bien*. These insights amplify the study of "pink tide" resource governance by an important local perspective.

In relation to the wider theoretical debate, the results support the consolidating understanding of a need to depart from the pursuit of general theoretical explanations of resource conflicts. Rather, we need to concentrate our efforts on the development of instruments to study the emergence of resource conflict in specific contexts. My findings, thus, also have important methodological implications. As this study showed the need to depart from generalizing assumptions about the "pink tide" across the region, it highlighted the relevance of the study of perceptions on extractive expansion in individual resource projects. Only based on continuous case study research, sufficient insights can be gained to link findings to case-spanning, more general conclusions. Thereby, a micro analysis based on interviews demonstrated to be an adequate method to approach the interconnectedness of governance and grievances on the local level. It also gave voice to local stakeholders, whose perspectives and grievances have often been marginalized in the study of resource conflicts.

At the same time, we need to improve the selection of study cases. Many scholars seem to connect a personal rejection of the expansion extractive practices to an emotional support of local protests, giving priority to the study of local conflicts against extractivism. This, however, embodies the risk that ex-ante personal, normatively-defined viewpoints are assumed to embody local realities (see

critique in Wolff 2017).⁴⁰⁶ The lithium case shows that, due to difficult socio-economic realities, local communities prioritize extractive expansion over environmental safety. This indicates a need for research to engage with projects beyond visible conflict cases or the prominent backing of international civil society. Instead, academics should engage with different kinds of extractive projects to allow for a more holistic assessment of local viewpoints regarding extractivism.

9.3 Limitations and Recommendations for Future Research

Beyond its theoretical and methodological interests, the present study set out to provide a discussion of the Bolivian lithium program and its developments. While this investigation is the most extensive on the program to this point, I faced the general problem of a moving target. My analysis is confined to the field research I conducted between October 2015 and May 2016, yet while I wrote, the program continued to develop and evolve. Just shortly before the finalization of this thesis, the GNRE for example reorganized as an independent lithium company. Nonetheless, I do not expect that such organizational changes will impact local meaning-making as long as questions of participation and centralization are not touched.

Another consideration is that my findings are case-specific by definition. The case study method opens an important way to analyze actor perceptions, but the individual case context limits the generalizability of the results. Yet, I see this case focus as a necessity to further our understanding of resource conflicts and governance. Generalizing debates have not helped provide profound insights into the conditions for resource conflict development, as the existing complex dynamics could not be explained by simple cause-effect-models. This research has shown that, when taking local meaning-making and its impacts on grievance formation seriously, it is necessary to engage with stakeholders in case-specific local settings. The identification of case-spanning, general dynamics can only be reached by expanding upon this kind of locality focused research. For the Bolivian lithium case, I could establish limited comparability by contrasting my findings with the earlier lithium exploitation attempt in Bolivia as well as a discussion of lithium conflicts in Argentina. Also, I developed an analytical framework that can be applied to other case studies.

⁴⁰⁶ I experienced wide criticism in early stages of my research for the very idea to study governance of resource projects, and was instead told that the focus should be exclusively on local communities and their resistances.

Future research can thus show to what extent these findings are generalizable beyond the Bolivian case.

Concerning the points raised above, I recommend future research to extend qualitative and local perspectives on resource conflicts. A continued engagement with local meanings and interpretations of resource projects can help us gain insights into patterns and frequencies beyond individual cases. This could facilitate the establishment of “meaningful grievances” as an analytical tool in the future. At the same time, comparative approaches and regional designs should be developed to combine the necessary closeness to the case with further tests of the generalizability of results in a bounded context. For this, QCA designs with a small case number could provide methodical advances.

Furthermore, I recommend a continued study of the linkage between governance and meanings awarded to grievances and offer the model I developed as a theoretical-methodological starting point. A supporting case-based micro analysis can secure the inclusion of case-specific context considerations. I further advise the combination of a case-based qualitative analysis with a congruence test to support the theoretical anchoring of the findings.

As for the selection of cases, a comparison of the three lithium producers Bolivia, Argentina, and Chile appears interesting, particularly because this would enable further contrasting of privately and publicly organized resource projects. Moreover, to my knowledge no conflict research exists on the Chilean case. I also see potential in a cross-regional comparison of lithium projects, for example, with initiatives currently being developed in China. Finally, an engagement with lithium from the consumer side and the question of how relevant local grievances and conflicts are to global lithium governance could provide an interesting vantage point for scholarly engagement.

9.4 Outlook

For the Bolivian lithium case, I showed that while important grievances exist, conflicts have not emerged because important context factors impacted meaning-making. I found that the strong support and belief in the MAS government, the critical economic conditions, the resulting high hopes connected to lithium, as well as an inconclusive governance approach that does not clarify insiders and outsiders were important containing factors that helped prevent mobilizations against the lithium project. Moreover, important local cleavages are not easily bridged and have hindered the formation of local alliances around existing grievances. This, however, does not guarantee that the various emotional grievances in the project will not support conflict development in the future. If context factors change, this can impact local interpretations of the project and support alliances as a basis for social movement formation. Consequently, it is important that the Bolivian government takes emerging grievances and their meanings seriously, not only to understand local mobilization potentials but similarly to not encourage movement formation by unwise governance decisions (compare Simmons 2016b, 197–98).

The most severely felt local grievance in the lithium project is the participation in benefits. If project execution is further delayed and revenues do not materialize, the gap between expectations and reality is likely to increase, nourished by government communications, threats to subsistence, and past experiences. Also, the actual generation of income in the project, resulting in a legal obligation to pay royalties to the producing municipality, will force the government to depart from its conflict-containing non-transparent governance approach. Payments to one community over another or the definition of a regional payment scheme based on the current limited royalty quotas are very likely to intensify grievances. Moreover, an exclusion of individual actor groups from benefits could also impact meaning-making and the interpretation of currently secondary environmental concerns. As a comparison with other mining projects indicates, externalities become relevant factors in demanding compensation when they are significant or when other forms of benefits do not materialize (compare Chapter 4.5.2). This is exacerbated by limited local information on potential impacts which opens the possibility to link lithium, as some interviews already indicate, to all kinds of environmental change in the region.

At the same time, the local MAS frame continues to be strong. As long as different local groups connect hope of progress with this administration, its resource-based development model, and the lithium project, local meaning-making will continue in a way that hinders alliance formation between estranged local communities. Moreover, considering that economic grievances are continuously intensifying between local actors, a community-spanning alliance seems even less probable. In result, what is likely to emerge when individual economic grievances intensify is what Jasper (1998) described as diffuse movements. In the Bolivian case, this could mean protests by individual local blocks against government policies with limited overall impacts. Moreover, a critical mass is not likely to be reached in the remote and sparsely populated areas.

In result, a more relevant conflict scenario exists at the departmental level. In the city of Potosí, a positive MAS frame is not as relevant and support for the government has been rapidly declining. At the same time, protests have intensified, specifically against centralization tendencies in national politics. While lithium has only played a minor role in this emerging protest front until 2016, this is likely to change in the moment the project generates visible revenues or the perception consolidates that lithium has evolved as a white elephant of failed industrialization. Moreover, at the departmental level, with its protest-experienced miner-front, political opportunity structures and resources for protest formation are much more substantial. In such a scenario, similar to the LITHCO case 30 years prior, instead of a horizontal movement with estranged neighboring communities, opposing local actors could join in a vertical coalition with departmental actors against benefit capture at the national level. I assume that such a movement would, however, comparable to the LITHCO experience, be equally diffuse. Participating groups are unlikely to develop a joint interpretation on the question of revenue distribution, as this economic grievance connects to different individual interests that are not easily bridged in a zero-sum-game.

In relation to the nationally declining support for the MAS and the referendum President Morales lost in February of 2016, *de jure* prohibiting him to run again in 2020 (which he might, however, simply ignore), a policy change at the national level is another possible scenario. A switch to a private management of the lithium project, similar to projects in Argentina, is a frequent demand of the opposition. This could completely change the local meaning-making context and provide a scenario that invalidates current context factors preventing protest emergence. What would be perceived as the private sell-out of lithium (after years of government communication of a public lithium project) could also support the reemergence of the coopted FRUTCAS union as an

important actor to facilitate the formation of a (partial) local alliance to join regional forces. An emerging local-regional coalition would then not primarily mobilize over the controversial economic grievance of benefit distribution. Rather, the core grievance of private actor dominance in lithium industrialization could be connected to an anti-neoliberal frame still strong in rural highland Bolivia. A look at the Bolivian mining history confirms that the emergence of conflict has been largely driven by mobilizations against private, not public resource initiatives.

9.5 Policy Options

Based on my research findings, I would like to give several policy recommendations with regards to the Bolivian lithium case and beyond. The analysis of the lithium project revealed that resource governance has impacted meanings awarded to grievances in local communities. Changes in governance could positively impact on these grievances and local perspectives on the initiative. While I have underlined the need for research to separate from a normative viewpoint in the analysis of governance, the following policy discussion will, by definition, involve normative arguments. While clearly the need to separate our scientific study of causes and outcomes from patronizing norms of what is “good” or “bad” exists, it is equally important to understand that certain policies are more desirable than others when a premise of the lithium project was to take local actor participation seriously. Yet, as I have shown for the lithium case, normatively desirable policies are not always conflict containing. This brings me back to a central understanding in conflict theory that conflict can also be an important and necessary factor for social change. The following points of policy advice are thus not developed from the lens of conflict containment and cannot entail easy solutions to complex problems. Rather, they were developed before the question of what a meaningful integration of local communities in the lithium project would have to entail to confront the most eminent grievances. For this, I recommend the following four steps:

- 1.) Rethink local consultation and monetary participation in the lithium project and in the mining sector in general. While place-based actors suffer from local externalities, their participation in revenues is minimal and locally targeted towards one municipality. This “rich kid” is envied by other communities and does not have the capacity to spend all the money efficiently. Possible solutions could be to:

- a. Reconsider the royalty and tax system, increase local participation, and develop a spending mechanism similar to the IDH which involves all salar communities represented by the Municipality Association of Los Lípez. Particularly in a region that is so scarcely populated, and with a project that is potentially a high generator of income, it should be possible to include the affected population in a meaningful rent-sharing agreement and still obtain sufficient revenues at the national level.
- b. Develop a local lithium fund for which all salar municipalities could apply to finance communal projects and receive money on a targeted, project-oriented basis, similar to a national resource fund.⁴⁰⁷
- c. Focus on local organizations, particularly educational facilities. While national universities receive funds from gas income through the IDH, local educational facilities could profit from lithium money supporting a place-based education infrastructure that allows future generations to take part in the project as employees. Local activists from Llica have already developed the idea of a lithium university that could profit from such a scheme.

A combination of the outlined measures could support a meaningful local integration in the lithium project and impact the interpretation of economic grievances. While individual measures of handing out money to one community or another would be a sure pathway to conflict, benefits that visibly support development across the region, could increase local and national support of a public management of the lithium project.

- 2.) Beyond the question of revenues, the government, in cooperation with locally accepted social organizations, could act as a mediator between local communities. This starts with a demonstrated dedication to incorporate all salar municipalities into the project. At the same time, it is important that the administration understands and values local knowledge in the development of the initiative. Both objectives could be reached through prior consultations. While the current legal framework for prior consultation in mining is deficient and a further recommendation is to develop the legal basis for a free and prior popular consent (and

⁴⁰⁷ This idea was inspired by a discussion with Guillermo Cortéz, mining analyst, and former Vice-Minister of Mining, interview, 4.5.2016.

implement it), already the will to consult local communities on the enacted mining framework would signal that local opinions and ideas matter to the administration. This could also, for the first time, allow for a regional discussion including all salar municipalities represented by their municipality association and counteract the perception of limited transparency.

- 3.) Moreover, although local communities currently award little importance to environmental issues, a substantive analysis of environmental implications of the project is still important. This must include a serious environmental impact study for lithium, in which the contracted consultancy works with local communities, national (and international) experts as well as environmental organizations in Bolivia (e. g. LIDEMA, FOBOMADE, SOPE). When environmental externalities become apparent in the future, this can not only intensify local grievances and demands for monetary compensation, but it could also support further ruptures in the MAS movement at the national level by highlighting the discrepancy between the environmentally friendly mother earth discourse and extractive expansion.
- 4.) At the same time, the government needs to strengthen neutral civil society and academic actors at the national and local level and not threaten their financial and legal support basis. An adequate planning of an initiative of this magnitude and technical complexity must involve public scrutiny and neutral scientific engagement with technological and administrative choices.

While these recommendations could positively affect the inclusiveness of the project and a meaningful local participation in lithium industrialization, they are still only “quick fixes” to problems that were developed long before the lithium initiative started. Instead of retroactively informing local communities about a project which was developed in a legal framework that already defined cooperation structures and cements power imbalances, governments should seek to develop long-term networks of trust and exchange with local communities (compare Ramos Barón 2015, 154). Local knowledge needs to be incorporated in the context of developing an initiative but also when elaborating on the legal framework for mining projects in general (ibid.). International organizations and INGOs in turn need to scrutinize national mining regulations and provide more accessible platforms for local communities to voice concerns.

The findings of this research also have important implications for the international discourse on lithium. A central conclusion has been that lithium exploitation produces important local grievances and conserves traditional mining dependencies in Bolivia. Yet, discourse on the international level is nearly exclusively related to positive effects. Under the buzzword “green technology”, global debates link to environmental sustainability by switching power sources in transportation from conventional fuel to electricity and the inevitability of such a technology change to conserve the planet. Thereby, the global debate does not provide a holistic analysis of the pros and cons of transferring global transportation systems to a technology based in lithium-ion batteries. A real energy transformation necessitates changes of our ways of life instead of seeking to uphold unsustainable practices of resource use. This study underlines that electric cars are not globally green, but that they combine the reduction of greenhouse gas emissions in the Global North with often destructive practices of resource exploitation in the Global South. With lithium, Latin American producers are in the current set-up unlikely to evolve from being mere raw material providers. Consequently, the Bolivian lithium project, as the only publicly organized initiative targeting value-adding in the region, also needs to be evaluated before this unequal global mining panorama. Despite its outlined faults, the Bolivian initiative was developed with the intention to separate from confining global power constellations in what could be called a learning project for national industrialization.

