MASTERARBEIT / MASTER'S THESIS

Titel der Masterarbeit / Title of the Master's Thesis

„Women* in mining cooperatives in Oruro, Bolivia"

verfasst von / submitted by

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angestrebter akademischer Grad / in partial fulfilment of the requirements for the degree of

Master of Arts (MA)

Wien, 2020 / Vienna, 2020

Studienkennzahl lt. Studienblatt / degree programme code as it appears on the student record sheet:	UA 066 589
Studienrichtung lt. Studienblatt / degree programme as it appears on the student record sheet:	Masterstudium Internationale Entwicklung
Betreut von / Supervisor:	Mag. Dr. Isabella Radhuber

“It would be reasonable to say that
every society today lives in global modernity,
even if only in the darkest corners of its effects”

Sandra Harding, 2009

Les quiero agradecer mucho a las mujeres* cooperativistas que me permitieron pasar tiempo con ellas* durante el tiempo que estuve en Bolivia y por su confianza en mí, contándome de su vida, su trabajo y sus realidades. Las admiro mucho.

Les quiero dar gracias también a Silke y Alberto, a CEPA – el Centro Ecologico de Pueblos Andinos, por su colaboración, y a todos los que nos ayudaron durante el camino de la investigación en Bolivia.

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Abstract English

Ninety per cent of all miners in the tin and mineral complex extracting sector in Bolivia work in cooperatives, autonomous associations of people working independently. The present study is a response to the lack of research about women* in this industry put in the context of (neo)extractivist theories. Women's work and daily lives have been highly invisible in literature. Therefore, a field research and a literature review were conducted in June 2019 in Oruro. The present study aims at showing that women* working in cooperatives work in different areas inside and outside of mines. In the first selected case, women* worked extracting tin outside the mine, washing the mineral out of earth in a time-consuming process using various chemicals. In the second case, women* worked mostly inside the mine extracting the mineral complex silver-lead-zinc. In both cases, the women* were in rough situations due to firstly, their socioeconomic status, often being retired, single-mothers or widows taking care of several children and working out of necessity. Secondly, the women* experienced poor working conditions with long hours and no security or health protective measures. Thirdly, their health is compromised as they often do not have social security and even if they do, they do not have access to proper health care. Fourthly, women* are in power depencies, exploited by their intermediary marketeers who set the price and trick the women* with excuses to pay them less than what the minerals are worth. Even though they work hard, they do not receive sufficient earnings to live a dignified life. To conclude, future research among others should apply a quantitative approach as well and should focus on other cooperatives as they are very different.

Abstract Deutsch

Neunzig Prozent aller Arbeiter*innen im Bergbausektor in Bolivien arbeiten in Kooperativen, autonomen Vereinigungen von Menschen, die selbstständig tätig sind. Die vorliegende Studie trägt zur Füllung einer Forschungslücke im Zusammenhang mit der Rolle von Frauen* in dieser Branche bei und setzt sie in den Kontext (neo)extraktivistischer Theorien und Debatten. Ihre* Arbeit und ihr* Alltag sind in der Literatur weitgehend unsichtbar. Daher wurden im Juni 2019 in Oruro eine Feldforschung und eine Literaturrecherche durchgeführt. Die vorliegende Studie soll zeigen, dass Frauen*, die in Kooperativen arbeiten, in verschiedenen Bereichen innerhalb und außerhalb von Minen arbeiten. In der ersten Fallstudie arbeiten Frauen* außerhalb der Mine in der Zinngewinnung und waschen das Mineral in einem zeitaufwändigen Prozess mit verschiedenen Chemikalien aus dem Gestein. In der zweiten Fallstudie arbeiten Frauen* hauptsächlich im Inneren der Mine und bauen den Mineralienkomplex Silber-Blei-Zink ab. In beiden Fällen befanden sich die Frauen* aus verschiedenen Gründen in schwierigen Situationen, zum einen aufgrund ihres* sozioökonomischen Status, schon pensioniert, alleinerziehend oder verwitwet. Gleichzeitig kümmern sie* sich meist um mehrere Kinder und verrichten ihre* Arbeit aufgrund einer Notwendigkeit. Zweitens, die Arbeitsbedingungen sind prekär, mit langen Arbeitszeiten und ohne jegliche Sicherheits- oder Gesundheitsschutzmaßnahmen. Drittens ist ihre* Gesundheit gefährdet, da sie* oft keine soziale Absicherung in Form einer Sozialversicherung haben, und selbst wenn, haben sie* keinen Zugang zu einer angemessenen Gesundheitsversorgung. Viertens befinden sich Frauen* in Machtverhältnissen, da sie* von Zwischenhändler*innen ausgebeutet werden, die den Ankaufspreis festlegen und die Frauen* abzocken, indem sie Ausreden finden, ihnen* weniger als das zu zahlen, was die Mineralien wert sind. Auch wenn die Frauen* hart arbeiten, verdienen sie* kein ausreichendes Einkommen für ein menschenwürdiges Leben. Zukünftige Forschung sollte unter anderem quantitativen Daten erheben und analysieren und sich auf eine größere Anzahl von Kooperativen konzentrieren, da diese sehr unterschiedlich sind.

1. Introduction

The world is becoming more and more globalized and both the number of electronic devices and the number of digitally connected people are increasing rapidly. Regardless of whether it is mobile phones or computers, the devices do not have a long life and are often changed by its users. Regarding to an Austrian newspaper, people change their phones every 2,7 years (APA, 2018). However, few people think about where our phones come from and how our computers are produced. A single mobile phone contains dozens of raw materials that have to be extracted, from gold and tantalum to tin and silver (Sydow & Reichwein, 2018, p. 5). Many of the materials contained in our electronic devices are excavated in countries of the Global South. One of these countries is the South American country Bolivia. Bolivia is the world's fourth largest raw tin exporter, with a share of 11% (2017) of the world market (Observatory of Economic Complexity [OEC]). Lead ore, zinc and gold are also important export goods for Bolivia that can be found in many electronic devices (OEC, Fischer & Nemnich, 2012).

When looking into the topic of resource extraction, I found that there was little information on women* and their role in mining in Bolivia. I found that 90% of all miners in Bolivia work in cooperatives while they are only responsible for 30% of the country's mineral exports. By definition, a cooperative is an autonomous, democratic association of independent miners (Michard, 2008, p. 7). The internationally available literature about mining and cooperatives in Bolivia often does not cover the work of women* and their contribution in the sector. Moreover, research on this topic tends to be over ten years old. This thesis intends to fill this research gap by focusing on the visibility of mining women* and the realities of their daily lives.

Literature about women in mining in Bolivia is generally, with a few exceptions, not available online. Thus, the main parts of the literature review are based on books and reports found in libraries and organizations in different parts of Bolivia. Furthermore, semi-structured interviews and ero-epic conversations (free dialogue) are used for the empirical research. The analysis consists of two parts, an inductive content analysis for the interviews and a deductive content analysis for the ero-epic conversations, according to Mayring's content analysis? (2016, pp. 115–116).

In order to give a broad insight on this topic, two very different cooperatives were chosen. In one cooperative, the associates work outside the mine washing out tin from discards they had purchased from mines. The other cooperative excavates the mineral complex lead-silver-zinc, which is done mainly inside the mine. Two different situations and yet, both are found to be problematic in terms of the miner's working conditions, security and health.

The field research for this master thesis was conducted together with Silke Ronsse, a researcher for the 'Make ICT Fair' campaign. The campaign aims to raise awareness for the social and environmental problems that come with the current global IT device production and consumption. The focus of Silke Ronsse, my research partner, was the supply chain of minerals, while my focus was on the gender aspect of mining cooperatives. The research results were exchanged and included in both her report and this master thesis.

The thesis is structured in four main parts. After explaining the research design and theoretical framework, there is an extensive literature review about women* in mining in Bolivia. This is followed by the empirical research and the last part consists of contextual factors of the research and the conclusion.

2. Research design and theoretical framework

2.1. Research interest

Ninety percent of all workers in the mining sector in Bolivia work in cooperatives, autonomous associations with widely "independent" associates. Most of Bolivia's cooperatives were found in the 1990s in the aftermath of the liquidation of COMIBOL, the former state mine company, leaving thousands of miners without jobs. Due to their organization and structure, health and security standards are often not adhered to, making the cooperative associates particularly vulnerable (Michard, 2008, pp. 8–12). There is a decent amount of literature on the way cooperatives work (see literature review). However, women* and their work and women*'s living conditions are largely ignored and relatively invisible in research in this area.

It is widely believed by miners that women* entering mines cause bad luck. According to the superstition, they result in a less generous amount of mineral being mined and cause accidents (Michard, 2008, pp. 56–57). However, there does exist women*

miners and a study about the socioeconomic status of these women* indicates that they are a part of some of the most vulnerable demographic groups, such as elderly women* (12% being over 60 years old), widows, divorced women* or single mothers (Ana María Aranibar, Sandi, & Lafuente, 2017, pp. 27–31).

Research about women* in mining cooperatives is still in its infancy. This thesis aims to contribute to this research gap through a literature review followed by a field research in the department of Oruro in the Altiplano of Bolivia. There is very little material available on- and offline from Austria. There were few comments or footnotes about women* in literature about cooperatives (Francescone & Díaz, 2014; Michard, 2008; Poveda, 2014) and one book on the work of women* (Centro de Promoción Minera, 1996), but there was not much more information on this particular topic. My research interest lies in the gender aspect of cooperative mining and questions like who are the women* and what do they do, why do they work in cooperatives and what type of work do they do.

2.2. Relevance

The subject of this master thesis is women* in mining cooperatives in Oruro, Bolivia. The department Oruro has approximately 545.000 inhabitants with nearly equal numbers of women* (50,1%) and men* (49,9%). Almost two thirds of the population live in urban areas whereas one third lives in rural areas. In 2018, the department of Oruro exported products worth 395,4 million USD. The most important products were the minerals tin (160,9m USD) and zinc (88,7m USD) (INE Instituto Nacional de Estadística, 2019, pp. 4–5). In 2017, Bolivia was the fourth largest exporter of zinc globally, holding a 9,2% share, after Peru (20%), the US (14%) and Australia (13%) (OEC). For raw tin, Bolivia is the fourth largest exporter with 7,5% of the global market (OEC).

Minerals extracted from Bolivia's mining cooperatives end up on the global market and later in many IT devices. For example, Glencore, the world's biggest commodity trading and mining company, is a multinational company with headquarters in Switzerland and the US. A recent shadow report of Glencore's operations in Bolivia states that through unfair contracts, the company forces local mining cooperatives taking the businesses' environmental, economic, labor, and social responsibilities for these mining projects

by simply “buying” from them rather than running the mining operation (Shadow Network of Glencore Observers, 2017).

In the context of Bolivia, cooperatives are especially relevant. 90% of the mining sectors’ workforce works in cooperatives (Michard, 2008, p. 8). However, as most production is in the hands of foreign-companies, only 30% of the country’s mining products exports are contributed to by cooperatives due to several reasons, e.g. their lack of machinery and efficiency (Francescone & Díaz, 2014, p. 2). Low shares in exports while occupying a large number of workers may be caused by the form of production. There are some cooperatives where some of the workers use machines, but most of the cooperatives work without; from digging the holes with a hammer to carrying 40 to 60 kilos of material for 45 minutes on their backs to the outside of the mine (Michard, 2008, pp. 26–28).

In cooperatives, workers do not have a fixed income that they can count on monthly. The income depends both on yield and on international commodity prices. If one person happens to have chosen a very profitable corner, they can expect considerably more income than the other person working on the opposite side. After the extraction, everyone sells their raw materials themselves. There is generally no common organization or a common sale (Michard, 2008, pp. 46–48). In many ways, workers are taken advantage of by traders in the selling process. Examples include cheating when weighing the mineral, at the evaluation of purity or when discounting charges for security and rent of the mine (Michard, 2008, pp. 41–42).

For workers in cooperatives, proper health care is not guaranteed as very few people have social insurance. On paper, paying for social security is obligatory, but in practice most workers do not have any sort of insurance. Michard (2008, p. 51) also states that many workers have reported bad treatment in hospitals and hospitals being very far away thus hardly accessible for them. Labor conditions in the mines of cooperatives are very poor. Workers face several risks daily; for instance, the galleries of the mines are not well maintained and can therefore break and trap the workers inside. Perforation of the galleries is done without coordination, which can lead to instability and a breakdown of the gallery. Accidents often happen because of the lack of security clothing (e.g. helmets) and because of a lack of knowledge and precaution when handling explosives. Because mines are not properly ventilated, toxic gases can accumulate in the air and lead to explosions, sickness or death. A lack of proper

ventilation is also problematic as dust is breathed in leading to serious illnesses (Michard, 2008, pp. 50–53).

In a recent study of Aranibar et al. (2017), the socio-economic data of 1065 mining women* in different regions of Bolivia was analyzed and show relevant results. The socio-economic situation of women* in mining in Bolivia shows a clear tendency. Women* working in mines are generally part of vulnerable groups. While child labor in mining is rare, with only 1% of women working in mines being under the age of 18, women* working in mining in Oruro are of a relatively high age, with 17% being between 41 and 50 years old, 34% being between 51 and 60 years old, and 14% even being over 60 years old. This means that almost half of all women* in Oruran mines are older than 51 years old. Many of these women are also in precarious positions due to their civil or marital status – 25% of the women* in Oruro are widows, 17% are divorced, 14% are single mothers; only 28% of respondents in Oruro are married. Due to Bolivia's conservative and patriarchal society, life is more difficult for women who are not married, that means more than half of all women* are in vulnerable positions due to their civil status. In addition, 38% of women* surveyed were illiterate (Ana María Aranibar et al., 2017, p. 36).

Working hours of women* in cooperatives are usually 6 to 8 hours (48%) or more than 8 hours (46%), with more than half (53%) working 5 to 6 days a week and more than a third of all women* working 7 days a week. One in two women* (55%) have an income of maximum one national minimum salary, one in three (32%) has an income of one to two times the Bolivian minimum salaries. It stands out that women* in mining companies have significantly higher incomes than those working in the cooperatives. All women* working in mining companies responded have at least 2 times the national minimum salary per month, with 40% receiving a monthly income of three to four times more than minimum wage and another 40% receiving 4 times or more (Ana María Aranibar et al., 2017, pp. 62–64).

The study shows that there is a significant difference between water provision of women* in cooperatives and women* working in mining companies. While 100% of women* working in mining companies indicated to have water provision from tubes, only 52% of women* being partners in cooperatives do so (Ana María Aranibar et al., 2017, p. 46). In terms of heath and safety, the women* respondents indicated that in 13% of all cooperatives no safety measures were implemented (protective clothes, ear

protection, glasses etc.). For example, only 58% of all respondents used helmets, not even half (47%) used a breathing apparatus. This is most probably the main cause of the high numbers of death and illness. While 17% of all deaths are caused by accidents, 16% are caused by stomach illnesses and 14% are due to respiratory illnesses. This leaves us with 47% of all death cases being directly connected to mining activities (Ana María Aranibar et al., 2017, p. 53).

90% of miners in Bolivia working in cooperatives and Ana María Aranibar et al. (2017) conducted a study of at least 1065 women* working in mines, the numbers show that women* are indeed relevant in cooperative mining while they are practically invisible in current research. Their particularly precarious situation calls even more for attention.

2.3. Theoretical grounding

This thesis is to be read within extractivist debates of authors including Brand and Dietz; Ulloa; Dorronsoro; Jenkins; and Puleo in social sciences. The word (neo)extractivism was firstly mentioned in one of Eduardos Gudyna's work in 2009, when he discussed characteristics and challenges of the Latin American resource extraction sector (Brand & Dietz, 2014, p. 91). "It is the sociopolitical conflicts and disputes that have shaped the term [(neo)extractivism] in the sociopolitically relevant social sciences" (Brand & Dietz, 2014, p. 91). I embed this thesis within this Latin American theory and its debates in line with the decolonial approach explained further in chapter 2.6.This includes the use of works of mainly non-white researchers, many of them from South America.

(Neo)extractivism refers to the debates about development paths related to production, exploitation and exportation of natural resources and nature elements with the aim to reduce poverty and inequality. Natural resources are mainly extracted for the increased demand for commodities in the Global North, where people live a resource-intense life. Furthermore, the economic development of these countries has been leading to more resource demand (Brand & Dietz, 2014, p. 88).

The extractivist debates should not be seperated from political ecological arguments in which nature is appropriated socioeconomically, cultural and political-instutional. This shifts the focus from the enviroment to the social appropriation of nature, i.e. the consumption and production of nature through one's way of living such as food, housing or health (Brand & Dietz, 2014, p. 99). Thus, (neo)extractivism is not the mere

techonological resource extraction, but rather the socially control and appropiation of nature, which is expressed in a capitalistic production of natural resources exploited to be sold in the world market. They reprent a basic condition for the existence of such capitalistic production form (Brand & Dietz, 2014, p. 99). Puleo (2017, pp. 179–180) further argues that there are similarities in violence of animals and women with regard to appropriation of both.

Extractivism is justified with liberty and equality, which do not exist in reality. On the contrary, extractivism dominates the commerical relations of the Global North and the Global South, with poor women in the Global South often being the ones most exploited (Puleo, 2017, p. 166). Puleo further argues that within the existing patriarchy, the appropriation of nature is interwined with the appropriation of women. This patriarchy only continues to exist *because* of this appropriation of territory and nature (Puleo, 2017, pp. 179–180). Taking into account a gender perspective, Ulloa (2016, p. 125) calls for the need to include territorial as well as environmental, political, economical, cultural and social aspects to explain the effects that extractivism has on women and men and their territories and bodies. However, gender problematics have not been discussed in mining extractivism debates, which is why there is very scarce information on this topic (Ulloa, 2016, pp. 124–125). Moreover, Jenkins (2014, p. 2) stresses that women are mainly invisible in research about extractivism and particularly in mining.

Women are unproportionally disadvantaged, which dominates their way of living

Ulloa (2016, p. 127) elaborates that there are several types of mining, as for example the artesanal, small scale mining. This applies to the cooperative mining in Bolivia. For for some women, particularly in that mining field, their work is their way of living. The author argues that mining creates inequalities that include physical and emotional violence. These are represented in the pratices of the women's daily lives (Ulloa, 2016, p. 127). Harding (2009, p. 406) contributes to this argument that

> "chronologies grounded only in men's lives ignore the most significant changes in women's lives, they ignore the effects that the condition of women's lives have had on men's lives".

"Women are disproportionately affected by many of the negative impacts of mining" (Jenkins, 2014, p. 10). Mining particularly states that the inequality manifested in women's daily lives have many different forms. Mining is considered a masculine type of work, done by masculine identities, which is the reason why female contributions are made highly invisible (Ulloa, 2016, p. 127). Not only is women's (paid) work

invisible, but also their unpaid work. Through their unpaid care work, women are subsidising mining activities (Jenkins, 2014, p. 13). When women work in mining, they often stay in traditional roles, thus, have a double burden as they continue to be the main caregivers to their families while working in the productive sector as well (Jenkins, 2014, p. 12; Ulloa, 2016, p. 131). As women are the main caregivers, they also face the environmental consequences as well as health problem in the family overproportionally (Jenkins, 2014, p. 12). Furthermore, women working in mining often lose their social and economic status (Jenkins, 2014, p. 18). When the women enter the labor market, they do not do it neutrally, but as women, gendered and/or sexualized individuals (Puleo, 2017, p. 176). Another main point which reprents a major unproportional disadvantage is in their daily lives is that they have no access to common goods like food or health care (Ulloa, 2016, p. 131). They often live in basic facilities which lack basic hygiene standards (Jenkins, 2014, p. 14).

There many actors involved in the (re)production of gender inequalities, one of them is their identity. Mining is attributed to be male work, which means that women have been excluded and associated with danger and contamination. Further, they have been characterized as source of conflict. Thus, mining women need to take on masculine identities to gain access to mining activities (Ulloa, 2016, p. 128). Inequalities are also represented in decision making processes (Jenkins, 2014, p. 22; Ulloa, 2016, p. 129) Mentioning Bolivia particularly, Ulloa (2016, p. 129) states that masculine participation is favored. Jenkins (2014, p. 22) emphazises that traditional cultural norms might make the women feel unable to speak in meetings. This strengthens the unfavored position of marginalized groups as for example old or disabled mine workers (Jenkins, 2014, p. 22). Moreover, a lack of literacy represents more ground for exploitation (Jenkins, 2014, p. 22). There are also economic reasons for unproportional inqualities in women's daily lives. The women work in mining because of their aspirations to enable their children to have a better life. However, many enter this field under unqual terms (Ulloa, 2016, p. 130). They earn less money for their labor than men (Jenkins, 2014, p. 22). With regard to research in this field, Ulloa (2016, p. 136) urges to visibilize and politicize the women, their bodies and their daily practices such as schedule changes, activities or domestic relations. Moreover, Jenkins (2014, p. 13) mentions the lack of regulation of the sector as a major problem.

Generall, women working in mining might have some benefits which drews them to work in this field, for example having their own income. However, Jenkins (2014,

p. 121) argues that women are more vulnerable to the risks in relation to little access to the benefits of mining.

Cuerpo-territorio

As I have mentioned before, one debate within extractivist theories is the appropriation of nature through bodies, particularly women's bodies. Puleo elaborates on the patriarchic dominance over women and nature. She writes in the context of "the rent of an uterus", which is not focus of this thesis. However, her considerations to the body-nature concepts are approriate to be applied (Puleo, 2017, p. 182). Maria Lugones states that through and during colonization, the colonizers "gained access to people's bodies through unimaginable exploitation, violent sexual violation, control of reproduction, and systematic terror" (Lugones, 2010, p. 744). Dorronsoro cites indigenous women at the Lima conference saying that they define their territories

> "abarcan[do] no sólo la distribución geográfica y áreas físicas de nuestras tierras, aguas, océanos, glaciares, montañas y bosques, sino también las profundas relaciones culturales, sociales y espirituales, así como los valores y responsabilidades, que nos conectan con nuestros territorios ancestrales"[1] (Dorronsoro, 2013, p. 2).

In the context of extractivism, body-territories have been appropriated and dispossessed and both men and women became subject of exploitation (Ulloa, 2016, p. 131).These body-land-territory concepts are deeply hurt by colonialism and the appropriation of bodies (Dorronsoro, 2013, pp. 2–3). Another woman explains

> "el avance de las industrias extractivas es una invasión a los territorios y a los cuerpos, un saqueo de las tradiciones culturales y destrucción de las formas de vida que afectan de manera diferenciada a las mujeres, quienes, por ser en su mayoría gestoras principales del hogar, se ven obligadas a cambiar sus lógicas de vida para sobrevivir y proteger a su familia, a sus pueblos"[2] (Censat-Agua Viva-Amigos de la Tierra Colombia, 2016, in Ulloa, 2016, pp. 132–133)

[1] Engl. "cover[ing] not only the geographical distribution and physical areas of our lands, waters, oceans, glaciers, mountains and forests, but also the deep cultural, social and spiritual relationships, values and responsibilities, which connect us to our ancestral territories" Dorronsoro (2013, p. 2)

[2] Engl. "the advance of the extractive industries is an invasion of territories and bodies, a plundering of cultural traditions and destruction of ways of life that affect women in a differentiated way, who, because they are mostly the main caretakers of the household, are forced to change their logic of life in order to survive and protect their family, their people" (Censat-Agua Viva-Amigos de la Tierra Colombia, 2016, in Ulloa (2016, pp. 132–133).

In relation to mining, women state that their opressed bodies live within the violent defense of their territories. The defense of their first territory is that of the territory-body (Censat-Agua Viva-Amigos de laTierra Colombia, 2016, in Ulloa, 2016, pp. 134–135).

Further, the global system of hierarchies including oppression, violence and approriation of bodies is contructed over the sexualized body of women (Cabnal, 2010, in Dorronsoro, 2013, p. 5). In the context of mining, women who work in a masculine space of work, where they are often reduced to be sexual objects (Ulloa, 2016, p. 131). The body of a woman is seen and treated as a posession whose products can be sold (Puleo, 2017, p. 177).

The inequality in mining extractivism has its roots in the unequal gender relations coming from processes of modernerity/coloniality and the constructed duality of nature/culture and woman/man (Ulloa, 2016, p. 126). Extractivist activities triggered these gender inequalities and created other unequal relations including violence against women, with the female body as scenery of conflict (Ulloa, 2016, p. 130).

Coloniality of gender and its implication of power relations

“Only the civilized are men an women” states Lugones (2010, p. 743). The non-civilized are no men, women or humans. The author developed the concept of the coloniality of gender which adds another dichotomy to the ones discussed, the one between human and non-human. This dichotomy was introduced by the Western men who arrived in the Americas and the Carribean and existed parallely to the dichonomy of men and women (Lugones, 2010, p. 743). “This distinction became a mark of the human and a mark of civilization”. (Lugones, 2010, p. 743). Indigenous peoples were classified as non-human and similar to animals, together with African slaves, whereas the Western *men* was the noble one became the subject to be admired. This idea of non-humans was underlying for the cruelty of the colonizers. Lugones (2010, p. 744) argues that in the coloniality of gender, “sex was made to stand alone in the characterization of the colonized”. Thus, it was used for judgement by the colonizers (Lugones, 2010, p. 744). The author states that if colonizers had to transform the uncivilized, it would have had been a transformation in nature, not identity. Furthermore, she argues that the coloniality of power and gender is a reduction of people, a dehumanization (Lugones, 2010, p. 745).

The coloniality of gender is at the same time an exercise of power. It influences the women's daily lives "at the levels of the body, labor, law, […] and the introduction of property and land dispossession" (Lugones, 2010, p. 754). The overtaking of power over peoples is expressed in sexual and labor terms. There are power relations that unequally affect women, often close(er) to nature. Colonization played an essential role in these power relations, creating hierarchies putting the Western, humans, over the non-Western, non-humans (Ulloa, 2016, p. 132).

The extractivism theory suits for this research particularly well for several reasons. Firstly, (neo)extractivism is formed by unequal North/South relations and based on the increased demand of commodities. I argue that the information technology sector is increasing and the Global North demands more IT, thus more natural resources have to be extracted. Secondly, theory argues that women are disproportionally disdvantaged in extractivist mining. These disadvantages are in need of research, in particular in the field of mining, which this thesis contributes to. Thirdly, several authors call for gender perspective and more visibilization of women and their daily lives in the context of extractivism (Ulloa, 2016, p. 136). Fourthly, the coloniality of gender implicates power relations that affect women on all levels of their daily lives, which I would like to include in this reseach as well (Lugones, 2010, p. 754).

2.4. Research questions

Before going to Bolivia, my knowledge of women* in cooperatives in Bolivia was very limited. Therefore, my research questions were constantly developed throughout the research process. I formulated one main research question and two sub-research question as follows:

1. **How does cooperative mining affect women*'s daily lives in tin and metal-complex mining in Oruro?**

The first research question is based on Ulloa's considerations on the effect of extractivism on women. She argues that inequalities are represented in the daily practices of women's lives (Ulloa, 2016, p. 127) which I focus my research on in the context of cooperatives in Bolivia. Furthermore, Jenkins (2014, p. 2) highlights that women's daily lives are affected by mining and that they are invisible in current research.

1.1. To what extend, if at all, are women* unproportionally disadvantaged in cooperative mining in Oruro?

Jenkins (2014, p. 10) states that women are unproportionally disadvantaged because of numerous reasons that I have elaborated in the prior chapter. I would like to find out if women* in cooperatives in Oruro extracting tin and the mineral complex zinc-lead-silver are unproportionally disadvantaged and if yes, how.

1.2. How are power relations in cooperative mining structured?

Following the line of reasoning of Lugones (2010, p. 745), the coloniality of gender implies power relations in the daily lives of women. Another focus of this research is the way power relations regarding cooperative mining women* in Oruro are structured.

Both aspects, potential disproportional disadvantages and power relations are represented in and a factor of the women's daily lives, which is why the two questions were defined as sub-research questions.

In my decision to study women*, I do not intend to categorize them as a homogenous group. The population in Bolivia is very diverse and I cannot talk about all people, nor all (mining) women* in Bolivia. I have decided to focus on the department of Oruro in the Altiplano of Bolivia, i.e. the highlands, and more specifically on two cooperatives in particular. As I will explain later in more detail, every cooperative is very distinct in their history, organization, values, associates and production. Even though some cooperatives are geographically close, it is nearly impossible to compare one with another. Consequently, cooperative mining women* constitute a very heterogeneous group, as which I value them. Els Van Hoecke (2007), who has done extensive research on mining women*, states that mining women* cannot be categorized within the existing groups. They are neither rural farmers nor indigenous women* – while not claiming them to be a separate homogenous group either. Mining women* are very diverse, have their own culture, and different needs and demands which need to be identified and visualized specifically (van Hoecke, 2007, p. 69).

The need for talking about women*, however, roots in the fact that much of the current literature about cooperatives talks about men mostly (Francescone & Díaz, 2014; Michard, 2008; Poveda, 2014). There are women* working in the sector and they are essentially invisible in terms of research in this field. The term woman*/women* is used throughout this paper to include everyone who identifies themselves as such.

Speaking about woman/women*, I do not intend to separate sex and gender. On the contrary, as Lugones (2010, p. 744) elaborates, sex and gender are tied together and cannot stand alone. There are women* working in the sector and they are essentially invisible in terms of research in this field. By asking the question of what type of work women* do, this should refer to both their productive and reproductive work as reproductive work cannot be excluded from the women*'s daily life. However, as the center of interest of this paper is women* who work in the cooperatives of Oruro, their mining activity will be the primary focus of this paper.