EU member states import lithium primarily from Latin America (European Commission 2010, 79). If the European Union, as well as other important promoters of electric mobility, above all the United States and China, want to take sustainable mobility seriously, they should seek a holistic evaluation of the risks connected to electric cars and the exploitation of the necessary resources. We still lack a sufficient understanding of the environmental and social problems connected to lithium exploitation in producer countries and I highly recommend further research both in the social and natural sciences.

With regards to international cooperation of the Global North with Bolivia, emphasis should not be placed on the obtainment of lithium carbonate as raw material. Instead, the support of technology development, research with the aim to design lower impact technologies for lithium exploitation in the Salar de Uyuni, and the establishment frameworks that allow for meaningful local consultations on lithium exploitation need to be at the center of a mutually beneficial knowledge exchange.

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Appendix

I Analytical Model: Governance Dimensions and Grievance Categories

Dimensions of Resource Governance	
Planning and decision-making	<ul style="list-style-type: none"> - Distribution of decision-making power <ul style="list-style-type: none"> ▪ Bureaucratization, turf ▪ Internal transparency ▪ Degree of centralization - Forms of project planning <ul style="list-style-type: none"> ▪ Market and impact studies ▪ Scientific investigations ▪ Bureaucratic simplification ▪ Adaptability - Internal and external transparency - Ideology
Stakeholder participation and integration	<ul style="list-style-type: none"> - Consultations/ information of local population <ul style="list-style-type: none"> ▪ Involvement third sector ▪ Involvement private sector ▪ Integration of disadvantaged population groups
Management of revenues	<ul style="list-style-type: none"> - Distribution of revenues <ul style="list-style-type: none"> ▪ Property rights regime ▪ Revenue investment ▪ Degree of decentralization in revenue management - Transparency and corruption control
Management of externalities	<ul style="list-style-type: none"> - Cost management <ul style="list-style-type: none"> ▪ Communication of impacts ▪ Legislation: environmental and social standards ▪ Monitoring and mitigation of externalities ▪ Regulation of externalities by third actors - Conflict management <ul style="list-style-type: none"> ▪ Conflict mediation instruments ▪ Conflict history (sensitivity to conflict history)
Further macro variables (economic and institutional vulnerability)	<ul style="list-style-type: none"> - Macroeconomic vulnerability <ul style="list-style-type: none"> ▪ Terms of trade ▪ Commodity prices ▪ Asymmetric information ▪ Economic diversification - Institutional quality in general <ul style="list-style-type: none"> ▪ Legal system / rule of law ▪ Tax system ▪ Civil liberties

Categories of Local Grievances	
Political Grievances	<p>How is the management of the resource project interpreted? How are institutional conditions in the project perceived? How is the local inclusion in the resource project perceived?</p> <ul style="list-style-type: none"> ▪ Strength and inclusiveness of institutions ▪ Degree of information, transparency, participation ▪ Degree of social control
Economic Grievances	<p>How are benefits of a resource project perceived? How is the management of benefits interpreted?</p> <ul style="list-style-type: none"> ▪ Monetary benefit distribution ▪ Impacts on local employment ▪ Impacts on basic services and infrastructure ▪ Capacity building ▪ Other benefits
Livelihood Grievances	<p>How are costs inflicted by the project interpreted? How is the cost management perceived</p> <ul style="list-style-type: none"> – Environmental impacts <ul style="list-style-type: none"> ▪ Water pollution ▪ Air pollution ▪ Soil pollution / waste / deforestation ▪ Other environmental impacts – Socioeconomic impacts <ul style="list-style-type: none"> ▪ Negative impacts on traditional economies ▪ Changes in ownership structures ▪ Migration / displacement ▪ Other socio-economic impacts – Cultural impacts – Health impacts – Other impacts
Supporting Factors in Grievance Meaning-Making	
Collective experiences, beliefs, and values	<ul style="list-style-type: none"> ▪ Interpretation of own (economic) situation / poverty ▪ Prior experience of extraction ▪ Prior experience with (mining) conflicts ▪ Cleavages between (local) population groups
Power Relations / Inequalities	<ul style="list-style-type: none"> ▪ Perception of power relations and hierarchies ▪ Interpretation of social inequalities
Framing of Resource Project	<ul style="list-style-type: none"> ▪ How is the resource project presented by the government and by stakeholders opposing it? ▪ Visions of development ▪ Ideology / Trust in government

II Timeline of the Lithium Project

Date	Phase	Legal Basis
1964	First scientific investigations in the area; Prof. Wolf of the German Mining University in Freiberg initiates geological and geochemical research in the Salar de Uyuni.	
1974	Cooperation between the French Research Institute ORSTOM and the UMSA is initiated; first estimations of the Bolivian lithium resources.	
2.7.1974	Large parts of the provinces Nor and Sur L�pez, including a great part of the Salar de Uyuni, are declared a fiscal reserve.	DS N� 11614
1976	Cooperation between the Bolivian Geological Service and the USGS under a joint agreement between the NASA and the Bolivian government is initiated.	
1982	Technical corporation agreement for the investigation and exploitation of the Bolivian salt flats between the Bolivian government of Siles Suazu, the Inter-American Development Bank and the Junta de Acuerdo de Cartagena.	
15.2.1985	The exploration and exploitation of the Uyuni mineral resources is declared a national priority. Creation of CIRESU for the development of the evaporite resources in the Salar de Uyuni.	Ley N� 719
16.5.1986	The Great Salar de Uyuni valley is declared fiscal reserve.	DS N� 21260
17.11.1989	Signature of a first contract with LITHCO for lithium exploitation. The contract was cancelled in May of 1990.	
1990-1992	Cooperation agreement between UMSA and UATF to develop the engineering design and test the feasibility of a lithium carbonate pilot plant in the Salar de Uyuni.	
14.2.1992	Signature of a second contract with LITHCO/FMC, which was renounced by the company in November of 1993.	
17.3.1997	New mining law facilitated private concessions over Bolivian mineral resources.	Ley N� 1777
8.4.1998	The fiscal reserve is reduced to include only the salt lake (salt crust). This allows private concessions (particularly for borates) over mining areas in the surroundings of the salar.	Ley N� 1854 (Ley Valda)

Date	Phase	Legal Basis
3.4.2002	Confirms the area of the fiscal reserve as established by Law N° 1854; the term “salt crust” was not sufficiently specified.	DS N° 26574
9.12.2003	The Salar de Uyuni is re-established as a fiscal reserve on the initial area declared by DS N° 21260 of 1986, exempting the area of the mineral reserves at San Cristóbal.	Ley N° 2564
1.5.2007	Complete national territory is declared a fiscal reserve.	DS N° 29117
31.7.2007	COMIBOL is reassigned the power to explore, exploit, industrialize, and commercialize resources as well as the faculty to administer fiscal reserves in mining.	Ley N° 3720
9.1.2008	Gradual revocation of the fiscal reserve on the Bolivian territory through the subscription of lease contracts for mining areas in accordance with the correspondent regulations of the mining ministry.	DS N° 29165
1.4.2008	Industrialization of evaporite resources is declared national priority and COMIBOL is mandated to create administrative structures; initial budget of 5.7 million USD.	DS N° 29496
3.4.2008	Creation of the National Directory for Evaporite Resources (DNRE) and approval of the design for the pilot plants.	COMIBOL Resolution N°3801/2008
10.3.2010	Founding of the Bolivian Company for Evaporite Resources (EBRE).	DS N° 444
20.3.2010	Retrieval of DS 444 after public protests in Potosí.	DS N° 454
29.6.2010	DNRE is promoted to National Management Committee (Gerencia Nacional) – GNRE.	COMIBOL Resolution N° 4366/2010
10/2010 (presented 15.12.2010)	National Strategy for the Industrialization of the Evaporite Resources of Bolivia.	
28.11.2010	BCB credit of 836,400,000 BS (120 million USD) for the project is approved.	Financial Law N° 062
14.3.2011	MMyM approves pre-feasibility study for project phase III (industrialization) with a budget 400 million USD.	MMyM Resolution 005
13.5.2011	Signing of a contract between COMIBOL and BCB for 35,350,000 (5 million USD) for the installation of a pilot plant for lithium-ion-battery production.	Contract SANO N° 179/2011

Date	Phase	Legal Basis
23.12.2011	BCB is authorized to give an extraordinary credit of up to 5,332,050,000 BS (765 million USD) to the project.	Financial Law N° 211
2/2012	Inauguration of the experimental station in Tauca (Salar de Coipasa).	
9.8.2012	Inauguration of the pilot plant for potassium chloride production.	
3.1.2013	Inauguration of the pilot plant for lithium carbonate production.	
17.2.2014	Inauguration of pilot plant for lithium-ion-battery production in La Palca, Potosí.	
2014	Signature of the contract between COMIBOL and BCB over 237,274,016 BS (34 million USD) for the implementation of a Center for Investigation, Development and Piloting (CIDYP) in La Palca, Potosí.	Contract SANO 33/2014
23.3.2015	The parameters of the Bolivian salt flats (other than the Salar de Uyuni) which were declared state-reserved areas by the new mining law of 2014 are defined. The decree also clarifies the handling of former properties and contracts signed by CIRESU.	DS N° 2311
7/2015	Contract with the Chinese company CAMC for the construction of the industrial potassium plant.	
16.8.2015	Contract with the German company K-UTEC for an engineering design for the industrial lithium carbonate plant.	
12.11.2015	Contract with the French company Greentech for the purchase of a pilot plant for cathode materials.	
2/2017	The lithium project is moved from the authority of the MMyM to the newly founded Ministry of Energy.	
27.4.2017	The lithium company YLB is founded. In July of 2017 by DS N° 3227 Juan Carlos Montenegro is named Executive Director of YLB.	Ley N° 928
23.8.2017	Inauguration of the pilot plant for cathode materials in La Palca.	

III Overview of Conducted Interviews

No	Date	Name	Position / Organization	Interview Location	Interview Type
1	22.9.2015	Dr. Heiner Marx	Chairman of K-UTEC Salt Technologies	Sondershausen (Germany)	Back-ground
2	23.9.2015	Oscar Choque	Founding member, Association Ayni - Verein für Ressourcengerechtigkeit	Dresden (Germany)	Regular
3	9.10.2015 12.10.2015 26.10.2015	Milton Lériða Aguirre	Independent investigator; initiator of the project “Bolivian Lithium University”	La Paz (originally Llica)	Back-ground
4	14.10.2015	Daniel Agramont Lechín	Director of Economic Development at the Friedrich Ebert Foundation in Bolivia	La Paz	Back-ground
5	16.10.2015	Anonymous	Policy officer, GNRE	La Paz	Regular
6	21.10.2015	Héctor Córdova Equivar	Mining analyst, Foundation Jubileo; former President of COMIBOL	La Paz	Regular
7	23.10.2015	Javier Moeller	Policy officer, German-Bolivian Chamber of Industry and Commerce	La Paz	Back-ground
8	26.10.2015	Carlos Arze Vargas	Policy analyst, Center for Labor and Agrarian Development (CEDLA)	La Paz	Regular
9	28.10.2015	Fausto García Lopez	Former mayor of Llica	La Paz (originally Llica)	Regular
10	30.10.2015	Anonymous	Private mining sector representative	La Paz	Regular
11	4.11.2015	Anonymous	Private mining sector representative	La Paz	Regular
12	4.11.2015	Martha Niura	Policy officer, Ministry of Mining and Metallurgy	La Paz	Regular
13	5.11.2015	Justo Zapata Quiroz	Head of the Department of Investigation, Postgraduate Studies and Social Interaction, UMSA University La Paz	La Paz	Regular
14	5.11.2015	Juan Carlos Montenegro Bravo	Professor in engineering, UMSA University La Paz; since March 2017, Executive Manager of the lithium company YLB	La Paz	Regular
15	9.11.2015	Carlos Sandy Antezana	Professor of geology, Technical University of Oruro; former MAS Senator	Oruro	Regular

No	Date	Name	Position / Organization	Interview Location	Interview Type
16	12.11.2015	Marcelo Castro Romero	Head of Engineering and Implementation, Llipi pilot plants, GNRE	Llipi Plant	Regular
17	12.11.2015	Raúl Martínez Choque	Community Relations Manager, Llipi pilot plants, GNRE	Llipi Plant	Regular
18	12.11.2015	Luis Villarroel Borda	Technical head, potassium pilot plant in Llipi, GNRE	Llipi Plant	Back-ground
19	13.11.2015	Lidia Morales Mamani	Vice-President, Association of Producers of Quinoa and Animal Breeding (APROQUIGAN), Llica	Llica, Daniel Campos Province	Regular
20	13.11.2015	Anonymous	Representative, municipality government of Llica	Llica	Regular
21	13.11.2015	Marino Ayaviri Soliz	Provincial delegate of the Sub-Prefecture, Daniel Campos Province	Llica	Regular
22	14.11.2015	Sigfredo Calle	Former President, Civic Committee of Llica	Llica	Regular
23	14.11.2015	Eliodoro Aguirre	Citizen of Llica	Llica	Regular
24	14.11.2015	Olga Lucas	Quinoa farmer in Llica	Llica	Regular
25	14.11.2015	Edgar Apala Vidaure	Mayor of Llica (MAS)	Llica	Regular
26	14.11.2015	Francisco Lopez	Indigenous authority, Daniel Campos province; bailiff of the <i>ayllu</i> Cahuana	Llica	Regular
27	14.11.2015	Dionisio Villca	President, quinoa cooperative APROQUIGAN, Llica	Llica	Regular
		Daniel Carlo	Accountant, quinoa cooperative APROQUIGAN, Llica		
28	15.11.2015	Clima Coallaviri	Mining engineer	Uyuni (originally Tahua)	Regular
29	16.11.2015	Adelio Lopez Flores	Former President, Civic Committee of Tahua	Uyuni (originally Tahua)	Regular
30	16.11.2015	Delia Aleyo	“Political Instrument”, FRUTCAS	Uyuni	Regular
31	16.11.2015	Patricio Mendoza Huaylla	Mayor of Uyuni (MAS)	Uyuni	Regular

No	Date	Name	Position / Organization	Interview Location	Interview Type
32	17.11.2015	Elias Choque Colque	Departmental Secretary of Mining, Metallurgy and Hydrocarbons of Potosí	Potosí	Regular
		Richard Apaza Candra	Technical officer, Departmental Agency of Mining, Metallurgy and Hydrocarbons in Potosí		
33	18.11.2015 19.11.2015	Jaime Claros Jiménez	Former director of the lithium project of the University of Freiberg and the UATF University of Potosí; former technical advisor of COMCIPO; important figure in the Defense Committee of Potosí against the LITHCO project	Potosí	Regular
34	19.11.2015	Felicidad Pañailillo Chara	Executive Director of the Potosí Society for Ecology (SOPE)	Potosí	Back-ground
35	27.11.2015	Anonymous	Mining analyst and author	La Paz	Regular
36	1.12.2015	Adrian Seufert	Vice-Chancellor, German Embassy	La Paz	Back-ground
		Claudia Propfe	Associate for Development Cooperation, German Embassy		
37	1.12.2015	Antonio Bozo	Investigator, UATF University Potosí	La Paz	Back-ground
38	1.12.2015	Benigno Mamani Cuenca	Specialist for the purification process, GNRE	La Paz	Back-ground
39	1.12.2015	Froilan Condori	Former President, FRUTCAS; former Mayor of Uyuni	La Paz (originally Uyuni)	Regular
40	2.12.2015	Juan Carlos Zuleta Calderón	Lithium market analyst	La Paz	Regular
41	3.12.2015	Manuel Olivera Andrade	Researcher on lithium, UMSA University La Paz	La Paz	Back-ground
42	4.12.2015	Juan Ronandt Carballo Fernandez	Head of Electrochemical and Battery Directorate, GNRE	La Paz	Regular
43	4.12.2015 7.12.2015	Jaime Villalobos	Minister of Mining in the Estenssoro government, 1986-89	La Paz	Regular
44	14.12.2015	Dionisio Garzon Martínez	Minister of Mining in the interim Veltzé government, 2005-06	La Paz	Regular

No	Date	Name	Position / Organization	Interview Location	Interview Type
45	15.12.2015	Óscar Ballivián Chávez	Geologist and lithium expert from Bolivia; former LITHCO consultant	La Paz	Regular
46	2.3.2016	Dr. Eike Kaps	Head of Process Department, ERCOSPLAN	Erfurt, Germany	Back-ground
47	16.3.2016	Federico Nacif	PhD-candidate, National University of Quilmes, Argentina	Quilmes, Argentina	Back-ground
48	17. 3.2016	Pia Marchegiani	Citizen Participation Area Director, Fundación Ambiente y Recursos Naturales; PhD-candidate and associate researcher, Global Studies Program FLACSO, Buenos Aires, Argentina	Buenos Aires, Argentina	Back-ground
49	17.3.2016	Adrian Slipak Andrea Puente	Researchers, Study Group Geopolitics and Natural Goods, Institute for Latin American and Caribbean Studies, University of Buenos Aires, Argentina	Buenos Aires, Argentina	Back-ground
50	23.3.2016	Pablo Villegas Nava	Researcher, Natural Resources Department, Documentation and Information Center of Bolivia (CEDIB)	La Paz	Regular
51	28.3.2016 22.4.2016	Jorge Campanini	Researcher, Natural Resources Department, CEDIB	Cochabamba	Regular
52	25.3.2016	Dr. Saúl Escalera	Chemical engineer, San Simón University, Cochabamba	Cochabamba	Regular
53	5.4.2016	Juan Carlos Zambrana Vargas	Member of the COMIBOL Board of Directors	La Paz	Regular
54	5.4.2016	Pedro Ticona Hurtado	Member of the COMIBOL Board of Directors	La Paz	Regular
55	7.4.2016 14.4.2016	Rolando Jordán Pozo	Analyst; Professor in mining economics	La Paz	Regular
56	12.4.2016	Julio Jemio Ortuño Maria Galarza Coca	Environmental Director, COMIBOL Technical officer, Environmental Directorate, COMIBOL	La Paz	Back-ground
57	13.4.2016	Anonymous	Policy Officer from the legislative branch	La Paz	Regular
58	13.4.2016	Fernando Molina	Former director, Pazos Kanki Foundation; journalist, author, analyst	La Paz	Regular

No	Date	Name	Position / Organization	Interview Location	Interview Type
59	13.4.2016	Miguel Vargas	Policy officer, Electoral Tribunal; former policy analyst, Judicial and Social Investigation Center (CEJIS)	La Paz	Back-ground
60	15.4.2016 29.4.2016	Monica Subieta	Policy officer, Department for Environment, Industrial Safety, and Work Health, GNRE	La Paz	Back-ground
61	18.4.2016	Huascar Pacheco Ortega	Independent researcher; former researcher on mining conflicts, UNIR Foundation	La Paz	Regular
62	19.4.2016	Freddy Mamani	Policy officer, Foreign Ministry; former President of FRUTCAS	La Paz (originally Uyuni)	Regular
63	20.4.2016	Horacio Cortéz	Policy officer, Unit for Evaporites and Non-Metallic Resources, Ministry of Mining and Metallurgy	La Paz	Regular
64	25.4.2016	Adolfo Huayllas	Mining Cooperative Estrella del Sur	Rio Grande, Nor Lipez Province	Regular
65	25.4.2016	Luis Ali Lazo	Mining Cooperative SOCOMIRG (Sociedad Cooperativa Minera Rio Grande – SOCOMIRG)	Rio Grande	Regular
66	25.4.2016	Limbert Huayllas	President, Civic Committee of Rio Grande (third municipal authority)	Rio Grande	Regular
67	25.4.2016	Hitochs Alvaréz Ríos	Engineer, Veloman Industries (a contracting company of GNRE; did his MA on lithium with Jaime Claros at UATF)	Rio Grande	Regular
68	25.4.2016	Amador Quintin	Municipality agent, Rio Grande (second municipal authority)	Rio Grande	Regular
69	26.4.2016	Lydia Abiza	Executive Director, FSUMCAS (Unique Syndical Federation of Peasant Women of the South Altiplano “Bartolina Sisa” - Federation Sindical Única de Mujeres Campesinas Altiplano Sud “Bartolisa Sisa”)	Uyuni, Antonio Quijarro Province	Back-ground
70	26.4.2016	Cristobal Ramos Aguiles Copa	Former Director, Civic Committee of Colcha “K”; former bailiff Local engineer, Colcha “K”	Uyuni (originally Colcha “K”)	Regular
71	27.4.2016	Beimar Mayorga	Provincial Delegate, Sub-Prefecture in the Nor Lipez Province	Colcha “K”, Nor Lipez Province	Regular

No	Date	Name	Position / Organization	Interview Location	Interview Type
72	27.4.2016	Miltón Belén	Legal consultant, Municipality Council of Colcha “K”	Colcha “K”	Regular
73	27.4.2016	Juan Llave	Director of Community Relations, Autonomous Municipality Government of Colcha “K”	Colcha “K”	Regular
74	27.4.2016	Evan Yucra	Consultant on Community Relations, Autonomous Municipality Government of Colcha “K”	Colcha “K”	Regular
75	27.4.2016	Agapito Cabrera Argote	Municipal Secretary for Economic and Productive Development, Autonomous Municipality Government of Colcha “K”	Colcha “K”	Regular
76	27.4.2016	Reyna Bernal	Communications’ Director, Autonomous Municipality Government of Colcha “K”	Colcha “K”	Regular
77	27.4.2016	Eugerto Cayo López	Director, Primary School “Eduardo Avaroa”, Colcha “K”	Colcha “K”	Regular
78	27.4.2016	Regina Reyes	Vice-Bailiff, Colcha “K”	Colcha “K”	Regular
		Ignacio Calzina	Director, Electoral Tribunal of Colcha “K”		
		Andrés Basilio	Lawyer, Colcha “K”		
79	28.4.2016	Mario Ramos Gonzales	President, Social Control, Uyuni	Uyuni	Regular
80	28.4.2016	Teodoro Colque	Head of CRESIS (Regional Central of Industrial Cooperatives of the South - Central Regional de Cooperativas Industriales del Sur), Colchani	Uyuni (originally Colchani)	Regular
81	28.4.2016	Ali Lazo	<i>Curaca</i> , Colcha “K”	Uyuni (originally Colcha“K”)	Regular
82	28.4.2016	Icler Soto Quispe	Executive Director, Municipality Association of the Great Land of Los Lípez (Mancomunidad de Municipios Gran Tierra de los Lípez)	Uyuni	Regular
83	28.4.2016	Joaquin Yucra	Bailiff, Colchani	Colchani, Antonio Quijarro Province	Regular

No	Date	Name	Position / Organization	Interview Location	Interview Type
84	28.4.2016	Celso Lopez	President, Vigilance Committee of CRESIS	Colchani	Regular
85	4.5.2016	José Pimentel	At the time of the interview: consultant of the COMIBOL presidency; since January 2017, President of COMIBOL; former Minister of Mining (2010–2012)	La Paz	Regular
86	4.5.2016	Guillermo Cortéz	Mining analyst; former Director, National Mining Committee; former Vice-Minister of Mining; former policy officer, COMIBOL	La Paz	Regular
87	4.5.2016	Roger Carvajal	Chemistry professor, UMSA University La Paz; former Vice-Minister of Science and Education	La Paz	Regular
88	6.5.2016	Gary Rafael Anze Martín	Technical Director, Environmental Consultancy Simbiosis	La Paz	Regular
89	6.5.2016	Daniel Oropeza Echeverria	Former Prefect of Potosí	La Paz (originally Potosí)	Regular
90	11.5.2016	Ever Garcia Coro	President, Municipality Council of Salinas de Garcí Mendoza	Salinas de Garcí Mendoza, Province Garcí Mendoza	Regular
		Javier Calani Villca	Mayor, <i>ayllu</i> Huatri; Municipality Council of Salinas de Garcí Mendoza		
		Aldo Vargas	Civil environmental engineer; Municipality Council of Salinas de Garcí Mendoza		
		Gladys Mayorga Gonzales	Quinoa cooperative Proquinbol; Municipality Council of Salinas de Garcí Mendoza		
		Nancy Chila García	Municipality Council of Salinas de Garcí Mendoza		
		Julia Colque	Vice-President, Commission on Health and Education, Municipality Council of Salinas de Garcí Mendoza		
91	11.5.2016	Mario Alanoc	<i>Mallku</i> (indigenous authority), <i>Marka</i> Salinas de Garcí Mendoza	Salinas de Garcí Mendoza	Regular
92	11.5.2016	Rolando Mamani Iquize	General Secretary, Autonomous Municipality Government, Salinas de Garcí Mendoza	Salinas de Garcí Mendoza	Regular

No	Date	Name	Position / Organization	Interview Location	Interview Type
93	12.5.2016	Augustín Pérez Lausán	Head of the geology faculty, UATF University of Potosí	Potosí	Back-ground
94	12. 5.2016	Eloy Caguecirri	Environmental policy officer, Departmental Agency of Mother Earth, Potosí	Potosí	Back-ground
95	12.5.2016	Nelson Baldivia	Policy officer, Departmental Agency of Industrialization, Potosí	Potosí	Back-ground
96	13.5.2016	Eloy Calizaya Mamani	President, Legislative Departmental Assembly (June 2015 to June 2016); former President of FRUTCAS	Potosí	Regular
97	14.5.2016	Jhonny Llally Huata	President, Civic Committee of Potosí	Potosí	Regular
98	15.5.2016	David Clemente	UATF University Potosí, student with Jaime Claros	Potosí	Back-ground
99	17.5.2016	Hernando Palma	Academic director, Institute for Chemistry, UMSA University La Paz	La Paz	Back-ground
		Jorge Quintanilla Aguirre	Responsible for hydrochemistry, Institute for Chemistry Investigations, UMSA University in La Paz		
100	17.5.2016	Rafael Echazú	Consultant on Transport and Logistics, Union Federation COB; former President of the train company ENFE	La Paz	Regular
101	17.5.2016	Luis Alberto Echazú Alvarado	Managing Director, GNRE (until January 2017)	La Paz	Regular
102	18.5.2016	Anonymous	Representative of the GNRE Management	La Paz	Regular
103	19.5.2016	Dr. Saúl Cabrera	Institute for Natural Gas, Institute for Chemical Investigations, UMSA University La Paz	La Paz	Regular
104	19.5.2016	Ilse Beltrán Monasterios	General Director, Vice-Ministry for Mining Policy, Ministry of Mining and Metallurgy	La Paz	Regular
105	20.5.2016	Guillermo Roelants	CEO Tierra Company; former President of the GNRE Scientific Committee	La Paz	Regular