My decision to pay attention to women*'s work inside and outside the mine developed during my time in Bolivia. I arrived without a preliminary decided target group. Not only did I learn quickly that a large number of women* work in both areas, both inside and outside the mine (literature available focused rather on their role outside the mines; see the literature review), but also that their situations are different, precarious and in need of research.

2.5. Definitions

Before talking about my theoretical approach and methodology, some terms I use must be defined. There is a strong need to talk about women* when talking about cooperatives in Bolivia, because the current literature mainly talks about men (see chapter 3, literature review). The term *women** is used throughout this paper referring to individuals with a certain assigned gender. Simone de Beauvoir argued that there is a pure biological sex and a socially constructed gender; "one is not born a woman*, but, rather, becomes one" (Simone de Beauvoir, cited by Butler, 1990, p. 12). However, Butler argues that there is no such thing as "pure" sex, but that sex is always gendered (Butler, 1990).

It is important to mention that I do not talk about women* considering them as a homogenous group or as part of a predetermined group such as indigenous or rural. van Hoecke (2007, p. 69) argues that in Bolivia,

> "women* living in mining regions cannot be considered rural women*, nor indigenous, nor farmers or women* of peri urban because it is a sector with proper characteristics, a proper culture, with different needs and demands which need to be identified and visualized specifically"

Moreover, Mohanty (1984, p. 344) states that groups and categories must be created from within a context. Apart from their gender, which is necessary in this case, the

women* studied are not categorized in any additional way as they vary too widely to be generalized into one coherent group. It is more accurate to rather see them as a group within a situation and within a context that can vary (Mohanty, 1984, p. 345).

To demonstrate that gender is not a binary concept that takes into account only women and men, but is socially constructed and includes all people, I use the star when talking about women* and men*. In direct citations from literature sources that did not use a star whatsoever, I do not use the star.

2.6. A feminist(,) decolonial approach

The theoretical framework for this thesis will be a feminist(,) decolonial one. This implies a deep reflection of my position as writer of this thesis. I am a white Western researcher, traveling from Austria to the highlands of Bolivia to conduct a study about people in the cooperative mining sector. This position, my position, cannot be ignored as such as it has implications on the research, the results and my knowledge production. Being born and raised in Central Europe in a middle class family and receiving high quality education, my view has been influenced for the majority of my life by a Eurocentric, and possibly also colonial, view. The privileges of education and a high standard of living I have not earned but gained simply by being born in a rich country. Where I come from, I cannot change, and I am aware that my perspective as a researcher will never be the same that that of an indigenous researcher. However, this thesis is written under the constant reflection of this role and its implications on the research process. I completed my bachelor's in international business. This mainly meant studying the concept of capitalism and how it is justified within the business world while ignoring any alternative ways of economics. Thus, doing my master's in development studies has quite changed my views. I have come across many authors and theories and several authors have provided me with an understanding of several aspects of decolonial and feminist research.

The need for a decolonial approach in this thesis was clear from the beginning. Bolivia has a long history of colonialization and exploitation and the aim of this research was to do so from a perspective that takes this history, as well as other aspects, into account. The authors I have been reading throughout my studies and that have helped me developing my standpoint for this work were for example Sandra Harding, Chandra T. Mohanty or Linda T. Smith. The authors I am using have referred to post-colonialism

and decolonialism. Taking into consideration they are not synonymous, I believe they have very strong overlaps. Therefore, I will use aspects of both debates not differentiating in my reasoning.

Colonialism was and is based on the distinction between humans and “non-humans” as justification for enormous cruelty (Lugones, 2010, p. 744). Lugones argues that Christian missionaries particularly used gender as a hierarchic concept (2010, p. 743). She* states that “the colonial “civilizing missions” was the euphemistic mask of brutal access to people’s bodies through unimaginable exploitation, violent sexual violation, control of reproduction, and systematic terror” (Lugones, 2010, p. 744).

Doing my research about women* from a decolonial perspective, I must note that I do not refer to “colonized women*”. As Lugones (2010, p. 745) states, “no women* are colonized; no colonized females are women*”. She* refers to the coloniality of gender, which is still present and means that there is an “intersection of gender/race/class” which is underlying in the capitalist power structure of today.

In *Decolonizing Methodologies*, Smith (Smith, 2008, p. 1) claims that “scientific research is implicated in the worst excesses of colonialism”. Being an indigenous researcher from New Zealand, she* argues that research has been viewed through the eyes of the West and blurred out or even ignored voices from indigenous researchers. Colonialism has had a deep effect on academia and has dominated the (mostly Western) research production for a long period of time. Research serves certain people, in many cases the ones who financed the research; it has not been serving indigenous communities and peoples (Smith, 2008, pp. 1–5).

It has also been common in Western scientific research, specifically feminist writing, to study *women**. Women* are not a homogenous group, nor are indigenous women* or black women*. Accurate and quality research cannot be done assuming there is one group of women*. Feminist research is not solely the production of research, it is related to feminist politics having important underlying power relations. Therefore, Western feminist scholarship has also had an impact on politics and not only on the academic world. Therefore there is a strong need to read Western research on “Third World Women*” critically, taking into consideration these power relations (Mohanty, 1984, pp. 33–334).

The reasons that research has been written from a Western point of view are numerous. The time and space in this work is not sufficient to go into details about all the reasons, but the following paragraph will discuss the arguably most relevant for this paper's research context. To start with, many indigenous researchers have simply been obliged to prioritize the survival of their communities rather than working on research (Smith, 2008, p. 4). A long history of colonialism has led to the view that non-Western knowledge is not accepted due to the presumption of its inability to be universal. The concept of inferiority of non-Western knowledge under Western knowledge has led to Western knowledge production characterized as one *about* – to use the same term as he does - subaltern people instead of *with* subaltern people (Grosfoguel, 2011, para. 2). Entangled global hierarchies were constructed when "a European/capitalist/military/Christian/patriarchal/white/heterosexual/male arrived in the Americas" (Grosfoguel, 2011, para. 14). Groesfoguel provides a 15-point list of global hierarchies underlying research, some of which are explained below.

There is "a diversity of forms of labor organized by capital as a source of production of surplus value through the selling of commodities for a profit in the world market" (Grosfoguel, 2011, para. 15). In Bolivia, natural resources are an extracted commodity to be sold on the global market. There are 60.000 people working in the Bolivian cooperative mining sector that mostly cannot live a dignified life. They depend on intermediate buyers that have capital themselves or are supported by, often foreign, capital (Michard, 2008, pp. 7–8). Countries from the global North sell minerals in the world market, earning substantial profit, from which the workers do not see any. Another of Groesfoguel's points is that the international labor division in core and periphery which specifically applies in my context. Bolivia can be counted as the periphery and the Global North is the core. The hierarchy of gender leads to the development of superiority of males over females as well as a racial hierarchy privileging European-looking people over non-European people. More points that can be applied to Bolivia are an information technology dominated by the West. Women* in Bolivia who participated in the interviews stated that they do not know about existing technologies to improve their working conditions. They also did not have any means of informing themselves as, for example, time to invest in research or technology like a computer and internet to read about it, let alone money to buy it (author's field notes).

Looking at the decolonial debate from a feminist perspective, it becomes clear that both theories are strongly complementary (Harding, 2009, p. 403). The effects of

Western feminist scholarships on the “Third World Women*” have been mentioned above. In Western research, the concept of “Third World Women*” was created, women* that are part of a homogenous group that is constituted as “powerless”, “exploited” and “sexually harassed” (Mohanty, 1984, p. 338). Mohanty (1984) calls for a discourse about women* “constituted as women* through the complex interaction between class, culture, religion and other ideological institutions and framework” (Mohanty, 1984, p. 344). Categories need to be created from *within* the local context and from *within* the situation (Mohanty, 1984, p. 344). In Lugones’ (2010, p. 745) work on the *Coloniality of Gender*, she* argues that the history of colonialism meant a civilizing mission violently gaining access to people’s bodies (p. 745). These missions used the gender hierarchy as ground for exploitation and violence and created a gender dichotomy. The whole idea of colonialism was not to see the colonized as humans, this applied to both men and women*. Moreover, turning the colonized against each other was part of the colonizer’s strategy. Decolonial feminism can therefore be a way to overcome the coloniality of gender (Lugones, 2010, pp. 744–745).

The strong complementarity of feminist and decolonial theories also becomes apparent studying their underlying epistemology and ideology.

> “[Both] positioned themselves against the policies and practices of modern Western Sciences as well as the dominant Western epistemologies and philosophies of science and technology that justify them. […] Neither movement is contained by geographical location, citizenship or the ethnic or gender identities of its participants” (Harding, 2009, p. 403).

According to Harding (2009, p. 404) these five important assumptions that have denominated research call for a decolonial feminist approach of research: First, the inequality of women* expressed in various levels of society, as for example those in the design and decision-making process of research. Second, there has been paid research in the past to prove a claimed inferiority of women* which necessitates an academic rebuttal. Third, research results have been used against women*, e.g. regarding their health. Fourth, educational agenda has been restricting women*’s development. Fifth, the underlying epistemologies, methodologies and philosophies of research have disadvantaged women* (Harding, 2009, p. 404). Harding (2009) further claims the relevant aspects for social relations of men and women* (in research) have to be taken into account. These are the chronologies grounded in men’s lives that keep ignoring the effects they have on both women*’s and men’s lives because of the

changing situation of women*'s lives. In addition, the sex of a person is "one of the most significant determinants of a person's rights and responsibilities within any and every culture, though in different ways in different cultures" (Harding, 2009, p. 406). Lastly, theories about social change have failed to take into account the role of women* in these processes (Harding, 2009, p. 406).

I have explained my theoretical standpoint as well as the underlying concepts and epistemologies of my research. Before the research trip, I studied them and adapted the concepts to the situation as much as I could. However, starting my empirical research in Bolivia, I found myself in the position of a white Western researcher, trying to learn more about cooperative mining women* in Bolivia. This position limited my research as I was seen instantly as *a white person coming from far away that might help.* It was very difficult for me to deal with this position. As this research took place in cooperation with the international 'Make ICT Fair' campaign, I could explain that the aims of the campaign are a more transparent sector and better working conditions. I also explained the mechanisms the campaign is trying to introduce, i.e. finding cooperatives that become part of the organization 'Electronics Watch' and that are willing to work according to environmental rights and respect human rights including labor or health rights. However, the process of introducing the concept is just starting and in an early phase. This means that miners cannot expect immediate effects, thus no direct help, which is what they would need the most.

2.1. Methods

As this research intends to be done from a decolonial perspective, this approach is also an underlying concept for the methods used. Harding (2009, p. 413) states that the standpoint methodology, which is related to the decolonial theory, is about researching both sides, that is "start[ing] off thinking about a situation from the women*'s lives involved, but attempt[ing] to explain the high-level institutional decisions and practices responsible for initiation and maintaining such situations" (p. 413). To apply an inclusive and bottom-up approach, a variety of methods are applied. Flick (2011, pp. 42–48) calls this the triangulation of various qualitative methods. It means that two or more methods are selected to answer the research question.

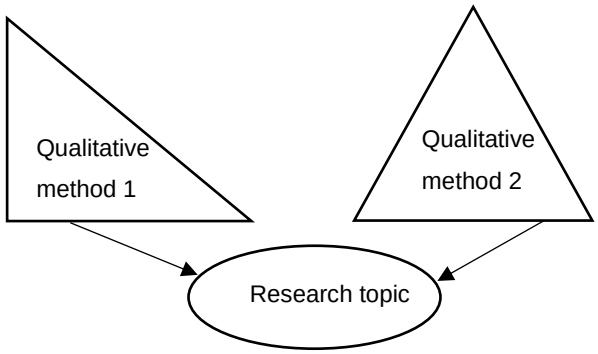

Figure 1: (Flick, 2011, p. 41), English translation by the author

He* distinguishes two reasons to use triangulation; on the one hand, for verification of results, and the other hand, for the extension of knowledge. In the case of this paper, the latter is true as there is very little information on the topic. Especially outside of Bolivia, literature was rarely available on this specific topic. Some authors that published research on cooperatives and/or mining in Bolivia mentioned women* only shortly. There was one book and one study specifically about women* that I found during the literature review beforehand. Thus, the amount of information was not very satisfying. The research trip included looking for literature on site and empirical research. For the collection of data, a combination of expert and narrative interviews as well as ero-epic conversations were used (according to (Girtler, 2009). For the analysis, a qualitative content analysis was applied. This combination of various methods enabled me to find valuable information.

The literature review before the trip included research in libraries in Vienna as well as online in different databases and online catalogues including the C3 library of Vienna on- and offline, as well as in the library of university of Vienna and in international databases. Additionally, a snowball system was used meaning that the bibliography of relevant literature was searched for more relevant works. The search was conducted in three different languages -- English, Spanish and German. A variety of keywords was used, e.g. women*, gender, women*'s work, work conditions, human rights, mining, cooperative mining, Bolivia, Latin America, tin, silver, lead, zinc mining; many of them also as a combination.

On-site in Bolivia, the research was conducted in local libraries in different cities, e.g. the library of the Center of Ecology and Andean Communities/Towns (*Centro de Ecología y Pueblos Andinos*, CEPA) in Oruro or the Red National Network of Women and Mining (*Red Nacional de Mujers y Minería*, RNMM) library in La Paz. Additionally, NGOs and other experts in this sector for literature and reading recommendations were

asked for recommendations. There was not a huge amount, but some relevant books and published work could be included in this thesis.

For the empirical part, interviews with different actors were conducted. In the beginning, semi-structured expert interviews were conducted. This type of interview intends to find out more about a topic by interviewing representative persons of a group rather than receiving information about the person themselves (Meuser & Nagel, 1991, cited by Flick (2005, p. 139). In my case, I entered the field without knowing much about the work of women* working in cooperatives – I had hardly found any information more recent than 10 years old – so I started getting to know the sector by talking to people who have worked in this field. Through these interviews I also narrowed down my cases and the exact research question. This was done in cooperation with my colleague Ronsse, who focused on the supply chain aspect of cooperative mining. Depending on the available information about the person there was beforehand (work field, experience, publications etc.), some questions were prepared. However, we left it open and mainly asked narrative-generating open questions (according to Flick, 2005, p. 147) about different topics we had had researched. Starting from the organization CEPA, we conducted expert interviews with organizations in Oruro including *Radio Pio XII Oruro* and Center of Research and Popular Education (*Centro de Investigacion y Servicio Popular*, CISEP). We also extended our research geographically and talked to experts from Radio Pio XII Llallagua and to the organization Centre of Support of Popular Education (*Centro de Apoyo a la Educación Popular*, CAEP) in Huanuni. Concurrently, we had meetings with local legal representatives of cooperatives from the Department Federation of Mining Cooperatives (*Federación Departamental de Cooperativas Mineras*, FEDECOMIN) of Oruro. Our main objective by doing so was to get to know the sector and define our research topic more concretely.

The second method applied was the narrative interview. It is used mainly for biographical research. The interviewee is encouraged to tell their story whereas the interviewer takes a passive position as listener (Flick, 2005, pp. 147–148). After a small introduction and informal chatting, narrative-generating questions were asked. Sometimes, the interviewees were open to speak in detail about their situations and their lives. However, many women* did not have confidence to talk openly; I assume that there were three reasons for this. Firstly, the interviews took place in the cooperative or at their workplace. Women* may not always have been in comfortable

positions to talk in detail about their life and/or work. For me, moral standards had obviously the highest priority, which is why I tried to not put them in uncomfortable positions. Secondly, the women* did not know me very well. I introduced myself and they knew what I was doing. However, women* were often (but not only) available because the women* representative of the cooperative asked them to. This was because cooperatives are organized with a high level of hierarchy. At first, we informed the FEDECOMIN, the legal representatives of cooperatives, then the president of the cooperative and in my case, also the representative of the women* in the cooperative. These hierarchies led to quite formal conversations and I suppose this limited the research process to some extent. Thirdly, the working schedule of the women* did not allow them to take time off to talk to me, which is why it was difficult to talk to them and get access to the information.

To lower the impact of these difficulties as much as possible, I used Girtler's (2009) technique of ero-epic conversations as another method to collect data. Girtler disagrees with the use of the term 'narrative interview'. He argues that in the beginning of the interview, the interviewee should not be put in a tight spot by the interviewer. He* critiques that the interviewer should stay outside the interviewee's private sphere (see Schütze, 1977, discussed in (Girtler, 2009, p. 148). The differentiation as explained above can be useful as a researcher, for a clearer picture and guidance with regards to the methods. For many conversations in this field that, in my opinion, cannot be put in the concept of a formal narrative interview, nor an expert interview, I used Girtler's ero-epic conversation. There are various reasons for this. Girtler (2009, p. 149) argues that the need of the ero-epic conversation comes from the situation in the field. He* states that the people one works with need to accept the researcher and have a certain level of confidence. If there is no confidence, there is not as many useful results. The ero-epic conversation is therefore not only a question method, but a more delicate and not so easy way of communication (Girtler, 2009, p. 149). Especially with the problems mentioned above, it was necessary in cooperatives in Bolivia to adapt to the situation and, for example, take into account the women*'s personal space, respect hierarchies and not insist that the women* stopped working to talk to me. I rather spent time with them while they were working, helping with small tasks in their workplace.

The questions of ero-epic conversations follow from the situation (Girtler, 2009, pp. 149–150). As there was not much information available in form of literature, it helped to find out more about the women*'s realities of life by going in open and see

what happens. This was especially true in the beginning of the research process when approaching the cooperatives. An ero-epic conversation therefore does not start with a question, but with a conversation about the researcher's work, their intentions and the appearance that the researcher is learning too (Girtler, 2009, pp. 151–1552). In my case, I told the women* about my thesis and why I wanted to learn more about women* in cooperatives (see the chapter Research Interest) as well as my role as a worker of an NGO. I highlighted the role of the 'Make ICT Fair' project and its objective to learn more about the sector, the people and in which way there could be an improvement of their situation, for instance, by creating more transparency and the respect of all human rights in exchange for a mineral price that ensures a decent life.

In both the narrative interview and the ero-epic conversation, it was difficult to generate a situation in which the interviewee talks openly and candidly. This might have been because they did not see why their situation is relevant or worth telling. For the narrative interviews I had a guideline as they were semi-structured; for the ero-epic conversations, I only had notes with topics that I had an interest in. I did not always use these notes to the same extent for each interview, but depending on the situation. During the conversations and interviews, the women*'s answers usually became more in depth and extensive as the women* got to know me better and this is when they started to tell me more about their life and work without having to ask specific questions.

I had to adapt the method to the situation on site in Bolivia. I used many more ero-epic conversations than I had planned. Furthermore, I do not have transcripts of some interviews as the working situation and the confidence-building moments did not allow me to record some conversations.

While the methods for the data collection used were expert interviews, narrative interviews and ero-epic conversations, the method I used for the analysis of data is content analysis using Mayring's analytical framework (2016).

For the interviews I could record, I firstly used literal transcription, i.e. writing down what was said in the interview. I will use the translation to normal written English for the protocol (Mayring, 2016, p. 91). This means that the dialects will not be written down literally. However, I intend to change as little as possible and only do so for better understanding. I will follow Mayring's (2016, p. 91) approach to comment in situations when necessary, e.g. indicating a pause or laughter at certain moments of the

interview. Whether this detailed information it is important to the situation or not is up to my interpretation as an author and interviewer, which I will do carefully.

The main idea of the content analysis is “to analyze texts systematically by working on the material step by step with category systems developed on the material and guided by theory” (Mayring, 2016, p. 114). For the analysis of the first part of the empirical research (women* working outside the mines), the data collection was done using ero-epic conversations. I used an inductive analysis and thus had previously determined categories that I wanted to talk about (Mayring, 2016, pp. 115–117). In the analysis, I used these categories and, if necessary, added some. For the second part of the field research (women* working inside the mine), I used interviews as the method and thus, have transcriptions of the conversations for my analysis. Even though I had my interview guide with some pre-defined literature which was based on the theory, I used a deductive method for the categories according to Mayring (2016).

The translations from Spanish to English were made by me. When citing experts, I translated directly into English, without providing the original text. For citations of mining women*, of primary or secondary research, I left the original text while putting the translation in the footnote.

3. Literature review

3.1. Bolivia and the mining sector

Since the 16th century, the economy of the South American country Bolivia has been characterized by the extraction and export of raw materials. Until the 19th century, mainly silver was mined, whereby in the 19th and 20th centuries the economy was based on silver, tin and saltpetre, and somewhat later on rubber exports (Küblböck, Radhuber, & Huamán Rodriguez, 2016, p. 16). In 2017, natural gas accounted for 32% of the exports, followed by 17% zinc ore and 13% gold (OEC). In total, Bolivia exported 8.08 billion USD in 2017 and imported 9.4 billion USD. Cars (5.7%) and refined petroleum products (4.4%) accounted for the largest share of imports. Bolivia's gross domestic product amounted to 37.5 billion in 2017 USD and per capita to 7,560 USD (OEC). Not only the country itself, with three large regions -- Altiplano, Yungas and Llanos – Bolivia’s unique flora and fauna, but also the people of Bolivia are very

diverse. Among the 10.6 million inhabitants, 37 recognized indigenous groups live in the country.

Michard (2008, pp. 7–8) writes in her extensive analysis that although mining in Bolivia has declined sharply compared to the 1970s, it is still an important sector for the country today. It remains important because around 28% of exports are mining products (“Bolivia - Mining,” 2019a) but also because the miners represent a strong social force in the country (Michard, 2008, p. 7). The mining sector provides 70,000 direct jobs and 300,000 indirect jobs. About 90% of this, i.e. around 60,000 people in Bolivia, work in cooperatives. A cooperative is defined as

> “an autonomous association of people who have come together voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and demographically managed enterprise" (Michard, 2008, p. 7).

The reason why so many people work in cooperatives lies in the mining sector’s history (Michard, 2008, p. 8). In the nineteenth century, silver was the reason Bolivia could call itself a mining country, followed by tin from 1900 to 1986. Approximately, from then on, gold, silver, lead, tin and zinc have been the main minerals extracted. The cooperative mining has its roots in the beginning of the 1930s, during the tin cycle. Between 1926 and 1931, the tin price fell by 59%. Additionally, technology improvements made silver extraction more attractive. More labor was demanded which led to many people depending on mining as their main source of income. In times of high world market mineral prices, surplus labor led to the creation of labor unions, what is today know as cooperatives. Bolivia’s first cooperative *Cooperativa Kajchas Libres* was created (FENCOMIN, 2001, cited in (Poveda, 2014, pp. 5–7).

After the revolution in 1952, the mining sector was nationalized and the Bolivian Mining Company (COMIBOL) was founded (Küblböck et al., 2016, p. 16). Over the following year, laws were passed that first obliged and then permitted COMIBOL to employ a large number of workers, even ill or pensioned ones. Between 1952 and 1980, tin prices were rising steadily, between 1969 and 1989 even by +350%. However, as productivity levels could not be increased, the surplus of 8.500 employed workers (while having 24.000 in total) led to increased production costs and a crisis of COMIBOL (Poveda, 2014, pp. 15–16).

From 1955 onwards, liberalization took place and COMIBOL slid into a crisis which reached its peak in 1985. From then on, the company gradually reduced its activities

and laid off thousands of workers (Michard, 2008, p. 12). At the same time, COMIBOL outsourced many activities to cooperatives between 1956 and 1980, which led to an increased incorporation of such (Poveda, 2014, p. 18). Additionally, the mining sector was increasingly privatized in the 1980s and 1990s, and in 1997 a law was finally ratified stating that COMIBOL must no longer be involved in direct mining and production processes. COMIBOL was only allowed to administer and award concessions (Küblböck et al., 2016, p. 16). Many of the 20,000 workers that had been left behind by COMIBOL did not find alternative jobs and returned to the mines in another form: they formed mining cooperatives, *cooperativas mineras*. The takeovers of the mines often happened violently because the government did not agree with the mining activities of cooperatives (Michard, 2008, p. 12). Michard (2008) stresses that the creation of cooperatives was not the result of a desire, but of a necessity to survive. In addition to the liquidation of COMIBOL, the Bolivian economy was increasingly liberalized, and prices and wages started to be determined by the market. These measures changed the sector sustainably (Küblböck et al., 2016, pp. 16–17).

Since 2009 there have again been serious changes in Bolivia's mining sector. The social movements since the 1990s led to a great deal of political change within Bolivia and in 2006 Evo Morales, founder of the party Movement for Socialism (*Movimiento al Socialismo*, MAS) became president of Bolivia. His central demands were the nationalization of the commodity sector and the change of the constitution to a plurinational state, a constitution that recognizes and supports indigenous ways of livings, including their application of political, economic and juricical understandings (Küblböck et al., 2016, p. 17). The main drivers of the movement were indigenous people and farmers. The mining sector was partially nationalized in 2006 and the plurinational state model was adopted by the constituent assembly in 2009 (Küblböck et al., 2016, p. 17). A couple of laws that have been passed since then have made the cooperatives' operating practices legal (Expert in mining, 2019). This included the law 368 which legalized 770 renting contracts in different regions. Poveda (2014) notes the relatively quick change: "In 2006, cooperatives had 47.153 hectares for extraction, while in May 2013, it was 375.073 hectares" (Poveda, 2014, p. 80). Moreover, indirect policies eased cooperatives' functioning as they did not have to pay sales tax and had a simplified selling process.

Even though many measures were taken by the MAS government for cooperatives on paper, the implementation of current laws leaves much to be improved. Since the start

of neoliberalism in the 1980s, the mining sector was influenced strongly by foreign investors, bilateral conventions and multinational companies. Neither discrimination practices or social exclusion nor poverty were resolved. Monopolies in resource extraction were prohibited but are still a reality. Poveda (2014) concludes that capitalism is still intact and the current economic structures and politics are not at all plurinational. On the contrary, the success of cooperatives depends entirely on market prices and they cannot count on saving to invest in machinery or other equipment (Poveda, 2014, pp. 82–90).

3.2. Cooperatives in Bolivia

Cooperatives have been working in the former COMIBOL mines. While the best mines are rented to private investors or multinational companies, the mines that are least profitable are rented to cooperatives. In 2014, cooperatives were accountable for 30% of the country's mineral exports. Even though silver and zinc are the main minerals extracted by cooperatives, they also extract other minerals as for example wolfram, limestone or tantalite. The gold sector is a specific one – cooperatives extracting gold are responsible for 72% of the national production (Francescone & Díaz, 2014, pp. 1–4). The gold sector has very different characteristics than the mineral complex (silver, lead, zinc) one or the tin one (Michard, 2008, pp. 9–10). Thus, this research does not focus on gold extraction.

As one of the strongest and most organized social forces in the country, cooperatives in Bolivia play an important role (Michard, 2008, p. 12). The number of cooperatives has been increasing after 1985, when COMIBOL was going through a severe crisis. With the decree DF21060 and the liquidation of COMIBOL, mine activities changed fundamentally. Many mines that had previously been managed by the national mining company COMIBOL were rented to cooperatives (Francescone & Díaz, 2014, p. 1).

Mining activity in cooperatives usually starts by the passing on mining spaces to members of the family. That means, often the daughters and sons of families who work in mines also began their careers in a mine. One of the reasons for this is the lack of alternative job opportunities. Some families work both in mines and as well as in agriculture. But in some areas of Bolivia, the soil is so contaminated that farming is not possible. Particularly young people view mining as a way, or the only way, of earning money and they are often prepared to sacrifice their health or even life for it (Michard,

2008, p. 13). Workers in the cooperative are usually also shareholders of the mine, so-called *socios*/*socias*[3]. To become part of the cooperative, everyone must pay a certain amount of money; after this payment, they are allowed to enter the mine and start extracting minerals (Michard, 2008, pp. 16–17).

Cooperatives are democratically organized, which means that each associate has one vote, which they can -- or more accurately, *must* -- cast in the election. Participation in the election is compulsory and decides on the board and the administrative management. The leadership position is filled anew every year, which is criticized by experts, because one year is not seen as long enough to get used to the role and to do a good job. The board of directors consists of a supervisory board and a group of safety officers. Depending on their size, some cooperatives have different departments with different responsibilities (Michard, 2008, pp. 17–19).

There are different helpers who have different rights and responsibilities or statuses depending on the duration of the activity. Cooperatives are very diverse, so their structure is difficult to generalize. Some cooperatives consist exclusively of partners who work in the mines, others of partners who employ assistants that work for or with them in the mines (Michard, 2008, p. 13). The number of partners is directly related to the raw material prices. If the price is low, there are also fewer partners. On top of that, whether more partners are accepted into a cooperative or not also depends on available space for extraction. If the mine is full, no further persons can be accepted. To become part of a mine, certain conditions must be met: there must be a birth certificate and a confirmation that the military service must be completed. After that the procedure differs from mine to mine, in some cases part-time work must be done first or a person has to work for undefined time as a helper of an associate and becomes associate him*/her*self at an unknown moment. As soon as a person is a shareholder of the mine, they have the right to enter the mine freely and look for an unoccupied place to extract minerals (Michard, 2008, p. 13). Most of the cooperatives are small mines, with few partners. A few consist of a large number of people. The large mines can be compared to companies because they are de facto organized as such (Francescone & Díaz, 2014, p. 6).

[3] Engl. associates

Not only do people work in the mines, the people who work outside the mines, among them a large number of women*, also play an important role. Drivers, secretaries, security personnel, cooks and many other positions fulfill important tasks. These persons are usually not partners, but employees who receive a monthly salary (Michard, 2008, pp. 21–23).