CODE SYSTEM					
Category	Subcategory	Codes Subcodes	Definition	Anchor Examples	Linked Codes
GENERAL PROJECT DESCRIPTION (Framings)	Advances		This category relates to general descriptive statements about the lithium program as a whole. It captures more the philosophy of the project than the actual politics. Included are evaluations of the general project outcome, descriptions of the political ideas and the governmental vision behind the lithium program (What is particular or different about this program?) as well as assessments of non-governmental actors of the project as such and the vision of the government.		
			This category includes general descriptive statements about the advances in the lithium program until today.		
		Significant Advances	This subcategory relates to general and positive descriptive statements about the lithium program being successful, demonstrating significant advances. This is expressed e.g. through statements that the project brings visible results and is supported by large investments (positive connotation). Indications: positive terms such as agile, successful or impressive.	<p>“And in the plant one can find very modern machines; it is impressive. It is a gigantic project; the infrastructure constructed, the hundreds of equipments, the laboratories last generation, they are really impressive, academically, technologically.” (Original: “Y en la planta uno puede encontrar maquinaria modernísima, impresionante es. Es un proyecto gigantesco, la infraestructura construida, los cientos de equipos, los laboratorios de última generación, son realmente impactantes, académicamente, tecnológicamente.”)</p> <p>“We are in the phase of a great investment.” (Original quote: “Estamos en una etapa de una gran inversión.”)</p>	
		Large Investment	Large investments are made into the project (positive connotation).		Industrialization
		Few Advances / Problems	This subcategory includes general and negative descriptive statements about the lithium program being unsuccessful, demonstrating few advances. This is expressed e.g. through scientific and technical doubts and indications that foreign support is needed (negative connotation).		Lack of Capacity Spend too much money
		Scientific and Technical Doubts	Scientific and technical doubts about the advances of the governmental lithium project.	<p>“It turns out to be totally irresponsible to continue to invest large amounts of scarce resources in the construction in evaporation pools which might not be part of an efficient production process for lithium in the future.” (Original quote: Resulta totalmente irresponsable seguir invirtiendo cuantiosos recursos escasos en la construcción de piscinas de evaporación que podrían no ser parte de un proceso eficiente de producción de litio en el futuro.”)</p>	Lack of Capacity
		Foreign Involvement Needed	Idea that the current industrialization strategy is wrong and that it brings no advances. Foreign support and involvement is needed.	<p>“But, speaking honestly, I am of the mind that everything needs to be done based on contracts, that a foreign company comes at last which brings its technology and obviously its investment to find a balance in the revenues.” (Original quote: “Pero, si se hablara con honradez, yo soy de la idea de que todo debería hacer en contrato, que venga una empresa extranjera que ponga su tecnología e obviamente su inversión en fin y encontrar un punto de equilibrio en las utilidades.”)</p>	
		Delays	General descriptive statements that delays exist in the project, not linking them directly to individual governance dimensions. These statements can be both linked to generally positive evaluations (“There have been some delays but we have reached so much”) as well as generally negative evaluations of the program (“chosen	<p>“It is like this, the project started in 2008 and there is too much delay.” (Original quote: “Es así que el proyecto empezó en 2008, y existe demasiado retraso.”)</p>	
		Development Opportunity for Bolivia	This subcategory includes statements that define the strategic lithium program as a development opportunity for Bolivia (with a positive connotation). These statements describe e.g. positive characteristics of lithium as an important resource for energy storage and the comparative advantages of the Bolivian resources.	<p>“We have come with a political vision, having the security that this was the only opportunity that life and the fatherland would give us to be able to make something great for the country. This is part of the liberation from economic and political dependency.” (Original quote: “Nosotros hemos venido con una visión política, teniendo la seguridad de que era la única oportunidad que la vida y la patria nos daba para poder hacer algo grande por el país. Esto es parte de la liberación de la dependencia económica y política.”)</p>	Benefits

CODE SYSTEM					
Category	Subcategory	Codes Subcodes	Definition	Anchor Examples	Linked Codes
		Comparative Advantages	Bolivia has comparative advantages over other lithium providers. Often linked to statements of lithium as a development opportunity.	“There are various factors: the raw material exists in abundance, the workforce in Bolivia is a lot cheaper than in Korea, Japan or Europe. Thus, there are advantages.” (Original quote: “Hay varios factores: la materia prima existe en abundancia, la mano de obra en Bolivia es mucho más barata que la mano de obra coreana, japonesa o europea. Entonces hay ventajas.”)	
		Largest Lithium Resources	Reference to Bolivia having the largest lithium resources which gives the country comparative advantages over other lithium providers. Often linked to statements of lithium as a development opportunity.	“I think this has created impact, sympathy and interest at the global level; we have the privilege of being one of the countries with the largest lithium reserves.” (Original quote: “Creo que ha logrado impacto, simpatía e interés a nivel mundial, tenemos el privilegio de ser uno de los países con las más altas reservas de litio.”)	
		Lithium Boom	Reference to a current or future boom of lithium as an important resource for energy storage. Often linked to statements of lithium as a development opportunity.	“Now everybody waits for the incremental growth of the lithium carbonate price, if the use of lithium-ion batteries in cars becomes a general phenomenon. In all of the world they start to move for lithium.” (Original quote: “Ahora, todos esperan que haya un repunte brutal del precio del carbonato de litio, si se generaliza el uso de las baterías del ion-litio en automóviles eléctricos. En todo el mundo comenzaron a moverse por el litio.”)	
		Lithium as Strategic Resource	Reference to lithium being a strategic resource for Bolivia and / or the world. Often linked to statements of lithium as a development opportunity.	“Why is it considered strategic? Because it is considered that, as the battery is a recipient of electric energy and can have an autonomy of some 140 km (...) one can reach the conclusion, when developing this technology, Bolivia can convert itself into a new source of a great alternative to replace the use of carbon-fossil elements.” (Original quote: “¿Por qué se considera estratégico? Porque se considera que, como la batería es un recipiente de energía eléctrica y puede tener una autonomía de unos 140 km. (...) Se puede llegar a la conclusión, desarrollando esta industria, Bolivia puede convertirse en una nueva fuente de una gran alternativa para reemplazar el uso de los elementos carburantes fósiles.”)	
	Lithium / MAS Politics Different		Relates to a positive evaluation of the lithium project that links to the idea that the project and the MAS mining politics in general are something completely new for the country, that they need to be distinguished from old extractive ideas and the neo-liberal economic model. Related to typical MAS-expressions such as “process of change.” Links to the idea of industrializing the Bolivian resources in a sovereign way (with Bolivian money and people, without foreign investment).	“The policy of our brother President is not to export primary resources any more; they have to be exported already with added value.” (Original quote: La política de nuestro hermano Presidente es ya no exportar materia prima, tiene que exportarse ya con un valor agregado.”)	Historic Experience/ Collective Beliefs
		Sovereignty	Relates to the idea that the project supports national sovereignty through industrialization in the country (contrary to foreign exploitation of primary resources for export). It thus highlights the need for a sovereign Bolivian management of the program with national resources and national knowledge without foreign supremacy. Frequent expression: “100% Bolivian”	“Partners not employers. We make this job but as partners, not like they did it before.” (Original quote: “Socios y no patronos. Hacemos este trabajo pero como socios, no como ellos anteriormente.”)	Historic Experience/ Collective Beliefs
		Industrialization	This code includes statements on the lithium program as an industrialization program which therefore means an important development opportunity for Bolivia. The idea of industrialization is frequently linked to claims of regaining sovereignty with an industrialization project that is financed by Bolivian resources and carried out by the Bolivian people (not foreign companies).	“The third most important point is that we do not limit us by only thinking in the production of lithium carbonate and other brine derivatives but also in entering in the fabrication of lithium batteries; considering that this is the real step forwards industrialization because the other products son inmediatas.” (Original quote: “El tercer punto más importante, es que no nos limitamos a pensar sólo en la producción del carbonato de litio y otros derivados de las salmueras sino también en ingresar a la fabricación de baterías de litio. Considerando que ese es el verdadero paso de industrialización, porque lo otro son productos intermedios.”)	Lithium as a Development Opportunity

CODE SYSTEM					
Category	Subcategory	Codes Subcodes	Definition	Anchor Examples	Linked Codes
LITHIUM GOVERNANCE DIMENSIONS		Supports National Self-Esteem	The lithium project is considered a strategic or flagship project . Sovereign industrialization of lithium and potassium supports self-esteem of Bolivian nation.	“This plant, what is it giving to the country? (...): To have found its self-esteem. It is a qualitative value for the Bolivian man, who has never industrialized anything. If we can industrialize lithium carbonate, potassium chloride and its derivatives, we can industrialize anything.” (Original quote: “Esta planta, ¿qué le está dando al país? (...): Haber encontrado su autoestima. Es un valor cualitativo para el hombre Boliviano, que nunca ha industrializado nada. Al industrializar el carbonato de litio, el cloruro de potasio y sus derivados, pues podemos industrializar lo que sea.”)	Historic Experience/Collective Beliefs
		Lithium / MAS Politics Show Continuities	In contrary to statements of the above category that lithium and MAS mining politics embody something new, this category establishes that the mining politics of Evo Morales in general and lithium project in particular follow continuities, mostly old extractive concepts (support for the extraction of raw materials for exportation without value-adding in the country -> neo-extractivism)	“In my opinion, it is simply part of this extractivism, meaning that they continue to view natural resources, including the evaporite resources, from the point to their extraction, looking at the possibility to obtain the largest rents possible. Nothing more. These are the same politics, there are no changes.” (Original quote: “En mi criterio, es parte simplemente de este extractivismo, es decir, se sigue viendo los recursos naturales, incluidos los evaporíticos, desde el punto de vista de su extracción con miras a poder obtener la mayor renta posible. Nada más. Sigue siendo la misma política, no hay cambios.”)	Historic Experience/Collective Beliefs Flawed Mining Politics
		Natural Conditions Salar	This descriptive sub-category includes general observations that outline that the natural conditions in the Salar de Uyuni are less optimal (high magnesium content, rain etc.) which poses a challenge to the project.	“Because one of the mayor difficulties in the Uyuni brine is the relationship magnesium - lithium, which is 25:1, and this makes the process more expensive, it results in less product of less quality as in other zones, in other regions of the world.” (Original quote: “Porque una de las dificultades mayores de la salmuera de Uyuni es la relación magnesio - litio, que es 25:1, y eso encarece el proceso, hace que el producto sea menos, de menor calidad que en otras zonas, que en otras regiones del mundo.”)	Scientific and Technical Doubts
		Planning and Implementation	The category includes statements specifically about governance, this instruments of project implementation, and is structured along the theoretically defined governance dimensions while including case-specific codes and sub-codes. Describes politics of planning and project implementation.		
		Knowledge Generation	Descriptions of how technical and scientific knowledge was generated in the project as a basis for project planning and a result of project implementation. (Idea: Knowledge gap has been closed.)	“Today, at least, we can say that we have educated many technicians, that we have reached international exchanges, we have people that have made their master degrees on lithium and we have all the baggage, knowledge that could qualify positively for the advance.” (Original quote: “Hoy por lo menos, decir, que hemos formado muchos técnicos en esta tecnología, se han logrado intercambios internacionales, tenemos gente que ha hecho maestrías sobre el tema de litio y bueno tenemos todo un baggage, conocimiento que puede calificarse como positivo para el avance.”)	Lithium / MAS Politics Different Benefits - Education
		HR-Policy and Training	General description of the human resources policies of the government. While negative evaluations of HR-policies are summarized in the “Lack of Capacity - Lack of Experience” subcategory, this sub-category includes neutral and positive descriptions of the HR-situation and the policies implemented.	“I do not have problems, because there is a production of professional human resources in the universities, there is a good offer and they qualify themselves in the project.” (Original quote: “No tengo problemas. Porque la producción de recursos humanos profesionales en las universidades, existe buena oferta y se califican dentro del proyecto.”)	Benefits - Education
		Administrative Capacity	Statements concerning the general administrative capacity of the government to plan and implement the project. Positive evaluations as well as critique of general planning decisions in the project that demonstrated the administrative capacity.		

CODE SYSTEM					
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		<i>Determination</i>	Governmental management is described (with a positive connotation) as determined indicating high administrative capacity.	“I told the Koreans (...) we are courageous, we want to be like this and we will accomplish this because it is our willingness to have this.” (Original quote: “Yo les decía a los coreanos (...) nosotros somos osados, queremos ser así y lo vamos a conseguir porque esa es nuestra voluntad de tener.”)	Lithium / MAS Politics Different
		<i>Agility and Adaptability</i>	Governmental management is described as agile and adaptable with a positive connotation indicating high administrative capacity.	“Anyways, they continue to have this bureaucratic system, we could say, but currently with an agility in the processes. (...) Thus, currently, the processes and the tendering of the construction of the potassium plant were accelerated and they are making the final design for the lithium carbonate plant.” (Original quote: “De todos modos, sigue teniendo ese sistema burocrático, podemos decir, pero con una agilidad, actualmente, en los procesos (...). Entonces, actualmente, se han acelerado los procesos y el concesionario en la construcción de la planta industrial del cloruro de potasio y haciendo el diseño final de la planta de carbonato de litio.”)	Lithium / MAS Politics Different
		<i>Lack of Capacity</i>	Describes a persistent lack of administrative capacity both in the central government and in sub-national governments.		Few Advances / Problems
		<i>Lack of Infrastructure</i>	Statements that outline the difficult infrastructural situation in the project region, where nearly no infrastructure was present at the start of project. This posed a considerable challenge for project implementation. This is not only a negative category, since particularly project supporters connect this to the knowledge generated since the start of the project.	“For a start, because of a lack of services. There was no electric light, no water, no mobile phone [signal] here, no internet, the roads were not good. When I say here, I mean in all the region. Thus, developing industries in these conditions, and worse, in the magnitude in which we are developing, this is totally complicated, difficult.” (Original quote: “De entrada, por la falta de servicios. Aquí no había luz eléctrica, agua, teléfonos celulares, internet y los caminos no eran buenos. Cuando digo aquí, digo en toda la región. Entonces, desarrollar industrias en esas condiciones y, peor, de la magnitud con la que estamos desarrollando, eso es totalmente complicado, difícil.”)	Few Advances / Problems
		<i>Lack of Experience</i>	Descriptions of the lack of capacities and experiences as a general challenge. In positive evaluations, generally as pre-statement to a description of how these challenges were overcome or as a justification for delays. In negative statements, a link is established to the persistent lacking administrative capacity and professional experiences.	“It could be a lack of experience or too much optimism that the people from the government said that we, the Bolivians, will do the first phase on our own. And that was a grave mistake (...)” (Original quote: “Puede ser la falta de experiencia o demasiado optimismo que los personajes del gobierno dijeron que para la primera etapa nosotros mismos lo vamos a hacer, los bolivianos. Y es un grave error (...)”)	Few Advances / Problems HR-Policy and Training
		<i>Deficient HR Policies</i>	Lack of experienced and trained human resources. Insufficient preparedness of human resources persists. Often, no connection to university system.	“We in the university thought, for example, that they would immediately start a project to improve the preparation of the human resources, that they would give out some scholarships, that they would buy experimental equipment and make pilot studies, but this was never done.” (Original quote: “Por ejemplo pensábamos nosotros en la universidad, que inmediatamente iba a haber algún proyecto de mejoramiento para la preparación de recursos humanos, se iba a dar algunas becas, se iba a comprar equipos para experimentar y hacer pruebas piloto, pero nunca ha llegado.”)	Few Advances / Problems HR-Policy and Training
		<i>Failures in Planning</i>	Government has not sufficiently planned the project and does not follow a successful, coherent governance strategy. Includes e.g. statements on the missing cost-benefit-calculations, statements that too much money is spent and that the project is oversized.	“The next year for me will be decisive because they will have to do something, they are spending too much money without a basis.” (Original quote: “El próximo año para mí va ser un año de definiciones porque van a tener que hacer algo, están gastando demasiada plata sin fundamento.”)	Few Advances / Problems