3.3. Mining women* in literature

Literature on women* in cooperative mining in Bolivia was hardly accessible from my location in Austria. There were three texts that I found prior to my departure to Bolivia, a book called *The Invisible Work of Mining Women* published by CEPROMIN[4]; an article on women* in small scale mining from Chaparro, written for CEPAL[5]; and a study by Ana María Aranibar on the socioeconomic status of women*, conducted for a project for her* own company called Cumbre de Sajama. These works indicated that women* are involved in the mining sector in different areas of work. They work as *rock-smashers*[6], *relaveras (washers)*, *guardas (guards)*, *barranquilleras* y *batidoras (washers)* (Ana María Aranibar et al., 2017; Centro de Promoción Minera, 1996; Chaparro Avila, 2005). The study of Ana María Aranibar et al. (2017, pp. 18–20) finds that women working as rock-smashers mostly work in Oruro and Potosí (pp. 18-20). They manually pick up discards from the mines and smash them in order to select the mineral-containing parts (Centro de Promoción Minera, 1996, p. 9). Their work is done manually and without any equipment. Women* only use their hands which – because of the lack of protection are often injured and bleeding – and/or pickaxes, shovels and hammers. The material used comes from inside the mine and consists of soil and mineral. To separate soil and minerals, the material is milled and washed. This process might be repeated to get more purity; then it is ready to be sold (Ministerio de Desarrollo Sostenible, Viceministerio de la Mujer, 2005, p. 14). *Relaveras* (or *lameras*)[7] are

[4] Centro de Promoción Minera; Engl. Mining Promotion Center

[5] Comisión Económica para América Latina y el Caribe; Engl. Economic Commission for Latin America and the Caribbean

[6] In literature always referred to as *palliris*, which is translated directly as rock-smashers, a term I intentionally do not continue to use henceforth in this thesis as it has been identified as a derogatory term towards women*. (Expert from CISEP (2019)

[7] Lavar or lamar, Engl. “to wash”

women* working in the rivers where mineral-containing waste material from traditional mines is deposited (Centro de Promoción Minera, 1996, p. 10); *guardas* (or serenas)[8] are women* guarding the entrance to the mine; and *barranquilleras* are women* working mainly in gold mines in the north of La Paz washing sand of the rivers or ponds looking for gold. *Bateadoras* means the same than *barranquillera*, but this term is used in the Santa Cruz department (Centro de Promoción Minera, 1996, p. 12). In the book *El Trabajo Invisible de la Mujer Minera Boliviana*[9], the authors of CEPROMIN additionally mention *veneristas*, women* that work in fields containing materials due to flooding, and *rescatiris*[10], who are women* who act as intermediates between rock-smashers and the main company dedicated to selling the minerals. Moreover, they list *amas de casa*[11], referring to women* in both reproductive and productive work, and *voluntarias*, women* doing a range of assisting activities in gold mining. Last, but not least, women* working as *comerciantes* meaning in the selling process and women* working in any other field, as for example cooking, buying food, washing, and other work, usually domestic, that needs to be done (Centro de Promoción Minera, 1996, pp. 12–13). Interestingly, in this book, women* working inside the mines are not mentioned. However, Ministerio de Desarrollo Sostenible, Viceministerio de la Mujer (2005, pp. 14–15) does mention this type of work. The authors state:

> "[working] inside the mine in the beginning means "making loss", (working without any production) looking for a spot to extract until detecting a vein; once found, preparing the spot to work, making the hole where to place the explosive […], lighting the wick, and fleeing quickly before the explosion of the dynamite charges. After the earth is successfully removed, it is transported to the where it is thrown to the cart and transported to the concentration center or it is refined rustically in a manual way."[12] (Ministerio de Desarrollo Sostenible, Viceministerio de la Mujer, 2005, p. 14)

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[8] Referring to "to watch" or "to guard" = guards

[9] Engl. The invisible work of mining women*

[10] From *rescatar*, Engl. "to scavange/collect"

[11] Engl. housewives

[12] Spa. "La mujer de interior mina primero "hace pérdida" (trabajar sin ninguna poduccioón) buscando un paraje para explotar hasta detector una veta; una vez encontrada, prepara el paraje para trabajar, hace el hoyo donde colocará el explosivo […], prende la mecha y huye rápidamente antes de la explosión de la carga de dinamita. Después de lograda la "carga", la transporta o "carretillea" hasta el buzón donde se echa al carro y se transporta al ingenio o se refina rústicamente de forma manual. Ministerio de Desarrollo Sostenible, Viceministerio de la Mujer (2005, p. 14)

Many women* work inside the mines doing assistance work. Women* working inside the mine have better chances to find minerals and increase their income. Even though women* have entered the mines, it does not mean that they are seen and treated on equal terms by their male coworkers. (Ministerio de Desarrollo Sostenible, Viceministerio de la Mujer, 2005, p. 15).

Women* have been working in mining in Bolivia for a long time. For example, in 1950, before the revolution of 1952, there were 4001 registered women* working in mining, showing that every tenth miner was female. In the crisis of the 1980s, women* many women* entered the sector informally. In 1993, there were 5000 rock-smashing women* registered at the National Federation of Mining Cooperatives in Bolivia (*Federación Nacional de Cooperativas Mineras de Bolivia*, FENCOMIN). After 1985, the state mines were abandoned, and women* and men started to work in cooperatives. Lunario (2005) argues that “this information shows that women* in mining had never been irrelevant, but simply not given the necessary importance” (Lunario, 2005, pp. 37–38).

In some works about mining in Bolivia, women* are mentioned, mostly as a vulnerable group. Michard (2008, pp. 56–57) mentions that 10% of associates (*socios/socias*) in the cooperatives are women*, more specifically rock-smashers. She* mentions that the fractional share of women* is because of both structural inequality and discrimination in the country. Additionally, because Bolivian miners believe that women* inside mines cause bad luck. The author further explains that women* mainly enter cooperatives when their husbands had passed away and had left a free working space. Women* in cooperatives are discriminated against on various levels as they are often given the least productive corners in terms of mineral yield, they face discrimination in the voting processes, and/or are cheated by buyers due to their illiteracy (Michard, 2008, pp. 65–66).

In other relevant literature about cooperatives, women* are either not mentioned at all or play a very small role, see Poveda’s (2014) extensive work on cooperatives, Francescone’s (2014) text, or one chapter in Absi’s (2003) book on the fertility of Mother Earth and its relations to sexuality. Statistical data does not show women* as group of interest either (Francescone & Díaz, 2014), nor is there much literature of relevant institutions publishing about mining in Bolivia. In Ana María Aranibar et al.’s (2017, 26,30) survey, it is indicated that women* work in the mining sector and are

particularly vulnerable because of their high age and their civic status being widows, single mothers or divorced. They work under unacceptable labor conditions causing damage to their health.

I strongly argue that there is too little attention paid to women* in the mining sector in Bolivia. This master thesis aims to contribute to filling this research gap, which is why part of my research trip to Bolivia was dedicated to finding existing literature, studying it and including it in this thesis.

Existing literature covers what types of work women* do and the variety of problems that comes with their work and realities of life. Before going into detail about women* working in cooperatives, it is important to note that women* are affected in various ways. There are women* directly affected because they work inside or outside the mine (Ana María Aranibar et al., 2017; Centro de Promoción Minera, 1996, 2005; Chaparro Avila, 2005) and there are women* who are affected because their husbands or other family members work in mines. Moreover, many people are affected indirectly as mining destroys their natural habitat or leaves them with poisoned land, which often had been their main source of income agriculturally.

I do not intend to prioritize some over others. However, due to time and resource limits of this research, the focus of this thesis is not about women* as wives or family members of miners. Therefore, I will only briefly touch the topic. Many women* work in the reproductive sector, taking care of children and the household. On top of the reproductive work, they help their husbands in the cooperatives, doing the same work that the female associates do, while not receiving proper income, not having social security or giving a contribution to the pension fund (Ministerio de Desarrollo Sostenible, Viceministerio de la Mujer, 2005, p. 11):

> “Trabajo en el desmonte, aunque no soy socia de la cooperativa, yo ayudo a mi esposo, igual que él yo entrego [mineral a la cooperativa], pero no podemos ser socias de la cooperativa si tenemos a nuestros esposos. Solamente la viuda puede ser socia, porque no tiene quien más le ayude”[13] (Fed. Oruro, Poopó, cited in (Ministerio de Desarrollo Sostenible, Viceministerio de la Mujer, 2005, p. 11).

[13] Engl. "I work in the discarts even though I am not an associate of the cooperative, I help my husband, just as him I hand in mineral [to the cooperative] but we cannot be associates of the cooperative if we have our husbands. Only a widow can be member, because she has no one else to help her". (Fed. Oruro, Poopó, cited in Ministerio de Desarrollo Sostenible, Viceministerio de la Mujer (2005, p. 11).

Not being able to become an official associate of the cooperative, women* become dependent on their husbands. This is problematic as women* do not have the freedom to make choices regarding their life. Additionally, if the women*'s husband dies and she* does not have enough knowledge of mining to work herself, she* does not have any income or financial stability. However, if the women* knows how to work because she* had helped her husband before, she* often becomes member of the cooperative (Michard, 2008, p. 57). Domitila Chungara, wife of a miner, wrote *Si Me Permiten Hablar*, a book that became popular as Chungara was one of the first female miner's voices to be heard internationally (Viezzer, 2005). Chungara, born in 1937 in Catavi in the Potosí department, grew up in extreme poverty and fought for the rights of mining people for all her life. She* was part of the housewive's committee and is known for leading a hunger strike in 1978 which led to the fall of the then governing dictatorship of Dánzar. In her bibliography, she* tells the story of her life: a life of poverty and extremely rough working conditions, no medical care or safety measures. With her dedication to fighting and the changes she* made, she* became a symbol for resistance movements in Bolivia (Achtenberg, 2012; Viezzer, 2005).

While housewives' roles and work is almost as equally ignored and as important, the focus of this paper is on the women who work directly inside or outside of the mines. I have elaborated on these women*'s socioeconomic status, showing them to be a particularly vulnerable group, while not categorizing them as a homogenous group. However, women* in Bolivia are still in a disadvantaged position. 45.2% of Bolivian women* so not have a proper income and if they work, their income is 47% lower than men's for doing the same work. In other words, half of the women* stay at home doing care work, women* that work the same as men* earn half as much as men do (Coordinadora de la mujer, 2019).

Realities of lives of women*

In mining culture, there is a strong belief in "*El Tío*", seen and treated like a God, who does not want women* inside mines. According to the myth, *El Tío* is jealous, having women* inside the mine makes his him angry and makes him hide the mineral veins. This is the reason, or justification, why women* (have to) work outside the mines while men* can enter (Ministerio de Desarrollo Sostenible, Viceministerio de la Mujer, 2005, p. 30). *El Tío* is represented by a clay statue mostly in the first gallery of the mine. Miners bring him coca leaves, cigarettes and alcohol to keep him satisfied. In turn, he*

is believed to protect the miners and give them ore in abundance. Not only can women* not enter the mine because *El Tío* does not want them to, but also because *Pachamama* – alias, Mother Earth – is jealous as she* only produces mineral for men. Some also use a lack of physical strength as a justification and some do not want women* to get hurt by this type of work and so they do not let them in to protect them (van Hoecke, 2007, p. 70).

In the mining context, Pachamama is not only gendered but sexualized too. Many parallels can be seen in the attitude of men* towards both land and women*, especially in the language used: "[L]os mineros […] levantan la falda de la Pachamama, se convierten en sus amantes y la desfloran con sus herramientas"[14]; "Mamita mía, ahorita te voy a perforar, te voy a introducir, Pachamama, ahorita te daré, si no me das no te daré"[15]; and "Hay que hablarle como una mujer"[16] are just some of many similar quotes from interviews with miners that Pascale Absi cites in his book (2003, pp. 287–288). They further told him that they sometimes bring their women* to the mine to have sex with them "in the name of *El Tío*" (Absi, 2003, p. 289). In all the miners' sayings, opinions, and quotes, women* are objectified to a great extent. Women* are not seen as humans, they are treated like Mother Earth, both have to be seduced and extracted. Absi (2003, pp. 300–301)writes about two widows who entered an abandoned mine to extract minerals. They were not seen as "real" women*, but as homosexuals, because otherwise - it was believed - they would not have been able to find or mine any minerals (Absi, 2003, pp. 300–301).

Several culturally and socially aspects are reality for women and widely accepted in the Bolivian (mining) culture. van Hoecke (2007, pp. 74–75) presents testimonies telling stories about men* coming home drunk and aggressive, beating their female partners. As one women* told van Hoecke:

[14] Engl. "The miners raise the skirt of the Pachamama, become its lovers and deflower it with their tools."

[15] Engl. *Mamita mía*, now I'm going to drill you, I'm going to introduce [into] you, Pachamama, now I'll give you, if you don't give me, I won't give you.

[16] Engl. "You have to talk to her like a woman*"

> ""[…] Ahora lo que he hecho es cargarme a mis hijos, cuando llega borracho, y me salgo a la calle, espero hasta las 12 h. ó las 2 de la mañana, cuando pienso que ya está dormido vuelvo y me duermo…"[17] (van Hoecke, 2007, p. 74).

Other women* got married and had to stop studying even though their husband previously had promised that they could continue studying after the marriage. The husband told her only lazy women* would go out, they would go to reunions and complain about their husbands. One woman tells of her abuse by her husband:

> "… tuve que aguantar muchas cosas; cuando estuve embarazada me pateaba en el estómago sin miedo ni consideración; trataba de defenderme, pero a veces no se podía porque era más fuerte. Me enteré que tenía otra mujer por eso me trataba mal…"[18] (van Hoecke, 2007, p. 75).

Another woman*'s daughter explained:

> "... mi papa es muy malo, a mi mama le pega mucho; muchas veces le ha sacado al patio desnuda y ahí le ha pegado en frío y en lluvia; una vez le ha llevado al cementerio, te voy a matar le decía, cuando le defendíamos igual nos pegaba a nosotras…"[19] (van Hoecke, 2007, p. 76).

Women* claimed that capacity building activities helped them to handle this situation better. They wish to continue receiving these trainings (van Hoecke, 2007, p. 76). In a publication called "Political Agenda of Women" (*Agenda Política De Las Mujeres*), numbers showed that in 2017, there were 109 (reported) feminicides in Bolivia. Furthermore, only 36% of all cases of violence against women* result in appropriate sentences, indicating a high level of impunity. Around 4,800 women* suffer sexual violence yearly. This problem receives too little attention. Only 0.2% of the municipality budget is dedicated to actions of prevention, raising awareness and protection of women* (Coordinadora de la mujer, 2019, p. 11).