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	Distribution of Decision-Making Power	Bureaucratization	Statements that indicate that the project is highly bureaucratic and that this consequently slowed decision-making.	<p>“They are of the opinion that the project has taken a long time, not only because of difficulties of the scientific investigation, but also because of problems of bureaucratization, which are depending on COMIBOL. COMIBOL is an organization that no longer has the capacity to administer these mining politics and which took a long time to facilitate the financial conditions, the technical conditions to speed up the project.” (Original quote: “Ellos tienen la evaluación de que proyecto ha tardado mucho, no sólo por dificultades de investigación científica, sino por problemas de burocratización, que tiene de su dependencia de la COMIBOL. COMIBOL es una cooperación que no tiene ya capacidad de administrar esa política minera y que tardó mucho en facilitar las condiciones financieras, técnicas, para apurar el proyecto.”)</p>	Delays Lack of Autonomy
		Centralization	Statements that indicate that the project is highly centralized and in complete control of the central government. While some respondents see this as positive to fasten decision making, it is also perceived as nationalisms, over-regulation by the state and intrusion in regional matters. The latter became particularly visible with the conflict between GNRE and the Department of Potosí over the creation of the Bolivian Evaporite Company (EBRE) with headquarters in La Paz.	<p>“From the legal perspective, this government is oriented in nationalizing everything, including the brine resources, including the definition of all the salar borders. Thus, it is oriented in a complete nationalization of the resources, especially brine and geothermic resources.” (Original quote: “Desde la ley, está este gobierno orientado a que, a estatizarlo todo, inclusive los recursos de las salmueras, inclusive delimitar los salares todos. O sea está orientada en una estatización total de los recursos, especialmente evaporíticos y geotérmicos.”)</p>	Involvement of Subnational Governments
		Presidential Involvement	Statements that describe a direct involvement of the President in the project - both with positive and with negative connotations. This includes the idea that the project benefits from a direct and personal support of Exco Morales.	<p>“We are only now starting to enter this topic; logically everything was a shadow of the future, but only the determination, the vision and the political-economic support of a President like ours, who believes in his human resources, his professionals, who believes that the politics of industrialization of the natural resources are the correct way, is secure. Thus, this is the only thing that can guarantee any kind of industrialization.” (Original quote: “Nosotros recién nos estamos iniciando en el tema, lógicamente todo era sombrero en el futuro, pero solamente la tenacidad, la visión y el apoyo político-económico de un Presidente como el nuestro, que cree en sus recursos humanos, profesionales, que cree que la política de industrialización de los recursos naturales es la correcta, está seguro. Entonces, es lo único que puede garantizar cualquier industrialización.”)</p>	Agility and Adaptability
		GNRE Autonomy <i>Large Autonomy</i>	Degree of autonomy of the GNRE in the implementation of the project. Relates to a large autonomy of the GNRE within the administrative system supporting for some a fast, agile management of the project and for others mash centralized decisions-making.	<p>“Technically, Evaporíticos [the GNRE] has the autonomous power that the Mining Corporation of Bolivia has awarded to the Management Committee; all the power so that the project advances. Since, if we as COMIBOL would have to direct, we do not have the knowledge. For this reason, the Mining Corporation of Bolivia has awarded, through the Directory of COMIBOL, to GNRE General Manager Alberto Echazú a direct autonomy for the Management Committee for Evaporite Resources.” (Original quote: “Técnicamente, evaporíticos tiene el poder autónomo que le ha otorgado la Corporación Minera de Bolivia, a la Gerencia, todo el poder para que este proyecto avance. Porque si nosotros como COMIBOL, tendríamos que dirigir, no tenemos el conocimiento. Por esa razón, la Corporación Minera de Bolivia ha otorgado mediante el Directorio de COMIBOL, al Gerente General Alberto Echazú, una autonomía directa para la Gerencia Nacional de Evaporíticos.”)</p>	Agility and Adaptability Centralization

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		<i>Lack of Autonomy</i>	Also relates to problems in decision-making because of lacking autonomy of the GNRE as part of COMIBOL (not an independent mining company).	“Thus, this is an incident that will in retrospect, maybe, explain a series of problems that the project has had, given the lack of autonomy in the implementation of the project, because the organization of evaporites is a means that depends on an institution such as COMIBOL, which continues to be bureaucratic and cumbersome.” (Original quote: “Entonces, este es un incidente que posteriormente, tal vez, vaya a explicar una serie de problemas que ha tenido el proyecto, dada la falta de autonomía en la realización del proyecto, porque la organización de evaporíticos es una medida que depende de una institución como la COMIBOL, que sigue siendo burocrática y pesada.”)	Centralization Bureaucratization
	Stakeholder Participation	Stakeholder Perception	Includes statements of different actors about their relationship with the project and their general perception of lithium and potassium industrialization as well as general descriptions of project perceptions of certain stakeholders by non-local interview partners from the third sector, government, academia etc.		General Project Description
		<i>Community Indifference or Rejection</i>	Community perception of the project is indifferent (just another project) or communities reject the project (e.g. for its impacts).	“It [the community] does not perceive this as a company-society-relation because they have never seen the results; the only thing they have seen is that some resource enters and then that resource goes to the government and the government gives budgets to the regions and there the story ends.” (Original quote: “No la perciben como la relación entre empresa y sociedad porque nunca han visto los resultados, lo único que ha visto es que entra algún recurso y ese recurso entra al gobierno y el gobierno da los presupuestos a las regiones y se acabó el tema.”)	
		<i>Community Hope / Support</i>	Expressions of identification with and support of the project by the local communities and their local organizations.	“They identify with this project, meaning that they feel that it is their project.” (Original quote: “Están identificados con ese proyecto, es decir sienten que es su proyecto.”)	Social Control
		<i>Economic Hardship</i>	Descriptions of current economic hardship in the region of lithium production which supports a positive image of the project in the population.	“We need support; we are in a bad situation. With the wind, there is no quinoa. We do not know from what to live. Lithium could help us very much.” (Original quote: “Necesitamos apoyo. Estamos mal. Con el viento no hay quinoa. No sabemos de qué vivir. El litio nos podía ayudar en grande.”)	Grievances
		<i>Worker Identification and Pride</i>	Expressions of identification with, pride and support of the project by the workforce (administrative and technical) in the project.	“Also, I have felt that the workers offer their services at the plant with great pride of being part of this project.” (Original quote: “Luego también he sentido entre los trabajadores que están prestando sus servicios en la planta un orgullo de ser parte de este proyecto.”)	
		Social Control	Describes how local stakeholders and their social organizations exercise social control in the project.	“Thus, there is this situation that we will have all the time; the people of the area are in (side) the project. They have taken possession of the project, they will defend it in an energetic way, if it is necessary, but they will also exercise a social control function that makes the project work how it is supposed to work.” (Original quote: “Entonces, hay esa situación que se va a dar todo el tiempo. Están dentro del proyecto la gente de la zona. Se han apropiado el proyecto, lo van a defender de manera energética si es necesario, pero también van a ejercer un control social que haga que el proyecto funcione como debe funcionar.”)	

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		<i>Involvement of FRUTCAS</i>	Statements that the project was demanded and initiated by the communities of the region through their regional federation FRUTCAS and that FRUTCAS executes social control of the project for the communities. Also includes historic descriptions of the beginning of the project. Critical points of view challenge the role of FRUTCAS as a legitimate representation of the local communities and clarify that the current involvement of FRUTCAS is restricted.	“FRUTCAS is the Farmers’ Federation. What this federation has done is ask the President, who has given his authorization, and the plant was inaugurated and now this is in the making (:). In reality, the beginnings, the roots of this is on the Farmers’ Federation; that is undeniable.” (Original quote: “La FRUTCAS es la Federación de Campesinos. Esta Federación lo que ha hecho es solicitar al Presidente, él ha dado su autorización y se ha inaugurado la planta y ahora está en camino. (:). En realidad los inicios, las raíces de eso, son en la Federación de Campesinos, eso es innegable.”)	Experiences with LITHCO
		Involvement of Subnational Governments	General statements on the involvement of subnational governments (departmental, provincial) in the project.	“As authority, our wish is that this battle is substantiated and brings benefits to the whole region. For any kind of situation, we as municipality are predisposed to support, assist, facilitate, manage anything and also put anything at disposition.” (Original quote: “En función de autoridad, nuestro deseo es que esa lucha se vaya concretando, dando beneficio a toda la región. Para cualquier situación, nosotros como municipio, estamos predispuestos a apoyar, a coadyuvar, a viabilizar, a gestionar cualquier cosa y poner a disposición también de cualquier cosa.”)	Centralization
		Foreign Involvement	General statements on the involvement of foreign companies and perception of this involvement.	“Mostly Asian [nations] have talked to us: Japanese, Chinese, Koreans, especially to exploit. We have fought a lot until we understood why; the Asian patience has been the cause. You tell them ‘no’ and the next day they come back with a chocolate and ask, ‘and?’, and you say ‘no’ and two weeks later they come and ask you again with these two chocolates. That is the Asian patience and we have learned to negotiate.” (Original quote: “Más nos han hablado los asiáticos: japoneses, chinos, coreanos, especialmente para explotar. Nosotros hemos peleado muchísimo hasta que han sabido entender porque, la paciencia asiática había sido así. Les dices ‘no’ y al día siguiente te vuelven a decir con un chocolate, ‘¿y?’, les dices ‘no’ y a la semana siguiente te vienen a decir con estos dos chocolates. Eso ha sido la paciencia asiática. Hemos aprendido a negociar.”)	
		<i>Foreign Involvement Restricted</i>	Relates to the idea of sovereignty, expressed in the slogan “socios no patrones” (partners not bosses) but refers to the actual politics behind it. Descriptions of how foreign companies are restricted in their participation in the project.	“The foreign support is strong, but very controlled by the country. This means it is not a conditioned support like before, that the foreign support came and put up the conditions, now it is the other way around. As we pay for everything, it is not a loan, it is us who put up the conditions and this is good, it works well this way.” (Original quote: “Pero el apoyo extranjero es fuerte pero bien controlado por el país. O sea no es un apoyo como antes ocurría condicionado, el apoyo extranjero venía y condicionaba las cosas, ahora es al revés. Como nosotros pagamos todo, no es préstamo, no hay, nosotros ponemos las condiciones y está bien, está funcionando bien en este sentido.”)	Sovereignty
		Exclusion of Critics / Experts	Centralized government control impedes criticism of the project and critics are marginalized by state institutions. This includes analysts and critical institutions and is also described as open intimidation. Critics often relate to government authorities as advice-resistant.		
		<i>Marginalized Universities</i>	Critical universities are not part of the project: Example Universidad Autónoma de Potosí	“There was a discrepancy with the University of Potosí, meaning that the University of Potosí has rapidly ended up at the edge of the project.” (Original quote: “Había una discrepancia con la universidad de Potosí, de modo que la universidad de Potosí muy rápidamente ha quedado como al margen del proyecto.”)	

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		<i>Intimidation</i>	Describes that critics are intimidated by the government and / or supporters of the project, e.g. through legal processes against them.	“There is a lot of fear, therefore nobody [in the private sector] mingles with politics. There is a lot of legal blackmailing.” (Original quote: “Hay mucho miedo, por eso nadie [del sector privado] se mete en la política. Hay mucha chantaje legal.”)	
		<i>Internal and External Enemies</i>	Descriptive statements mostly of government officials or MAS-followers that internal and external enemies pose a threat to the project. It can be foreign companies, foreign governments or critical Bolivian analysts (particularly of the old establishment) that want to sabotage the project.	“Thus, it is the law that we have many internal and external enemies, especially those that manage the lithium technology which Bolivia in the future.” (Original quote: “Entonces es una ley de que tenemos muchos enemigos internos y externos, sobre todo aquellos que manejan la tecnología del litio que maneja Bolivia.”)	
	Information Politics		Describes both generally the information strategy implemented by the government and the perception of the information provided by the different stakeholders. Also includes statements of third actors on the perceived level of information on lithium and the lithium project in the population.		
		Government PR	Outlines generally the government’s (national and sub-national) communication strategy and the PR measures taken to inform the population.		
		Communities Informed	Statements that the communities are informed about the lithium project (generally positive connotation).	“In all of the communities we know about lithium.” (Original quote: “Todas las comunidades sabemos sobre el litio.”)	
		<i>Local Information Events</i>	Local information events / consultations have taken place.	“They have come to inform to complete [our knowledge and execute].” (Original quote: “Han venido a informar para complementar y ejecutar.”)	
		Incomplete Information	Statements that the population is not sufficiently informed about the lithium project (generally negative connotation).		
		<i>No Local Information Events</i>	Local information events / consultations have not taken place.	“They have not consulted anybody, at least not in Llica, maybe in Uyuni, Colcha ‘K’” (Original quote: “No se ha consultado a nadie, por lo menos no en Llica, tal vez en Uyuni, Colcha ‘K’.”)	
		<i>Incomplete Information</i>	Incomplete information is suggested e.g. on technical procedures and environmental impacts.	“The National Management Committee for Evaporite Resources has never responded to the suggestions I made. There is more, I have all the annual reports of the National Management Committee for Evaporite Resources, and the technical details are completely lacking.” (Original quote: “La Gerencia Nacional de Recursos Evaporíticos nunca ha respondido a los requerimientos que hice, es más, yo tengo todas las memorias de la Gerencia Nacional de Recursos Evaporíticos, donde los detalles técnicos escasean totalmente.”)	Scientific and Technical Doubts

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		<i>Create False Expectations</i>	The information provided by the government creates unrealistic expectations in the local population, particularly about the monetary benefits to expect.	“It is better that they tell them in time than to continue in the deceit of a country this poor, where there are so many expectations. The other problem is that the government has created in the imagination of the people, and not all of the people are this educated, including us, the professionals, a paradigm that Bolivia will enter into a new age of high technology with lithium and that it will control something that will replace petrol, something like this.” (Original quote: “Es mejor que se lo diga a tiempo a que se siga adelante con un engaño a un país tan pobre, donde hay tanta expectativa. El otro problema es que el gobierno ha ido creando en el imaginario de la gente, no toda la gente es tan educada, incluidos nosotros los profesionales, un paradigma que Bolivia va a entrar en una etapa de alta tecnología con el litio y que va a controlar algo que va a reemplazar al petróleo, algo así.”)	
		<i>Information Tilted</i>	Information provided is tilted towards one region or one specific actor group (such as government followers)	“They work more with the people in Colcha ‘K.’” (Original quote: “Más trabajan con los de Colcha ‘K.’”)	
		<i>Information Decreased</i>	Statements of disappointments particularly by local actors that information events have ended or have become less frequent in the last years.	“At the beginning of the project, in its execution, they have gone from community to community to provide information (...). Yet, in this last year, until this moment, they did not show.” (Original quote: “Las informaciones al inicio del proyecto, en su ejecución, ellos han ido comunidad por comunidad. (...) Entonces, hasta el momento, en este último año, ya no se ha visto.”)	
	Revenue Management	Distribution of Revenues	Statements that relate to the management of the revenues of the project including the distribution of taxes and rents as well as aspects of transparency and good conduct in financial matters. Statements that relate to the distribution of project revenues and discussions / conflicts that result from these distributive decisions.	“The Salar de Uyuni is a natural resource of the Plurinational State of Bolivia. According to the Constitution, it is a fiscal reserve of the state, of all the Bolivians. Thus, if we obtain utilities, we have to make a royalty law and the lithium resources and the profits have to benefit the region first. And that is a fight that will not be easy.” (Original quote: “El Salar de Uyuni es un recurso natural del Estado Plurinacional de Bolivia. Según la CPE, es una reserva fiscal del Estado, de todos los bolivianos. Por eso es que cuando tengamos utilidades, hay que hacer una ley de regalías y los recursos de litio y sus derivados tienen que beneficiar a la región en primer lugar. Y eso es una pelea que no va a ser muy fácil.”)	Rents Grievances
		Transparency and Corruption	Description of measures to ensure transparency in the lithium project. Allegations of acts of corruption in the lithium project (To be differentiated from general statements on corruption in Bolivia).		Corruption (General Mining Politics)
	Cost Management	Prevention and Mitigation	Statements that relate to the management of project externalities, particularly the management of environmental costs, through politics of prevention and mitigation (How does the government deal with insurances?). Descriptive statements of measures of prevention and mitigation taken in the project.		

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BENEFITS (demanded - expected)		<i>Insufficient Analysis of Impacts</i>	Especially environmental but also social and cultural impacts have not been sufficiently investigated by the responsible government institutions.	“They had not even the slightest political will to identify impacts. Experimental pools, that is one thing, you have two, three pools. Obviously not much will happen. But a production of hundreds of thousands of tons, that will be a grave problem.” (Original quote: “Ellos tenían ni la más puta voluntad política de identificar impactos. Porque una cosa es piscinas de experimentación, de dos, tres piscinas que hagas. Obviamente que no va a pasar gran cosa. Pero ya que es una producción de cientos de miles de toneladas, entonces ahí hay un problema grave.”)	
		Conflict Management	Statements on the strategies of conflict management in the project which e.g. result from cost or benefit management.	What does the population generally ask for? Work, that a majority of the workers comes from the population. Secondly, that they make some kind of infrastructural projects, that they solve some issues of the region, electrification. They enter these kinds of agreements [with the population]. And this way they begin to solve problems.” (Original quote: “¿Qué cosa generalmente pide la población? Trabajo, que los principales trabajadores sean de la población. Segundo, que hagan algunas obras de infraestructura, soluciones algunos temas de la zona, electrificación. Entran en ese tipo de convenios pues. Y de esa manera empiezan a solucionar.”)	
			Statements on the benefit side of the project. These include benefit demands, the identification of possible and existing benefits as well as the qualification of benefit expectations.		
	Education		Benefits of the project for education are identified.	“The project will support the local technical capacitation.” (Original quote: “El proyecto va a impulsar la capacitation técnica local.”)	Knowledge Generation
	Infrastructure		Benefits of the project for the regional infrastructure are identified.	“While the project advances, they benefit from roads, water, electric energy, telecommunications and economic activities connected to the necessary constructions for the project.” (Original quote: “A medida que el proyecto avanza, se han ido beneficiando con carreteras, agua, energía eléctrica, telecomunicaciones y una actividad económica alrededor de los requerimientos constructivos del proyecto.”)	
	Employment		Benefits of the project for employment are identified.	“Then, also, the project has generated a lot of employment in the region, that has also made it more desirable in the region.” (Original quote: “Luego también el proyecto ha generado alto empleo en la zona, lo que lo hace pues muy apetecible dentro de la región.”)	
	Tourism		The project supports tourism in the region.	“So, I think that our new company which is the Evaporite Management Board in Potosí, will surely also bring a lot of tourists to visit the magnitude of the business that is installed in the Salar de Uyuni. (Original quote: “Entonces yo creo que con nuestra nueva empresa que es la Gerencia Evaporíticas en Potosí, segura que también vamos a tener muchísimo turismo para poder visitar la magnitud de la empresa que se está instalando en el Salar de Uyuni.”)	

CODE SYSTEM					
Category	Subcategory	Codes Subcodes	Definition	Anchor Examples	Linked Codes
EXTERNALITIES (expected - observed)	Resources - Rents		The project generates economic resources or economic development.	<p>"All income that comes from the mining sector pays royalties, which is a compensation for the territory where raw material is extracted, thus the Department of Potosí is the department that receives most royalties, and it will receive much more now. And the area that also receives royalties will be very rich. Hence, I can be believed that the local development in the area where the plant is installed will be impressive." (Original quote: "Todos los ingresos que vienen del sector minero pagan regalía que es una compensación al territorio dónde se está extrayendo la materia prima, entonces el Departamento de Potosí es el departamento que más regalía recibe, va recibir mucho más ahora. Y la zona que también recibe regalías va a ser muy rica. Entonces se puede pensar que el desarrollo local de la zona donde está instalado la planta va ser impresionante.")</p>	
	Other Benefits			"The village has flourished. Instead of migrating, the people will come here." (Original quote: "El pueblo ha florecido. En vez de migrar, gente ha venido aquí.")	
	Limited Benefits		The project will not bring important benefits or no benefits at all.		Grievances
	Benefits will take time		While the project will have benefits, these will not arrive soon. The project still needs time to develop.	"The lithium royalties should reach this province but nothing reaches Llica." (Original quote: "Regalías del litio deberían venir a esta provincia, pero nada llega aquí a Llica.")	
	Benefits go Elsewhere		The benefits do not reach the particular community of the interview partner but go elsewhere (which could be another municipality, the provincial government or the central government). Often expressed	"We are in a great investment phase. I am sure that we will not see much of this, because surely the region, the benefits will arrive here in some 10, 15 years." (Original quote: "Estamos en una etapa de una gran inversión. Estoy seguro de que esto no vamos a ver mucho nosotros, porque seguramente la región, los beneficios van a venir de aquí a unos 10, 15 años.")	
	Only Minor Externalities		Respondents identify negative impacts of the project in the region of production. This category also includes statements that qualify the possibility of externalities or the gravity of the externalities identified.	Original quote: "All the elements that we use are totally friendly with the environment; we do not use acids that normally can damage or chemicals that could cause damage." (Original quote: "Todos los elementos que utilizamos son totalmente amigables con el ambiente; no utilizamos ácidos que normalmente puedan dañar o químicos que podrían dañar.")	Grievances
	No Impacts (yet)		There have not been impacts of lithium industrialization (yet) or there are no impacts expected.	We have not yet looked at the negatives [negative impacts], not legally. But, we are all supporting. Maybe there are for other communities." (Original quote: "Como negativos aún no lo hemos visto todavía, no legalmente. Eso, pero, que nosotros siempre estamos apoyando.")	
	Re-Use Waste		The code expresses the idea that externalities will be minor because the waste produced can be re-used and does not contaminate. Thereby, two ideas are expressed: (1) The project could (theoretically) be less impacting, if the waste was re-used. Otherwise waste will impact. (2) The waste reuse is already in planning / in the making, so that there is no need to worry.	"Yes, there is intermediate waste, but it is easy to treat it and that is what they are trying. They are looking at patented treatment processes; in some cases, this means reinjection into the Salar in other cases, producing products of added value from this intermediate waste." (Original quote: "Sí hay desechos intermedios, pero es sencillo tratarlos y es lo que se está intentando, se está viendo procesos patentados de tratamiento, en algunos casos, es reinyección al Salar y en otros, es producir productos de valor agregado a partir esos desechos intermedios.")	Contamination

CODE SYSTEM						
Category	Subcategory	Codes Subcodes	Definition	Anchor Examples	Linked Codes	
HISTORIC EXPERIENCE / COLLECTIVE EXPERIENCE	Socio-Economic Impacts		Negative impacts of the project on (traditional) economic activities are identified.	“But we are also a production zone of organic quinoa. We cannot allow that they exploit all of our salt lakes. (...) Big companies will exploit potassium and lithium, and they will take [all] and the royalty will be minimal and there is the great risk that this destroys the environment. (...) With the exploitation of the salt lakes, we would kill all organic quinoa production.” (Original quote: “Pero somos también zona productora de quinoa orgánica. No podemos permitir que exploten por completo nuestros salares. (...) La explotación de potasio y litio van a ser grandes empresas y se van a llevar [todo] y la regalía va a ser mínima y hay el gran riesgo que destruye el medio ambiente. (...) Con la explotación de las salares, mataríamos toda esa producción orgánica.”)		
		Environmental Impacts (Chemicals, Waste)	Negative environmental impacts of the project through contaminations are identified.	“But in a certain moment to obtain pure lithium carbonate you use chemical reactors and since the lithium amount in the global volume of the brine is very small, the residual is very large, and this residual, well, contaminates, including the landscape.” (Original quote: “Pero a partir de cierto momento para obtener el carbonato de litio puro se utiliza reactivos químicos y como el volumen del litio dentro del volumen global de la salmuera es bien pequeño, entonces el residuo es muy grande, y ese residuo contamina pues, hasta el paisaje.”)	Landscape	
	Other Impacts	Water Use	Negative environmental impacts of the project through high water use are identified.	“We have experienced very dry years, also because of the evaporite project. There is the need for a study.” (Original quote: “Hemos pasado años muy secos y por el proyecto de evaporíticos. Hay que hacer un estudio.”)		
		Landscape	Negative environmental impacts of the project on the landscape (through the use of a large surface as production area) are identified.	“This means that you need an really big area to reach the same volume, an area in the same Salar. This means that in the passing of the years, this could even change the panorama of the Salar de Uyuni, which is a wonder of humanity.” (Original quote: Eso significa que necesita una superficie para tener el mismo volumen sumamente grande, una superficie que están haciendo en el mismo Salar. O sea que con el correr de los años, hasta ha de cambiar el panorama del Salar de Uyuni, que es maravilla de la humanidad.”)		
		Other Environmental Impacts	Other environmental impacts of the project are described.	“Already there is no rain, no water. (...) It could be that the gas disperses the rain in a different direction.” (Original quote: “Ya no hay lluvia, no hay agua. (...). Puede ser que el gas dispersa la lluvia a otro lado.”)		
	Historical Significance of Salar de Uyuni		Other negative impacts of the project.			
			Refers to important historical images and stories that were used in different interviews relating for example to the historic and cultural significance of the Salar de Uyuni and the resulting territorial claims. Also includes expressions of feelings of being marginalized and underdeveloped relating to the long mining history of the country. Statements that outline the historic and cultural significance of the Salar de Uyuni to the respondents.			Lithium / MAS Politics Different Grievances

CODE SYSTEM					
Category	Subcategory	Codes Subcodes	Definition	Anchor Examples	Linked Codes
		Territorial Claims	General statements on territorial claims and conflicts in the Salar area as historic experience. Only implicit connection to rent distribution in the lithium project	<p>“[The locals] expect that not everything goes to the central level and the other provinces benefit more. In the case of Uyuni, they do not have Salar, the Province of Antonio Quijarro has not even a meter of Salar, but at this moment, they are the ones who benefit most. We, whose resources are in the province, receive nothing.”</p> <p>(Original quote: “[Los comunarios] están esperando que no se vaya todo a nivel central u otras provincias se beneficien más. En el caso de Uyuni, no tiene salar, no tiene ni un metro de salar la provincia Antonio Quijarro, pero en este momento los más beneficiados son ellos. Nosotros, cuyos recursos están en la provincia, no estamos recibiendo nada.”)</p>	Rent Distribution
	Forgotten - Marginalized		Respondents express feelings that they have historically been forgotten and marginalized. This can refer to Bolivia as a nation or the region of lithium extraction which was marginalized by the Bolivian central government and from a global perspective. This subcategory often links to expectations and demands that the lithium program should overcome this historic isolation.	<p>“In Llica, we are really very forgotten.” (Original quote: “En Llica somos sumamente muy olvidados.”)</p>	
	Mining History		Statements that refer to the long mining history of Bolivia and link the lithium program to this history.		
		Bolivia: Mining Country	Statements that Bolivia is a mining society and that mining is a central part of Bolivian identity.	<p>“I am very cynical about this, because this land, like I told you, always is a mining country, thus, it is accustomed to adapt to the commodities or to the damages that exploitation causes, as long as it is economically beneficial (...). And you cannot take mining away from villages that do not have anything.” (Original quote: “Yo soy bien cínico respecto a eso porque este país, como te digo, siempre es un país minero, entonces, está acostumbrado a adaptarse a las incomodidades o a los daños que causa la explotación, tanto sea beneficiosa económicamente. (...). Y no les puedes quitar la minería a unos pueblos que no tienen nada.”)</p>	
		Environment secondary	Respondents express that in a mining society such as Bolivia environmental problems are of little or no importance for the local population, often linking back to the environmental politics in the lithium program.	<p>“Also, it is necessary to consider that this area of Potosí has always been a mining area, and therefore, the vision of a preservation of the environment is a far-away vision, which does not exist in reality. Preserving the environment for the mine worker does not exist.” (Original quote: “Después también hay que ver que siempre esta zona de Potosí ha sido una zona minera y, por lo tanto, la visión de preservación del medio ambiente es una visión lejana, que no existe en realidad. Preservar al medio ambiente para el minero eso no existe.”)</p>	Externalities
		Historically Underdeveloped	Describes Bolivia as historically underdeveloped and links to the lithium project as being a way to overcome this underdevelopment.	<p>“What happens is that one only recently understands how a country is underdeveloped, is backwards, is dependent. (...) One begins to realize one thing: it is easier to place an industry in Europe than to put down one brick in this region.”</p> <p>(Original quote: “Lo que sucedió es que uno recién se da cuenta como un país es subdesarrollado, es atrasado y es dependiente. (...) Uno llega a comprender lo siguiente; es más fácil colocar una industria en Europa que colocar un ladrillo en esta región.”)</p>	