Literature further indicates that women* in gold mining cooperatives are suffering many different forms of abuse. Many testimonies told of physical abuse, which is often related

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[17] Engl. "What I do now when he comes home drunk is is take my kids and leave the house. I wait until 12 or 2 am and when I think he is sleeping, I return and go to sleep" van Hoecke (2007, p. 74).

18 Engl. " I was pregnant and he beat me in my stomach without fear or consideration. I wanted to defend myself, but he was stronger. I noticed that he had had another women, why he treated me badly" van Hoecke (2007, p. 75).

[19] Engl. "... my dad is bad, he beats my mom a lot; often he has taken her out to the yard naked and has beaten her up in the cold and rain; one time he took her to the cemetery, I will kill you, he told her; and when we wanted to defend her, he would also beat us…"

to alcohol consumption on holidays or weekends. Sexual violence is frequent both in and outside the work place. Alcohol consumption in cooperatives increase the risk of violent attacks against women*. These attacks are forms of physical, verbal or sexual abuses. One of many women* told that she* was violated by several cooperative members. She* not only suffered this attack but was also expelled from her cooperative as a result. Her perpetrators did not face any consequences, they even increased their "ego and macho status", according to the women* (need a reference here). At the same time, she* and her children were abandoned. Such experiences are frequent in cooperatives, where the hardest punishment is foreseen for the weakest members (Centro de Promoción Minera, 1996, pp. 84–85).

Regarding their living situation, 41.4% of mining women* in Oruro have their own house, 24.1% rent and 24.1% rent in exchange for services (literature, e.g. Michard (2008) indicates that many miners rent former COMIBOL housing through their cooperative, which means that the cooperative pays and the associates are discounted a fraction of their income). Only half of all cooperative mining women* on national level have access to running water at home, 28% access only a public fountain or water pump. It stands out that nearly all other Bolivian women*, both in corporate mining and women* working in other fields, have running water at home (100% and 93% respectively). Only 44% of cooperative associates have a bathroom or latrine; 97% have electricity (Ana María Aranibar et al., 2017, pp. 40–51).

Mining women* are discriminated at their work, but also outside their work environments. They are considered "dirty" and "careless" in their society (Centro de Promoción Minera, 2005, p. 83). According to CEPROMIN, rock-smashing women* are also accused of not caring sufficiently for their children. They are being humiliated and suffer from (verbal) violence by members of the society. CEPROMIN states that women* are not seen as powerful humans who are able to take decisions by Bolivian society, but they are rather put in a victim-role because their husbands died or left them. They are viewed as they only work in mines as their circumstances do not leave them other options. The mentality of both the women* and the society towards mining women* is "the single mom, obligated to work to support her family, even if this means becoming a rock-smasher" (Centro de Promoción Minera, 1996, p. 83).

The term *palliri*, which is used for what I call rock-smashing women*, originated from the indigenous Quechua language (Centro de Promoción Minera, 2005, pp. 84–86).

This term represents the situation above and manifests inequality, marginalization and ethnic discrimination of the women*.

Working conditions

The working conditions of miners in Bolivia are very precarious. Women* often work ten or more hours in one or various shifts (Centro de Promoción Minera, 1996, pp. 34–35). Ana María Aranibar et al. (2017, pp. 61–62) found that 46% of all cooperative mining women* work more than eight hours daily and 53% work five to six days, 38% seven days per week. Often, their work is not considered work, but part of the domestic responsibilities (Ministerio de Desarrollo Sostenible, Viceministerio de la Mujer, 2005, p. 24). Women* not only do the productive work, but also reproductive work, i.e. cooking, cleaning, and child-care. Their day starts at five or six in the morning and ends at eleven or twelve o'clock at night. In the morning, food has to be prepared, the house has to be cleaned and children sent to school. Work in the cooperative starts around ten o'clock, often after a long walk to the workplace, and lasts for around ten hours. After going back home, childcare and other household responsibilities continue (Ministerio de Desarrollo Sostenible, Viceministerio de la Mujer, 2005, pp. 24–25).

Apart from their productive work, literature indicates that women* also do most reproductive work. Women* are in charge of 68% of child care, 62% of home repairs, 61% of cooking, 14% of clothes washing and 10% of cleaning, while the rest is mainly done by daughters, sons and "others" (Ana María Aranibar et al., 2017, p. 68).

Women* working in mining are not very well educated, in the Oruro department; in the study by Ana María Aranibar et al. (2017), 72.1% of all 150 respondents had no initial or incomplete primary education while only 27.9% finished primary education or higher (Ana María Aranibar et al., 2017, p. 38). In all departments in Bolivia, the numbers are 56% and 44% respectively indicating that in other sectors, as for example gold-mining and in state or company mines, levels of education are higher. In Oruro, 38% of mining women* are illiteral, while the fraction on national levels is 25% (Ana María Aranibar et al., 2017, p. 36)

Not only are women* not well educated, but they also work without any machinery. Work is mainly done manually (Centro de Promoción Minera, 1996, pp. 34–35). Poveda (2014) mentions two ways of work: either completely manually or using a drill (Poveda, 2014, pp. 31–34). For the latter, due to this type of work, it is necessary to

work in teams as one person has to drill, another one selects the mineral and one extracts it. Many side works as for example the concentration of minerals are shared by the workers. The tools are property of the team. Lunario (2005, p. 24) states that women* can generally not count on the help of their associate colleagues.

In her study, Aranibar (2017, p. 65) found that women* in cooperatives work with very little measures of protection. Thirteen per cent do not use any kind of protection, only around half use proper work clothes (48%) and breathing masks (47%). Numbers show that women* working in private companies have a much higher level of industrial security, while women* working in individual mines have practically none. Little industrial security and a lack of hygiene lead to accidents and illness. According to Centro de Promoción Minera's (2005, pp. 42–44) book, most women* did not know the term industrial security. At the same time, most of them had experienced accidents. Accidents occur at work, but also at home, for example because of inappropriate handling or storage of chemicals. Accidents also happen because of lifting weights incorrectly, a lack of protection against humidity and unhealthy water, or falling rocks and badly positioned feet at the moment of loading or unloading trucks with material. Moreover, the bad construction or condition of stairs and galleries inside the mine lead to many accidents. This results from little education and training and a lack of financial resources. CEPROMIN mentions that there is a high demand of capacity building, e.g. on the women's rights, communication and ways to demand them, but no one has engaged in continuously providing them. van Hoecke (2007, p. 55) writes:

> "Accidents in the interior of a mine are generally fatal. Gas, landslides, unexpected explosions of dynamite and falls, lack of signaling, lack of maintenance of machines, inexperience of young workers, disputes for access to the best veins, lack of discipline, and control of leaders or, recklessness of the same, cause the death of many workers."

A lack of security leads to accidents, but also working at very low temperatures, i.e. below zero degrees, in dry and windy areas in high altitudes, make women* (and men*) in mining sick (Centro de Promoción Minera, 2005, p. 44). Oruro lies at 3719 meters above sea level and its average temperature is eight degrees Celsius, it does not get much hotter or colder (climate-data.org, 2019). However, inside the mine it can get up to 40 degrees, combined with a lack of fresh air. Miners use a lot of liquid and salt mineral and do not drink sufficient water as they do not know better (van Hoecke, 2007, p. 54). The author continues:

> “The mining work demands an intense physical work, is developed in places with little oxygen in conditions of terrifying heat, which causes discomfort to the workers. Dizziness until fainting, ringing of ears, nausea, blurred vision, general weakness vertigo, palpitations, difficulty to breathe, edema of limbs, cough and expectoration. In addition, prolonged work for years in places with poor air circulation leads to irreversible brain damage, and the hypoxia to which they are suffering produces an exaggerated increase in the production of red blood cells that leads to complications of hypertension, heart failure, cerebral embolism, etc.” (van Hoecke, 2007, p. 54)

Health aspects

There are numerous health problems miners experience. Drilling is one of the working steps inside the mine. It is done in a dry way and this causes a lot of dust. Not having any air circulation, means that dust is circulating for much longer after dynamite denonates. As there is insufficient protection in forms of masks etc., miners breathe in dust which often causes silicosis and pneumoconiosis (van Hoecke, 2007, pp. 54–55).

Mineral is carried in jute bags and cooperative miners often do not have vehicles to transport them. Thus, the bags that are very heavy are carried on the workers’ backs and cause chronic backaches. Another major health problem is the mineral lead. Getting in touch with lead through air or water may cause “irritations, motor dysfunction or reduction of the intellectual coefficient” (van Hoecke, 2007, p. 55). Furthermore, toxic water containing arsenic leads to major health problems including skin cancer (van Hoecke, 2007, pp. 53–56).

van Hoecke (2007, pp. 56–66) reveals numerous illnesses that are caused by mining. Working in both humid places and cold, windy and dry ones as well as working with freezing water triggers illnesses even more. Poor nutrition, thus few body defense mechanisms, and alcohol consumption worsens the situation for women*. Women* have frequent respiratory illnesses, as for example bronchitis. Illnesses with relation to the back, headaches and stomach problems were reported by women*. For women* working in mines that are at 4,000 meters and higher, the high number of red blood cells cause for example heavy nose bleedings, headaches, high blood pressure and overall tiredness. Women* working outside the mines often reported rheumatism due to their work barefoot in the cold water of the river.

Not only are mining women* exposed to illnesses directly at their workplace, but also at home and in their environment. Rivers in Bolivia are often contaminated because of mining activities. Water that comes from mines is toxic and women* wash their clothes

in the river. When drying, metal parts stay stuck to the clothes causing illnesses. As mining waste is not deposited properly, this also causes problems. It is toxic and smells, which leads to many colds (van Hoecke, 2007, pp. 56–62).

Air contamination represents another problem related to dust created by mining activity. A lack of ventilation of air inside the mine means women* breathe in dust, which makes them ill. Rock-smashing women* work at the exits of the mine, where discards are deposited. A large amount of dust is created there too. Children often breath in dust too as they help their mothers (van Hoecke, 2007, p. 65).

Numbers show that 31% of all illnesses are respiratory ones and 28% are problems with the stomach. In cold regions, respiratory illnesses are even more frequent; they represent 69% of illnesses in the department of Oruro. In this department, respiratory illnesses also result in 41.4% of deaths. 17.2% of deaths of women* were caused by stomach diseases (Ana María Aranibar et al., 2017, pp. 54–55).

Health assistance in the mining sector in state mines was good until 1985 because there were professionals in hospitals and aid stations were well equipped. However, nowadays, miners contribute to the national social insurance, *Caja Nacional de Salud*. Not only is the service very poor, but many workers work as assistants and do not contribute to the *Caja*, therefore they are also not insured (van Hoecke, 2007, p. 53). In Aranibar's study, she* found that 78% of women* in cooperatives have health insurance. However, not even half (48%) of women* working in cooperatives have access to public hospitals, which might be because of large travel distances. Additionally, the study shows that only 67% of women* working in cooperatives have a pension insurance (Ana María Aranibar et al., 2017, pp. 65–66).

The pension insurance pays the pension on basis of what was paid by the person, i.e. a fraction of their production. Women* often earn less than men* and therefore, pay less. If a child is born, women* are the ones to stay home, they do not work and consequently not pay for their pension fund during this time. There is no pension age difference between men and women*, thus, women* get less pension. The life expectance of women* is higher than that of men* meaning that women* end up with too little money to cover their expenses. With their very low monthly income, women* cannot save money for their pension. To save money would mean not to eat some days. They do not live thinking about the future as they do not know if there is one. This is why they do not save and prefer that their children have something to eat daily

(Ministerio de Desarrollo Sostenible, Viceministerio de la Mujer, 2005, p. 21). A testimony women* tells:

> "Esta semana nos hemos enterado que las AFPs están empezando calcular como si nuestra expectativa fuera hasta los sesenta y cinco años, nosotros los mineros nunca vamos a vivir hasta los sesenta y cinco años. Si hacemos una estadística de estos últimos tres años todos mis compañeros que han fallecido en los accidentes de trabajo, o por enfermedad profesional, como la silicosis, no han sobrepasado los cuarenta y siete años. El cooperativista minero no tiene una expectativa de vida de sesenta cinco años, como están calculando."[20] (Ministerio de Desarrollo Sostenible, Viceministerio de la Mujer, 2005, p. 22)"

Another aspect the women* interviewed for this publication is the bureaucracy of the pension system. It often takes them a long time to get the money. They suffer from bad treatment by officials, many travels to and from the administration office while they are trying to survive without any help. This is why many are forced to continue to work even when "officially" in pension. Many women* enter the cooperative when they lose their husbands because of an accident. At this point, they would not contribute sufficiently for receiving a pension. Therefore, they pay AFPs as widows in their husbands' names. However, this means they do not have proper rights with regard to this manner. Other women* do not even think about receiving funds as they do not work formally (Ministerio de Desarrollo Sostenible, Viceministerio de la Mujer, 2005, p. 22).

Not related to mining, but to women* in Bolivia in general, statistics show that maternal mortality in Bolivia is one of the highest among Latin American countries. Abortion represents 13% of deaths in Bolivia. There are at least 185 clandestine abortions per day. 3 out of 10 women* are mothers before 19 years and 2 out of 10 women* do not have access to sexual or reproductive health care services (Coordinadora de la mujer, 2019, p. 14).

Commercialization

Cooperatives often work without any technical consult which is one of the reasons why there is so little planning of the work (processes). The same is true for

[20] Engl. "This week we learned that the AFPs are beginning to calculate as if our expectation were up to the age of sixty-five, we miners are never going to live until sixty-five. If we made a statistic for the last three years, all my colleagues who died in work-related accidents, or by occupational disease, such as silicosis, have not exceeded forty-seven years of age. The miner does not have a life expectancy of sixty-five years as they are calculating." Ministerio de Desarrollo Sostenible, Viceministerio de la Mujer (2005, p. 22)

commercialization, lacking organization and control. Lunario (2005) researched rock-smashing women and found they were often cheated by buyers, most likely due to the lack of control and processes in this area. The women* receive a low income because they are dependent on the mineral prices, the market and buyers (Lunario, 2005, p. 20). Ana María Aranibar et al. (2017, p. 63) state that more than half of all women* in cooperatives (55%), earn 1805 Bolivianos, i.e. minimum wage, or less. This is equivalent to 234 euros ("Exchange rate (InforEuro)," 2019b). 32% of cooperative mining women* earn 1,805-3,610 BOL and only 13% above that. Especially with regard to mining of the mineral complex (silver, zinc, lead), most women* in cooperatives have earnings at or below minimum wage. For tin, women* generally do not earn more than 3,610 BOL.

According to Centro de Promoción Minera (1996, p. 61), rock-smashing women* sell their production to private commercialists. They work in a liberal market where the price is not fixed, while before, "Banco Minero de Bolivia"[21] and COMIBOL were in charge of buying minerals. The author confirms that there is no control and that these companies have the power to decide the prices themselves and can discount from the production. Cooperatives become dependent on the commercialists as they receive machineries or credits from them. They even sometimes buy TVs or other private things for workers. Commercialists also try to be on good terms with the leaders of the cooperatives. Some cooperatives do not sell to a commercialist company, but to Vinto, the national lead smelter. Vinto offers bonuses to the workers for a high ore grade or high amounts of mineral. Generally, women*'s work does not apply to these conditions, therefore, women* do not receive any bonuses (Centro de Promoción Minera, 1996, p. 62).