CODE SYSTEM					
Category	Subcategory	Codes Subcodes	Definition	Anchor Examples	Linked Codes
		<i>History of Extractivism</i>	Statements that refer to the Bolivian history of extractivism. Extractivism is understood as resources being exploited as primary goods without further value-adding. These resources are destined for exportation. The overarching category includes general statements that refer to historic experiences with extractivism and neoliberalism. Classical examples: Cerro Rico de Potosí, neoliberal investment politics of the 1980s.	“Our entire educational infrastructure, including the universities, is accommodated in this productive system of our natural resources. Everything we prepare the young ones for in the schools, in the universities, is sufficient for extractivism. We do not advance more, because we do not transform what we obtain. Thus, there is not more knowledge, there is no motivation to obtain more knowledge, because what we do is (considered) sufficient and this knowledge we have is also sufficient.” (Original quote: “Toda nuestra estructura educativa, incluido la universitaria, está acomodada a este sistema productivo de nuestros recursos naturales. Todo lo que preparamos a los chicos en los colegios, en las universidades es suficiente para el extractivismo. No avanzamos más porque no transformamos lo que obtenemos; entonces, no hay más conocimiento, no hay motivación para más conocimiento porque lo que hacemos es suficiente y los conocimientos que tenemos es suficiente también.”)	Lithium / MAS Politics Show Continuities
		<i>Experience with Transnationals</i>	Historic discourse of neoliberal politics in Bolivia and reference to times when transnational companies dominated the country's mining politics.	“What would have happened? LITHCO would have become the owner of the Salar, or would already have emptied it, it would have taken it all, because that is what the contract said, as reserves to North Carolina (...)” (Original quote: “¿Qué iba a pasar? Si la LITHCO se hubiera hecho dueño del Salar o ya se le hubiera vaciado, se le hubiera llevado, porque eso decía el contrato, cómo reservas a Carolina del Norte (...)”)	
		<i>LITHCO-Experience conditions. MAS-Government</i>	Refers to statement that the experience with LITHCO and the public protest have condition the options the MAS-government had for lithium industrialization. Forced to a national approach.	“This practically marked the politics and the strategy any future government should use. The Morales government was completely constrained by this decision of the people of Potosí.” (Original quote: “Entonces eso marcó prácticamente la política y la estrategia que debía utilizar cualquier gobierno posterior. El gobierno de Morales estaba condicionado completamente por esta decisión del pueblo de Potosí.”)	
	Other Mining Projects		Statements that relate to other mining projects and compare the lithium project to general developments in mining. This category particularly links to problems with nationalization under the current government and relates in this contexts to the national mining companies such as Huanuni, Colquiri, Coro Coro or the historic failure, the smelter Karachipampa. Also, comparison of the lithium project to the private mining project San Cristóbal (in the close by ^{area}).		Mining Politics
		San Cristóbal	Reference to the private San Cristóbal mine close to the Salar de Uyuni. It is the largest mine in Bolivia and has been criticized for its environmental damages.	“When talking about industrial water, the San Cristóbal mine that uses 500 liters of water per second has to be taken as a reference. If it uses [water] this way, it is a great reference for what other companies could use. Logically the use [for lithium and potassium industrialization] is much lower, approximately below 20 % of what they use.” (Original quote: “Cuando uno habla de agua industrial, tiene que tomarse como referencia la minera San Cristóbal que utiliza 500 litros de agua por segundo. Si utiliza así, es una gran referencia de lo que otras empresas podrían usar. Lógicamente el uso es mucho más bajo [para la industrialización de litio y potasio], aproximadamente menos del 20 % de lo que ellos usan.”)	
	Failed Nationalization		Includes statements that relate the lithium project of COMIBOL to problems and failures of the nationalized mining industry such as inefficient and expensive structures, social conflicts between miners and over-employment.		

CODE SYSTEM					
Category	Subcategory	Codes Subcodes	Definition	Anchor Examples	Linked Codes
MINING POLITICS		Huanuni	Reference to the tin mines and Huanuni and the conflicts around the nationalized mines.	“The primary idea of this government when it took over was that again the state manages the entire mining sector. But it has realized that the state is a bad administrator. I am personally convinced that not a single additional mining operation should be nationalized; that is because of the mining companies of Colquiri and Huanuni.” (Original quote: La idea primaria de este gobierno es cuanto se hizo cargo es que nuevamente el estado maneje toda la minería. Pero se ha dado cuenta que el estado es mal administrador. Yo personalmente estoy seguro que no ha de nacionalizar ni una operación minera más, eso tiene su razón de ser por la empresa minera Colquiri, Huanuni.”)	
		Karachipampa	Reference to the smelter Karachipampa; mostly negative, comparing the lithium project to the white elephant Karachipampa.	“I fear that there will be various Karachipampas, that history repeats itself.” (Original quote: “Y tengo el temor de que hayan varios Karachipampas que se están formando, que se repite la historia.”)	
			In the interviews questions were also asked on the perceptions of general mining politics under Evo Morales. These statements are related to problems identified for lithium but focus on the general mining politics not lithium governance.		
			Assessments of the mining politics of the government of Evo Morales that support the general idea that investments in mining in the country are not attractive at the moment for different reasons.		
			Repeated idea in different interviews that Bolivia under the government of Evo Morales does not have any clear political agenda in mining.	“I do not perceive that any mining politics exist; the only thing that they do is a spontaneous extractivist exploitation.” (Original quote: “Yo percibo que no existen políticas mineras en el país; lo único que se hace es una explotación extractivista espontánea.”)	Lithium / MAS Politics Show Continuities
			Government does not have the capacity to grasp the situation in the mining sector and is consequently not able to govern well.	“The government will not change this system of royalties and taxes. I do not understand; there are not experts to talk to, they do not know how to calculate, they do not understand business and believe that the prices will rise. With falling prices in the last six months they have started to listen to me, but they do not understand that they have to be competitive.” (Original quote: “El gobierno no va a cambiar este sistema de regalías e impuestos. No entiendo; no hay expertos con que hablar, no saben calcular, no entienden de business y creen que precios van subir. Con los precios cayendo, en los últimos seis meses me han empezado a escuchar, pero no entienden que hay que ser competitivo.”)	Lithium: Lacking Capacity
			Resources will end because of a lack of investment and exploration.	“Today, at present, we see that the future resources, the resources that we had, are coming to an end. It was not invested in prospective projects, in exploration to find new resources.”	
				(Original quote: “Ahora en el presente vemos que los futuros, los yacimientos que tenemos se están yendo agotando. No se ha invertido más en proyectos de prospección, exploración para contar con nuevos yacimientos.”)	
			There is no judicial security to make mining investments.	“Whatever you do, they can take it away from you; they can annul the contract, because it’s politics. Thus, the investment you make will be lost. Nobody has any judicial security to make mining investments.”	
				(Original quote: “Lo que vas a hacer te lo pueden quitar o rescindir el contrato cuando quieran, porque es política, y entonces la inversión que vas a hacer va ser perdida. Nadie tiene la seguridad jurídica de hacer inversiones en la minería.”)	

CODE SYSTEM					
Category	Subcategory	Codes Subcodes	Definition	Anchor Examples	Linked Codes
		Corruption	Corruption in mining in general, not specific to the lithium project.	They have not advanced at all. Already the tendering of the metallurgical plants has failed, there were even cases of corruption, a series of irregularities in the central mining topic." (Original quote: "No se ha avanzado nada absolutamente, ya ha fracasado la licitación de plantas metalúrgicas, había incluso casos de fraude, una serie de irregularidades en el tema central de la minería.")	Lithium: Transparency / Corruption
		Power of Cooperatives	Cooperatives has significant political and socio-economic power and undermine public mining politics.	"Another thing is that they have allowed the cooperative sector to grow, it is said that up to 150,000 people could be connected to the cooperative sector. Thus, since it is a numerous sector and since it also has a lot of power, it depends on nobody, they can mobilize. This is really the only sector that could bring down the government; they have done that already with Gonzalo Sánchez de Lozada, so they [the government] are afraid and favor the cooperatives in everything." (Original quote: "Otra cosa, que ha permitido el crecimiento del sector cooperativista, se dicen que pueden ser 150,000 los que están relacionados con las cooperativas. Entonces como es un sector numeroso y además tiene fuerza, no depende de nadie, disponen de sus propias movilizaciones, realmente el único sector que podría voltear un gobierno, ya lo hizo con el Gonzalo Sánchez de Lozada, le tienen miedo y le fomentan en todo a las cooperativas.")	
		High Taxes and Dues	Government take (taxes, rents, labor costs) are too high and impede a competitive mining sector.	"As they raised the taxes and since there is a complete legal insecurity, there is nobody, not a single investment]. That is painful, we will witness a tremendous mining crisis." (Original quote: "Como aumentó los impuestos y hay una inseguridad jurídica total, no viene nadie, no hay una sola [inversión]. Eso es lo doloroso, vamos a asistir a una crisis tremenda de la minería.")	
		Lack of Entrepreneurial Freedom	The nationalization and public mining strategy restricts the entrepreneurial freedom and results in bad governance in Bolivian mining.	"The mining politics of former governments were oriented in privatization. There was more liberty to access mining exploitation for private companies, there was more liberty. Now, in contrary, everything is oriented in state management." (Original quote: "La minería de gobiernos anteriores estaba orientada en la privatización. Había más libertad para acceder como privados a la explotación minera, había más libertad. En cambio ahora está orientada en que el estado maneja.")	Centralization
	Mining in Bolivia is Dead		This subcategory expresses the idea that there is hardly any serious mining industry left in Bolivia. Most mining is small-scale, with no large companies and no investment, endangering the whole sector. Idea: Bolivia is no mining country anymore.	"Thus, it is possible that everything comes to an end and that there is bankruptcy of companies and an abandonment of the mining sector (...) of cooperatives. The mining sector is collapsing. There is no perspective that the mining industry repeats a development like ten years ago." (Original quote: "Entonces es posible que todo queda parado y que hay quiebra de empresas y abandono de un sector minero (...) de cooperativas. La minería está colapsando. Eso. No hay perspectivas de que la minería hace un desarrollo minero que hace diez años.")	General Market Developments Bolivia as a mining country
	New Mining Law		Statements in relation to the new mining law of 2014 (general informative category)		
	General Market Development		General market development in the mining and the lithium industry, particularly on decreasing prices.		

CODE SYSTEM					
Category	Subcategory	Codes <i>Subcodes</i>	Definition	Anchor Examples	Linked Codes
GRIEVANCE INDICATIONS	Statements on emotionally felt grievances and conflicts in the lithium program and its governance. In the assessment of grievances for the analysis part of this thesis, I differentiated interest-related statements from identity-related statements e.g. (1) Emotional statements link to interests in the project (e.g. benefits) and how they are distributed as well as fears connected to the initiative. (2) Statements about lithium are linked to collective experiences, beliefs, historic feelings of injustice and local realities. (3) Direct reference is made to tensions / conflicts. Statement might also these different dimensions. In a first round, all personal expressions of dissatisfaction with project governance were marked and later all codes were evaluated along the grievance categories specified in Chapter 2. Consequently, codes might relate to a governance coding category and a grievance coding category simultaneously.			(1) "We need support; we are in a bad situation. With the wind, there is no quinoa. We do not know from what to live. Lithium could help us very much." (Original quote: "Necesitamos apoyo. Estamos mal. Con el viento no hay quinoa. No sabemos de qué vivir. El litio nos podía ayudar en grande.") (2) "We expect this. It is bad that they always take everything to the central government (...). For being a border province, we should be supported by the government, but the province is abandoned, there is nothing favorable even though we are the guardians of the border. This border province must be protected, but we are forgotten." (Original quote: "Estamos a la expectativa, malo que siempre lo llevan al gobierno central (...). Por ser provincia frontera, deberíamos ser apoyados por el gobierno, pero la provincia está abandonada, no hay nada a favor, aunque somos las guardias de la frontera, tiene que ser protegida esa provincia fronteriza, pero somos olvidados.") (3) "There is tension with Nor Lipez and Antonio Quijarro. There is a tension about the benefits, because we want to take part in this." (Original quote: "Hay una tensión con Nor Lipez y Antonio Quijarro. Hay tensión sobre los beneficios porque queremos tomar un parte.")	Collective Experiences and Beliefs

1

INTERVIEW #16

2

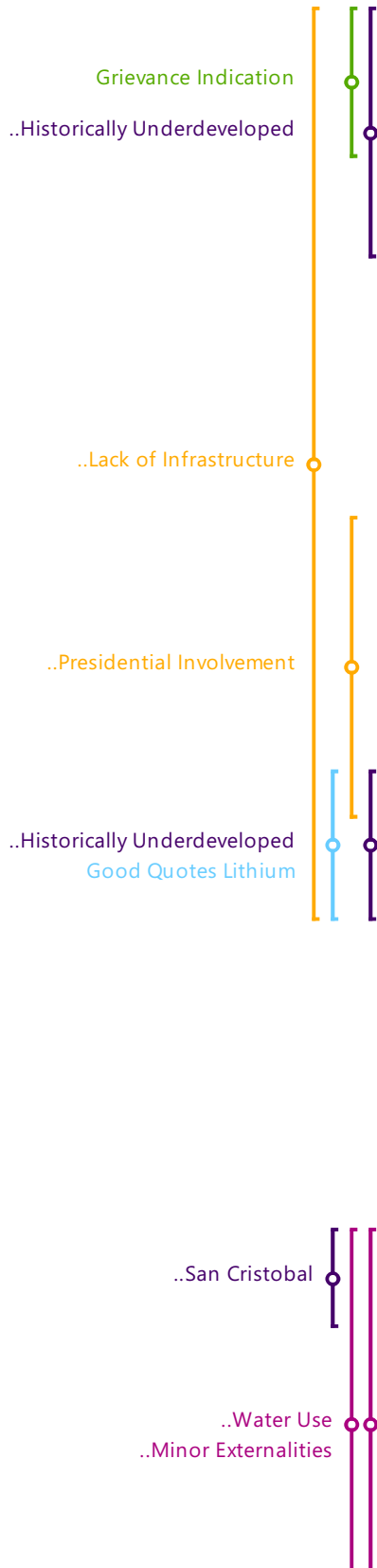
After the inauguration, when they agreed on a budget in 2008, when the activities started with a budget of six million dollars. What happens is that one only recently understands how a country is underdeveloped, is backwards, is dependent. How does one realize this? For a start, because of a lack of services. There was no electric light, no water, no mobile phone [signal] here, no internet, the roads were not good. When I say here, I mean in the entire region. Thus, developing industries in these conditions, and worse, in the magnitude in which we are developing, this is totally complicated, difficult. Many times, if you do not have the political support, the economic support, this vision of development, of the industrialization of the natural resources, that a president like President Evo Morales has, thus, there is no future for these projects which will be initiated. You begin to realize one thing; it is easier to place an industry in Europe than to put down one brick in this region.

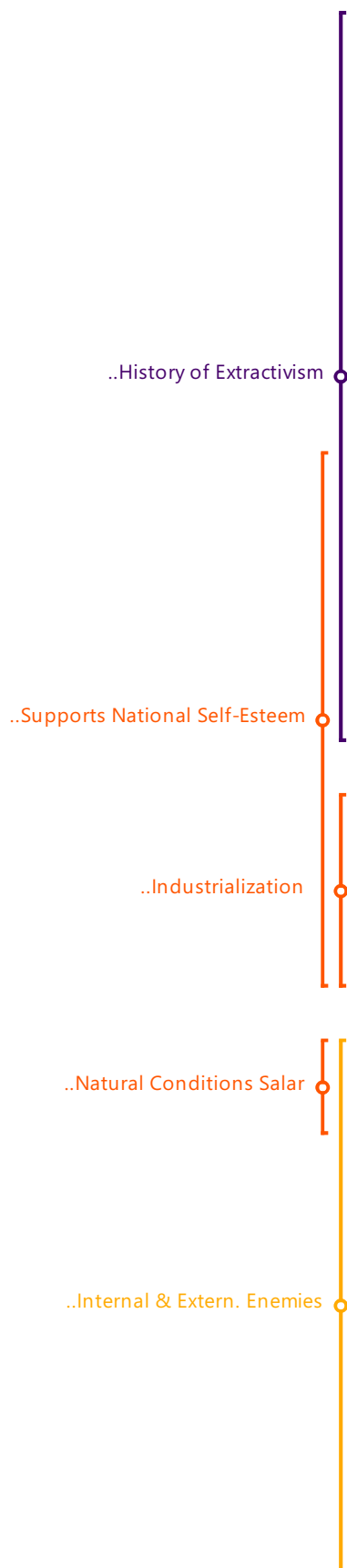
3

The infeasibility of projects is a result of this. Industrial energy is necessary, mid-tension energy at least and high-power energy, starting from ten, twenty, thirty megawatts.

4

When talking about industrial water, the San Cristóbal mine that uses 500 liters of water per second has to be taken as a reference. If it uses [water] this way, it is a great reference for what other companies could use. Logically the use [for lithium and potassium industrialization] is **much**





lower, approximately below 20 % of what they use.

5 It is worse when you work with the vision of a country that has not industrialized anything, that all of its life has lived on the basis of the extraction of its primary resources and giving these primary resources to others, so that they create added value and based on this added value they return them again to Bolivia, with three or four times the price. Thus, there is no viability in the country.

6 Why? Because this country does not have self-esteem. Bolivia never had self-esteem. It cannot even be said that it found its self-esteem again, it never had any because it never industrialized anything. For different reasons, all the projects, the **few** projects, have ended half-way.

7 The best experience, apart for the export of great quantities of natural gas, was justly this natural gas branch, the sale, that only now is industrializing with the lithium separation plants.

8 The topic is that for us it was more difficult, because the brines that we had were so complex that internal and external investigators, from abroad and from Bolivia, those that like to be called investigators, in reality, even before the start of the project, they have already buried the project. They already said that the project was not viable because the brines were very complex, because they had a lot of sulfate, of magnesium, of sodium and therefore neither lithium carbonate nor potassium chloride could be industrialized for years to come.

..Presidential Involvement
Good Quotes Lithium

9 Before this panorama, to this adds that we nearly had no investigations, not even in the universities.

We are only now starting to enter this topic; logically everything is a shadow of the future, but only the determination, the vision and the political-economic support of a president like ours, who believes in his human resources, his professionals, who believes that the politics of industrialization of the natural resources are the correct way, only this is secure. Thus, this is the only thing that can guarantee any kind of industrialization.

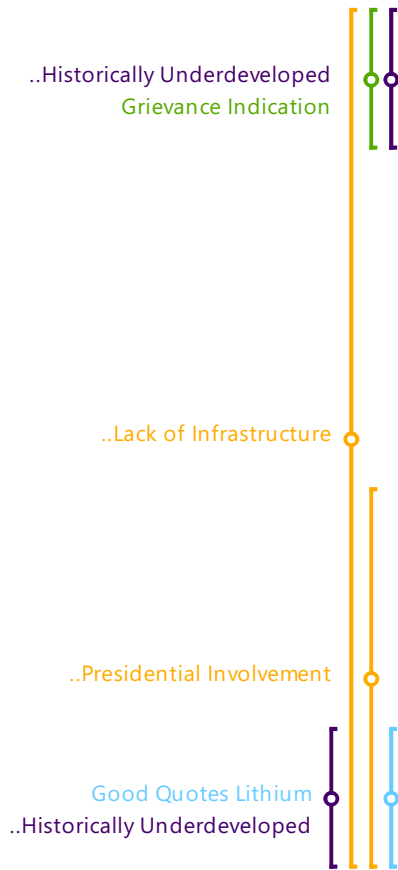
..Economic Hardship
Grievance Indication

10 Since 2008 until this day with have worked with the communities. Particularly, we work with a community in Rio Grande, whose situation was not good at all, since the price for their primary commodity, ulexite, which serves to make boric acid, has dropped. Thus, these prices did not provide a good perspective for the community.

..Employment
Grievance Indication

11 In this moment, it should be one of the communities that most profits in the region as nearly all of the community, which should be around 100 families, has work here [at the lithium plant]. The community which was wasting away now has the largest potentials in the region. Logically, it is not only this community. In the surroundings, there are many communities which participate in the project as well as cities like Uyuni.

ENTREVISTA #16



- 1
- 2 Después de la inauguración, donde dio un presupuesto en el 2008, cuando se inició las actividades con el presupuesto cerca de seis millones de dólares. Lo que sucedió es que, uno recién se da cuenta como un país es subdesarrollado, es atrasado y es dependiente. ¿Cómo se da cuenta uno? De entrada, por la falta de servicios. Aquí no había luz eléctrica, agua, teléfonos celulares, internet y los caminos no eran buenos. Cuando digo aquí, digo en toda la región. Entonces desarrollar industrias en esas condiciones, y peor de la magnitud con la que estamos desarrollando, eso es totalmente complicado, difícil. Muchas veces si no tiene el apoyo político, el apoyo económico, esa visión de desarrollo, de industrialización de los recursos naturales, que tiene un Presidente como el Presidente Evo Morales, entonces no tienen futuro esos proyectos que se van a iniciar. Uno llega a comprender lo siguiente; es más fácil colocar una industria en Europa que colocar un ladrillo en esta región.

- 3 La inviabilidad de los proyectos se realiza por eso porque primero, se necesita energía industrial (energía en media tensión mínimamente y energía con grandes potencias, a partir de 10, 20,30 Megavatios).

- 4 Cuando una habla de agua industrial, tiene que tomarse como referencia la minera San Cristóbal que utiliza 500 litros de agua por segundo. Si utiliza así, es una gran referencia de lo que otras empresas podrían usar. Lógicamente el uso es MUCHO más bajo, aproximadamente menos del 20% de lo que ellos usan.

- 5 Cuando se trabaja, peor, en una visión de un país que no ha industrializado nada, que toda su vida ha



vivido en base a la extracción de sus materias primas y entregar las materias primas a otros, para que otros le den valor agregado y en base al valor agregado nos regrese otra vez a Bolivia con triple o cuádruple de precio.

6 Así no hay viabilidad del país. ¿Por qué? Porque ese país no tiene autoestima. Bolivia no tuvo autoestima. Ni siquiera para decir se reencontró, nunca tuvo, porque nunca ha industrializado nada.

Todos los proyectos se quedaron, por diferentes razones, los **pocos** proyectos en medio camino.

7 La mejor experiencia, fuera de que salió grandes cantidades de hidrocarburos, fue justamente la rama del gas natural, la venta esa que recién se está industrializando con las plantas separadoras de Litio.

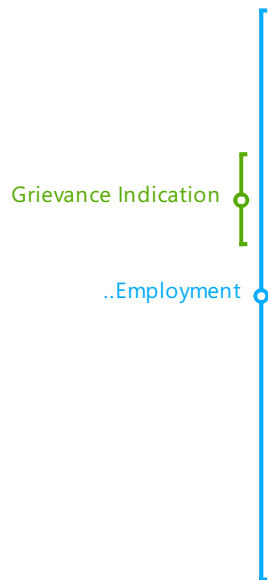
8 El tema es de que para nosotros es lo más complicado porque las salmueras que teníamos eran tan complejas que los investigadores externos e internos, extranjeros y de Bolivia, aquellos que se hacen llamar investigadores, en realidad antes del inicio del proyecto, ya sepultaban el proyecto. Ya decían que esto era inviable porque las salmueras eran muy complejas (tienen mucho sulfato, magnesio, sodio) y por lo tanto, no se podía industrializar el Carbonato de Litio ni el Cloruro de Potasio en unos años más.

9 Frente a ese panorama, acompañado de que nuestras investigaciones eran casi nulas, tanto de la universidad. Nosotros recién nos estamos iniciando en el tema, lógicamente todo era sombrío en el futuro, pero solamente la tenacidad, la visión y el apoyo político-económico de un Presidente como el nuestro, que cree en sus recursos humanos, profesionales, que cree que la política de industrialización de los recursos naturales es la

correcta, está seguro. Entonces, es lo único que puede garantizar cualquier industrialización.



10 Desde el 2008 hasta esta fecha se ha hecho trabajos con comunidades, particularmente trabajamos con una comunidad de Rio Grande, cuya situación no estaba buena porque los precios de sus materias primas; de Ulexita, que sirve para hacer ácido bórico, rebajaron. Entonces esos precios no daban buena perspectiva a la comunidad.



11 En este momento debe ser una de las comunidades más beneficiadas de la región porque casi toda la comunidad, que deben ser más de 100 familias, tienen trabajo aquí. La comunidad que estaba languideciendo, es una de las más potentadas de la región. Lógicamente no solo es eso, alrededor de todo hay muchas comunidades que participan en el proyecto y también ciudades como Uyuni. staba languideciendo, es una de las más potentadas de la región. Lógicamente no solo es eso, alrededor de todo hay muchas comunidades que participan en el proyecto y también ciudades como Uyuni.

VI. Royalty Calculations for Major Argentinean Lithium Projects

Company (Project)	Province	Exp. Lithium Carbonate Production	Sales Value in million USD	Est. Mining Value in million USD (Sales value minus 30 % estimated production costs)	Royalties in million USD
Orocobre (Ollaroz)	Jujuy	17,500	122,5	85.75	2.573
ADY (Rincón)	Salta	30,000	210	147	4.41
FMC (Hombre Muerto)	Catamarca	23,000	161	112.7	3.381
Minera Exar (Cauchari)	Jujuy	20,000	140	98	2.94

Table 1: Estimated Provincial Income from Lithium Exploitation in Argentina

The royalty in the projects is three percent of the pithead value of the minerals. This pithead value is the mining value declared by the company, meaning the actual sales value minus the costs of production from extraction to transportation for export (Svampa, Bottaro, and Sola Álvarez 2009, 34). There is no data available on these costs (as it is estimated by the companies themselves).

The lithium carbonate price depends on the quality of the product and the development of demand and supply. While a ton of high-purity (99.5 percent) lithium carbonate sold at 6,500 USD / ton in 2014, spot price estimates were up to 21,000 USD in 2016. The Deutsche Bank estimates future prices to stabilize between 10,000 and 12,000 USD. For lithium of 98.5 percent purity, price estimates settle at 6,000 to 7,000 USD (ibid.).

For the overview, the sales values were estimated at 7,000 USD per ton of lithium carbonate. The production costs were estimated at 30 percent of sales values, which is a very conservative assessment as it can be expected that companies declare higher costs.

See Slipak (2015) on the problem of limited data from Argentinean lithium companies.