Before selling, women* calculate the selling price based on the weight and ore grade of the mineral. They listen to the daily radio which announces the price and then they discount a fraction in case there was an error in their calculation. When selling it to the commercialist company, 50% of their production can easily be discounted by the buyer. They also take advantage of illiterate women* who do not understand what is said on the documents (Centro de Promoción Minera, 1996, p. 62).

[21] Engl. "Mining Bank of Bolivia"

There is another form of commercialization through "*rescatitis*", who they can sell to for a lower price (Centro de Promoción Minera, 2005, p. 62). *Rescatiris* work close to or in the cooperative and pay them immediately. They do not have to organize and pay transportation, which is an advantage, but comes with a lower income.

Many women* work as part of working teams, so-called "*cuadrillas*". They usually work inside the mine. Women* are often disadvantaged as the income of the *cuadrilla* is not distributed equally among all team members. Women* are accused of working less than men* which is their justification for giving them less money. Additionally, if a woman* works alone and finds a good vein, they frequently take away her working spot (Ministerio de Desarrollo Sostenible, Viceministerio de la Mujer, 2005).

4. Field research

Along my theoretical considerations, the focus of this field research was the women*'s daily lives. As the extracting processes of tin and the mineral complex zinc-lead-silver are very different, so are the cooperatives working in these fields. Thus, I structured my field research into women* working inside and women* working outside the mines. Ulloa (2016, p. 127) refers to "practices of the women's daily lives", which I adapted appropriately for this research. Thus, after introducing the work in- and outside, the areas of women*'s daily lives were defined as "the work in the cooperative", "the working steps", "the working conditions", "the income situation and selling process" as well as "health aspects". In case of the work inside the mines, there are two additonal categories: "*el Tío"* and "the role of women in the cooperative". Adding these two categories is necessary as the dynamics in the cooperative are different in cooperative where women* work closely together with men* inside the mine.

By lying the research focus on the daily lives, I study two more aspects: if and how women* are disproportionally disadvantaged and how power relations are structured. Jenkins (2014, p. 10) argues that mining has gendered impacts that leave women* in an unfavorable position in comparison to the men*'s. I want to find out whether this is true and if yes, how it is expressed in the aspects of the women's lives mentioned above. The other aspect is the structure of power relations in the women*'s lives. Lugones (2010, p. 754) states that the coloniality of gender is an exercise of power, which influences women* in their daily lives including their bodies or their work. These two aspects will be studies parallely to the women's daily lives and thus contribute to

the lack of research about women*, their role in mining and their daily lives (Jenkins, 2014; Ulloa, 2016).

Before my trip to Bolivia, limited literature did not allow me to decide on cases that will be examined in the beforehand. Women* are involved in different areas of work and it was not clear from the distance which would be the most relevant. There was rarely data on the number of women* working in and around Oruro nor was there information on what exactly they do. Therefore, I started my research in Bolivia interviewing experts from different fields. I talked to non-government organizations (NGOs) who work with mining women* as well as research centers and relevant companies in Oruro, La Paz and Cochabamba.

In one of my first interviews, which was with Jorge Campanini, an expert on mining who works at the research institute the Center of Documentation and Information Bolivia (Centro de Documentación y Información Bolivia, CEDIB) in Cochabamba, he* stated that he* had visited around 70% of all cooperatives in Oruro. He* found them to be largely organized like companies. According to him*, the cooperative movement based on community, which was the root of most cooperatives' existence, does not exist anymore. There are some exceptions, but he* stated 80% to be of a rather company-like character (Campanini, 2019). Furthermore, in cooperatives, there are hardly any formalities, from the extraction to the selling of minerals, and there is no control from the government whatsoever. Women* work in many different areas in mining, however, there are two main groups that can be distinguished, the work inside the mine and the work outside the mine. Many cooperatives do not permit women* to enter mines because of various reasons, as for example the belief that they cause bad luck (Campanini, 2019).

Another expert in mining from Radio Pio XII Siglo XX, who told me she* had met and worked with Domitila Chungaras, the famous woman* activist who brought down the dictatorship government in 1978 (Achtenberg, 2012). We met in Llallagua, a city that belongs to the department of Potosí but is close to Oruro. It was an option to include women* working in that area too. However, as their main spoken language is Quechua, it would have been difficult to get information because of the language barrier and a translator would have been necessary. There are also mining women* working in Siglo XX, but there are not many (Expert from Radio Pio XII Siglo XX, 2019).

Mohanty (1984, p. 345) argues that categories need to be created from *within* the local context. Women*'s work and life realities differ from region to region and even from cooperative to cooperative. Therefore, I visited many different cooperatives, out of which I selected two to be the focus of this research. Seeing many different cooperatives helped me to get a broader picture of the women* working in cooperatives. I could identify two main categories of cooperatives where women* work – the ones where women* are permitted to work inside mines and the ones where they work outside. In the department of Oruro, women* working outside the mine work mainly as *relaveras* or also called *lameras* (Mining representative from Federación Departamental de Cooperativas Mineras, 2019). They extract tin by washing the mineral out of the rocks. Many women* also work as rock-smashers. Rock-smashers and also women* who work inside the mines extract the mineral complex lead, silver and zinc (Expert from CISEP, 2019).

4.1. Cases

Women* in Llallagua, Siglo XX, mainly speak Quechua. In Oruro, they speak Spanish (Expert from Radio Pio XII Siglo XX, 2019). This is one of the reasons why I laid my research focus on the latter. In Oruro, there are different types of cooperatives. The number of cooperatives varied highly, from 45 to 84 with a total number of associates of about 7,000 (Expert from CISEP, 2019; Mining representative from Federación Departamental de Cooperativas Mineras, 2019) out of which 120-130 are officially female associates at the moment of research (Mining representative from Federación Departamental de Cooperativas Mineras, 2019). We were handed out a list with names and representatives from the cooperatives. Colleagues from CISEP, an NGO who works with mining women*, told us that the number of cooperatives relates to the mineral price. If there is a higher price, there are more cooperatives and thus more women* working. Likewise, if the price is low, less people work in mining (Expert from CISEP, 2019). Therefore, the number of cooperatives varies even within the short period of one year. This explains why we had found such different results on the number of cooperatives in the initial stages of research (Dateas; Red Pio XII). We picked some cooperatives which we wanted to examine closely. Therefore, we picked very different ones in terms of organization, history, people, and functioning in order to get a good overview of the cooperatives. There are several cooperatives that are close to the city of Oruro, then there are the three small cooperatives that are more remote,

Japo, Morococala and Santa Fé. We also visited the cooperative El Porvenir in Poopó which is the biggest cooperative in the department of Oruro (Mining representative from Federación Departamental de Cooperativas Mineras, 2019) and the two cooperatives in the town of Machacamarca called Puente Grande and Machacamarca.

Figure 2: cooperatives visited in Oruro, maps.google.com

After talking to experts and several cooperative miners and a tourist tour through abandoned mines in Oruro, I realized that the mines were not safe to enter. This turned out to be an issue for the implementation of this research. I did not feel safe or comfortable to enter the mine for various reasons. Not only are the mines not secure as they are supported by a wooden system from COMIBOL times (Expert from Radio Pio XII Siglo XX, 2019), but there was also no air ventilation, and the place was very dark. For the women*, working in the mines and the risk it poses is a daily reality and has become routine. From an ethical point of view, it did not feel right to enter the women*'s sphere and interview them when at the same time, I was not prepared to enter the mine. This is why in the beginning of the trip, I left open if I was going to include women* working inside the mines. In case I could still interview them being outside the mine, it was important to me to explain my reasons not to go inside. I was

open and prepared not to get much information from women* working inside the mines because of this. However, at one cooperative, which name I will not state for data security reasons, I met the women*'s representative through a miner that was friends with my colleagues, and she* was very open to talk to me. Despite my reservations, which I explained to her, she* arranged a meeting with the women* of her cooperative and they agreed to give me interviews. This enabled me to include the women* of this cooperative as one of the two cases in this thesis.

The other case relevant for this research is the cooperative Machacamarca in the town of Machacamarca around 30 kilometers from the city of Oruro. This cooperative is relevant for various reasons. Firstly, a relatively large number of women* work in the cooperative (Mining representative from Federación Departamental de Cooperativas Mineras, 2019). Secondly, the situation of the women* working in this cooperative is particularly precarious. They work outside the mines and extract mineral from material that they have to transport there before. The high costs and the low purity of mineral in this material are just some reasons for their low income and daily struggles for survival (Expert from CISEP, 2019).

In all cooperatives I visited, women* were represented by one democratically elected person. I found the system to be hierarchical, meaning that if I wanted to talk to mining women* I had to first talk to their representatives. It was a top down approach, starting at the Federación Departamental de Cooperativas Mineras (FEDECOMIN)[22] Oruro's president and the respective women*'s representative. There, we got more information about the existing cooperatives and their activities. Afterwards, we contacted the official leaders of the cooperatives as well as the women*'s representatives of the cooperatives. Because of the hierarchical system, it was not recommended to show up in the cooperatives without prior notice. It was important to respect this kind of functioning. However, it did mean that a I had to talk to a lot of people to get access to mining women* and information. This and my limited time frame represented an important limitation for my research.

As mentioned above, my focus lies on two cooperatives. However, I will also include the results found from other cooperatives if relevant. There are approximately 130

[22] Engl. Department Federation of Mining Cooperatives

women* working officially, i.e. as registered associates, in cooperatives in the department of Oruro. In total, around 7,000 official associates (men* and women*) work in the department (Mining representative from Federación Departamental de Cooperativas Mineras, 2019) .

4.2. Women* in cooperatives in the department of Oruro

The non-government organization CISEP is the main NGO in Oruro that works with cooperative mining women* (Campanini, 2019). In an extensive interview, they told us about the situation of cooperatives, mining women* and its history.

In the 2000s, more and more women* began to work in cooperatives. They worked mostly as rock-smashers outside the mines. In 2005, the living situation of many people was precarious, and women* started to demand to work inside the mines as well. The general pressure and more awareness in the country for more gender equality helped some women* to start working inside the mines. Furthermore, if a women*'s husband or father had died, she* could enter the mine and take his place. The family had paid for the cooperative share – "*la ficha*" – and the women* argued with their right to keep working in the mine (Expert from CISEP, 2019).

Miners do not always work officially in cooperatives. On the contrary, we frequently heard of informal workers in cooperatives. It is not allowed by law for cooperative associates to have employees. However, it is common practice in many places to have workers, so-called "*peones*". Women* particularly often work as *peones* as they are helping their husbands and do not have a proper share in the cooperative (Expert from Radio Pio XII Siglo XX, 2019). Furthermore, the women* who are associates often cannot do much to improve their situation. "Ellas son socias, ellas son dueñas, entonces no hay a quien quejarse por ahí las agarran"[23] (Expert from Radio Pio XII Siglo XX, 2019). The belief that women* should not enter the mine is strong. According to it, the "*tío*" makes the mineral vein disappear if women* enter the mine. He gets angry and causes accidents. The miners frequently told stories of accidents and hurt

[23] Engl. "They're associates, they're owners, so there's no one to complain to, this is where they grab them." Expert from Radio Pio XII Siglo XX (2019)

people that happened after a women* had entered the mine (Expert from CISEP, 2019; Expert from Radio Pio XII Siglo XX, 2019).

Cooperatives are very distinct in their organization and values. For example, some cooperatives – we heard from some in Catavi, Potosí – work in line with the cooperative idea of community. There they have an administrative director, an accountant, and earnings are supposed to be distributed equally among all associates. However, it has been reported that women* commonly get paid less than men*, while doing the same work (Expert from Radio Pio XII Siglo XX, 2019). Campanini (2019) states that after visiting approximately 70% of all cooperatives in the department of Oruro, he* has seen that the cooperative movement has been denaturalized. According to his research findings, most cooperatives, around 80 percent, function rather as companies.

Cooperatives are a strong social force in the country. They generate 200,000 jobs, however, "out of 130,000 associates, around 70,000 work practically as slaves" (Expert in mining, 2019). This social force has an impact on the government's attitude towards cooperatives as well:

> "Para el estado es una forma de evadir la presión, por ejemplo, de la población. Entonces provoca [trabajar en] la mina y al hacer eso lo que el estado les obliga [es decir] yo como cooperativista me autogestione por mí mismo. Todo el proceso de seguro de largo plazo hasta allí llega. El Estado, luego regulaciones laborales – cero- […] lo que sucede, al final, las cooperativas son como unos empleados sin ser empleados de la comercializadoras de minerales […] que son los intermediarios […]"[24] (Expert from CISEP, 2019)

According to an expert with years of experience in the mining sector, the situation of cooperatives in Oruro is better than in other parts of the country. Moreover, they state that cooperatives only work legally if they have an environmental license. 85% of cooperatives do not have this, thus work illegally (Expert in mining, 2019).

Most women* in Oruro work in cooperatives because they do not have alternatives. Mining is the only source of income, especially in towns far from the city. The necessity to eat, to survive is the main reason to get up in the morning and work for most miners

[24] Engl. "For the government, it is a way of evading pressure, for example, from the population. Then it provokes [to work in] the mine and by doing that the government obliges them [that is to say] I, as an associate, self-manage myself. The whole long-term insurance process gets until here [and no further]. The government, labor regulations - zero [...] what happens, in the end, the cooperatives are like employees without being employees of the mineral traders [...] who are the intermediaries" Expert from CISEP (2019).

(Expert from CISEP, 2019; Expert from Radio Pio XII Siglo XX, 2019). Before, there were farmers in the region, but the land is contaminated now, and food does not grow anymore. Even women* with professions, for example nurses, cannot get jobs, so they look for alternatives to make money fast (Expert from Radio Pio XII Siglo XX, 2019).

To enter a cooperative, most women* are instructed by friends who teach them how everything works:

> "Una amiga, es la amiga, es la compañera, de inicio. Da pena también, es como algunas viudas [dicen] ¿Qué voy a hacer?, me ha dado su herencia de su ficha, soy socia. Que hago para poder trabajar, no conozco, entonces le lleva [una amiga] un mes, a veces 2 meses a conocer cómo se trabaja, además como se ve el mineral, […] ¡Son viejitas, viejitas donde crees que no veían, pero ven los minerales! Yo uso lentes, pero ella [te dice] aquí si esta [el mineral], si, golpean y encuentran el mineral[25]" (Expert from Radio Pio XII Siglo XX, 2019).

The income situation of miners is difficult. Miners must pay "AFPs", which is money discounted from their salary for the pension fund. But they do not make enough money to pay the minimum amount. (Expert from Radio Pio XII Siglo XX, 2019). "El cooperativista, el día que no trabaja no va a comer. Para su familia no tiene nada, ni vacaciones, ni nada, dependen de uno mismo"[26] (Expert from CISEP, 2019). Expert from CISEP (2019) tell us that women* mostly lose in the selling process. The marketeers and also the government take advantage of the people.

The interviewees explained the situation as follows: the associate goes to the marketeer and takes, for instance, 1,000 kilos of mineral. And the marketeer tells you, no, there is only 850 kilos. But there is not much the associates can say against them. The marketeer takes the mineral to the laboratory and when the examination is done, they can even cut the price they had agreed on. They use excuses like the purity of the mineral is not satisfactory, or there is too much humidity in the material. And if a miner does not agree, the marketeer tells you to go to a different place to sell. This

[25] Engl. "a friend, it is a friend, a companion, from the beginning. It's a shame too, some of the widows [say] what am I going to do, I have inherited his place, I'm an associate now. What do I do to be able to work, when I don't know how? So, [a friend] takes her with her for a month, sometimes 2 months to get to know the work, and also how the mineral looks, [...]. They are old ladies, old ladies where you think they do not see anymore, but they see the minerals! I wear glasses, but she [tells you] here it is [the mineral], yes, they smash it and find the mineral" Expert from Radio Pio XII Siglo XX (2019).

[26] Engl. "for the associate, the day she*he doesn't work, she*he is not going to eat. For his family, he has nothing, and no holidays and nothing, she*he depends on oneself." Expert from CISEP (2019)

means taking 850 kilos to another place and more cost for transportation and logistics. If you do so, they do not even give you the 850, but often further reduce it to 800 kilos. When they got to a different marketeer, it is the same, starting at the beginning. The marketeers have their Excel tables where they put in the data about the mineral, humidity, purity, weight and make calculations while the miners do not see what they do (Expert from CISEP, 2019).

The marketeers also try to oblige the cooperatives to sell their minerals to them. They do so by giving them a large compressor, which pumps air out of the mine. The condition is a two- or three-year long contract which ties the cooperative to the marketeer (Expert from CISEP, 2019). This causes dependent relationships between the cooperatives and the marketeers which are not favorable for the cooperatives.

Not only is the income not enough for a decent life, but also the daily working conditions are fatal. This is true not only for some cooperatives, but for all that we have examined for this research. I will go into detail in the next two chapters when talking about the particularities of each type of work.

4.3. Work outside the mine

The reason why many women* work outside the mines is mainly because men* do not permit them to enter the mine. In the department of Oruro, there are women* who work as rock-smashers in mineral-complex (zinc, silver, lead) extracting cooperatives and women* who work as *relaveras* or *lameras* in tin extracting cooperatives (Expert from CISEP, 2019).

Figure 3: Women working as a rock-smasher, breaking rocks and earth to choose mineral containing parts © Isabella Szukits, Südwind*

Women* working as *relaveras* or *lameras,* they buy the discards from mines which contains very little mineral. They then wash the tin out of the material in so-called "*budles*". It is a very long and fatiguing process and the earnings are very low (Expert

from CISEP, 2019). Before I focus on the cooperative Machacamarca, one of my cases, I will give an overview of other forms of work outside the mine. Even though this information is not as complete as the case studies, I believe it is relevant and has gotten too little attention in research.

I visited cooperatives in Japo, Morococala and Santa Fé, three cooperatives that are in towns quite isolated from the city. The towns are not well connected to Oruru and there is very little infrastructure, especially in Morococala and Santa Fé; for instance, there is no supermarket. In many houses, there are no private bathrooms, but only one public one for the whole town (personal communication, 2019). In these places, people live from the mining industry. There are no work alternatives, and if a person wants to do something different, they have to migrate somewhere else. Most miners in these cooperatives are male, there are few women*. The women* I talked to work outside the mine, as rock-smashers. In Morococala and Japo, there are women* working inside the mine too, but in Santa Fe, they are not allowed to enter (personal communication, 2019). In her book, Lunario (2005, p. 17) states that "[i]n the district Morococala, Santa Fe, Japo, Poopó and Machacamarca, there are discards accumulated over many years, which permits the necessary volume of minerals for a sustainable future of this type of work".

In the cooperative in Japo, there were three women* and in Morococala, there were eight. All the women* I talked to worked outside the mine as rock-smashers. They tell very similar stories (personal communication, 2019). They work long days, getting up very early and usually doing the housework before they leave for work. They cook in the morning and take care of their children. The interviewees state that they like the flexibility about their work. They are their own bosses, for example, if they have an emergency with their children or want to spend time with them, they can take time off (personal communication, 2019).

The women* work as miners out of a necessity, not out of choice. One women* tells that she* has another part-time job, but it does not pay enough for a living. Thus, she* works in the cooperative. In all cases, the income, with or without another job, was not enough for a dignified life. They state "pa' la comida apenas alcanza"[27] (Mining

[27] Engl. „It is barely enough for food" Mining associate 1 (personal communication, 2019)

associate 1, personal communication, 2019). The income depends on luck. If you are lucky and the earth contains mineral, you gain, if not, you lose. There was a women* who told me about her last mineral delivery. She* handed in eight tons of gross earth and it had a mineral purity of zero. She* did not earn anything that month. On the contrary, she* lost what she* had invested, time and money for transportation and helpers who moved the large amount of earth for her onto a truck (personal communication, 2019).

To enter the cooperative in Santa Fé, it is obligatory to have children. If you do not have a family, you cannot work in the cooperative (Mining associate 2, personal communication, 2019). All women* I met had children. Associates have to hand over minerals and contribute to the cooperative. If they do not, they have to leave the cooperative, thus leave their work and lose their share in the cooperative. Interviewees stated that this is one of the reasons why they have not searched for other jobs, because they fear losing their place in the cooperative (Mining associate 1, personal communication, 2019; Mining associate 2, personal communication, 2019). The women* are generally rather old in age. One cooperative member stated that most of them are over 50 or 60 years old (Mining associate 1, personal communication, 2019).

Cooperative Machacamarca

One case of this thesis is the cooperative called *Cooperativa Machacamarca* in the village of the same name. There is a relatively high share of female associates in comparison to other cooperatives and the situation of the women* is rough. These are some of the reasons I chose this cooperative to be one of the case studies. In an interview, an Expert from CISEP (2019) stated “[s]on dos cooperativas que hay en Machacamarca, y digamos, ese es el espacio más

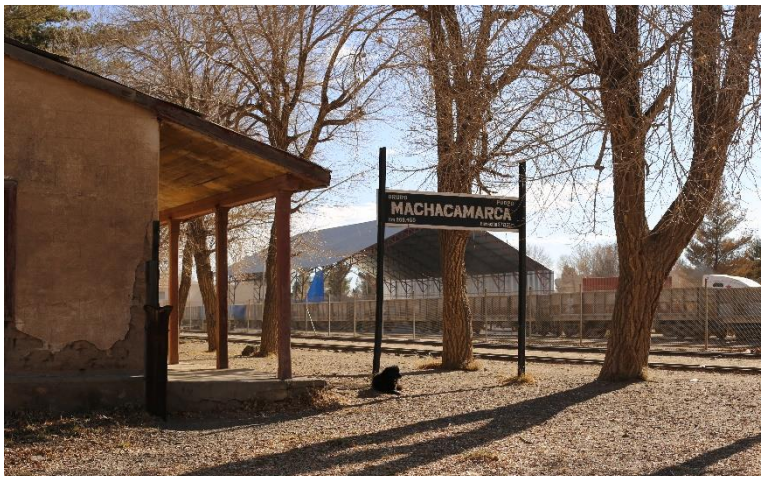

Figure 4: Train station in the village Machacamarca, © Isabella Szukits, Südwind

deprimido, es el *más* deprimido"[28] (Expert from CISEP, 2019). Women* and men* in this cooperative (and also the other one in town) work outside the mine in so-called *relaves*. They do not enter the mine, but extract tin from discards washing the mineral out of the earth (personal communication, 2019).

The cooperative was formed because of the river Huanuni. The mining company Huanuni, a mine run by the government, is located next to the river in the town of Huanuni. The company put their discards in the river, the mineral sedimented in the river and further down the river, in Machacamarca, people started to extract it (Expert from CISEP, 2019).

In almost all interviews, the women* did not talk very openly. I do not think this was because they did not want to tell me about their work, but because they could not think of information to give me that I was interested in (personal communication, 2019). Thus, I adapted to this situation and prepared some categories which I had learned from literature to be relevant. Those were (1) the cooperative itself and how to become an associate, (2) the work steps, (3) working conditions, (4) the income situation including the selling process and (5) the health aspects of their profession. With these categories I tried to draw a picture of the women*'s daily life. This most probably is not the same for all women* and I do not intend to generalize it to all mining women* of the area. However, there were many parallels between the women*'s life realities, often different from the cooperative they worked in. Those parallels are the ones I am focusing on; to visualize the women*'s role and their daily life.

Machacamarca is located 30 kilometers from the city of Oruro. The cooperative has 40 associates out of which 15 are female (Mining associate 3, personal communication, 2019). The cooperative is open for more people to enter (Mining associate 6, personal communication, 2019). The process starts with an application that has to be presented to the cooperative's president. Sometimes the women* stated to have presented it themselves, sometimes their husbands did. In this cooperative, the payment is relatively low; the share, the "*ficha*", costs 500 Bolivianos, around 65 euros ("Exchange rate (InforEuro)," 2019b). The applicant gets three trial months. In these months, they have to deliver a certain amount of mineral to become associate. In the case of they

[28] Engl. "There are two cooperatives in Machacamarca, and let's say, it is the most depressing place, it's the most depressing" Expert from CISEP (2019).

cannot deliver, the money paid for the share is lost (Mining associate 3, personal communication, 2019). In other cooperatives, a share can cost up to 10,000 dollars. Either way, it is a risk to take. The interviewees were mostly instructed by friends or family members who already had experience (Mining associate 3, personal communication, 2019). If one wants to enter the cooperative and lives in the town, it is easier to become an associate than coming from further away (Mining associate 7, personal communication, 2019).

There are two forms of work in the cooperative. Some associates work in the river, some work further away from the river (personal communication, 2019). One associate tells me that she* had worked in the river but could not continue. She* got hurt and could not continue as it was too hard work. So she* changed to the other location of the cooperative (Mining associate 3, personal communication, 2019).

Figure 5: Workplace of an associate in Machacamarca, © Isabella Szukits, Südwind

For those who do not work at the river, which is the majority, they buy earth discards from mines nearby and transport them to the cooperative's working place next to the town Machacamarca (Mining associate 3, personal communication, 2019). Mostly, the earth is bought from the mine in Poopó (Expert from CISEP, 2019). They also buy their material from the Mineral Marketeer of the cooperatives of Bolivia (Comercializadora de Minerales de las cooperativas de Bolivia, COMERMIN). All interviewees told me that they do not know if the material contains mineral, it is always a question of luck if they can process it and gain money with it.

After they get the ore to their work place, they start washing the mineral out, so-called *deslamar* of the material. They do this in so-called budles, which is shown in figure 7 (personal communication, 2019). To give a short explanation of the process, the raw material is deposited outside the budle, at point 1 in figure 7. There, several chemicals are mixed to the material, for example xanthate or kerosene. The water comes from the river, which I found to be rather a small stream. With plastic water bottles and small tubes, the water is transported to the individual working places. With the water running slowly through the material into the budle, the tin is washed out. As tin is heavier than other materials it stays in the middle of the basin (point 2). The rest runs to the side of the basin (point 3). The next step is to shovel the basin out, while the tin-containing material in the middle is saved and the rest is waste. The tin miners repeat this process up to six times, which in total takes them two to three months. Then they sell two bags of material which has around 45-50% purity (personal communication, 2019; Mining associate 3, personal communication, 2019; Mining associate 5, personal communication, 2019; Mining associate 8, personal communication, 2019).

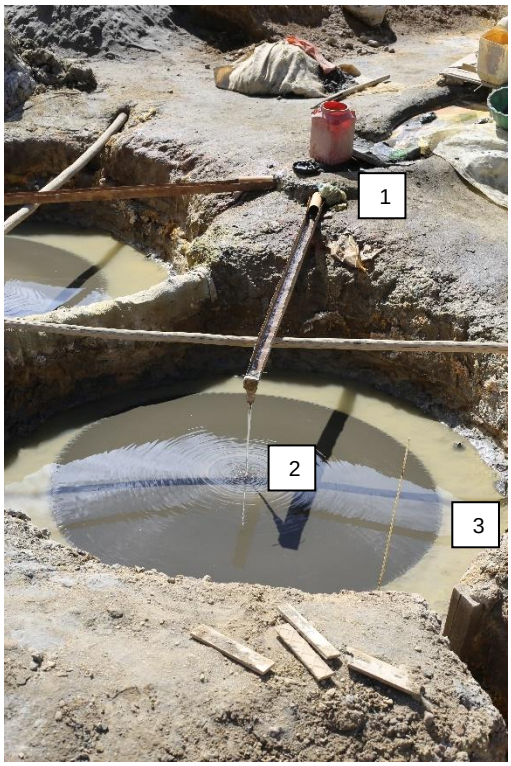

Figure 6: Budle in Machacamarca, © Isabella Szukits, Südwind

For the associates who work at the river, according to a couple I interviewed, the process works differently. They do not have to buy material from other mines. They use sediments from the river Huanuni and material from the earth around their workplace.

They dig some of it and as it contains tin, they wash out the mineral from there. Their process is much quicker than the one further from the river, they repeat it around four times. However, the basins have to be shoveled out faster and more frequently, which makes it harder, particularly for women* who work by themselves. It takes them one

month to sell two bags of around 50% purity. Thus, the income of these associates is higher (Mining associate 9, personal communication, 2019).

The working conditions of the cooperatives are very poor. All women* do the work out of necessity. No interviewee told me they voluntarily have chosen this job. “Tengo que mantener a mis hijos, que más voy a hacer”[29] is what they told me frequently. Some had worked fishing or selling things before, but there is not much work left, so they had to find another way to make money (personal communication, 2019).

Some mentioned that they liked about the work in the cooperative that they work independent. Every associate works on their own account and nobody tells them what to do (personal communication, 2019; Mining associate 3, personal communication, 2019; Mining associate 4, personal communication, 2019).

The interviewees usually start their day at around 4 to 6 in the morning. In winter, they cannot start working early because their basins and the water is frozen. So they have to wait for the sun to melt it and start at around 10 am. The women* work six to seven days a week, while more mentioned the latter to be true (Mining associate 4, personal communication, 2019; Mining associate 5, personal communication, 2019; Mining associate 6, personal communication, 2019; Mining associate 9, personal communication, 2019). Some take Sundays off to go to church and wash clothes. But many claimed to work without any free day. They do not want to let alone their work space, because someone could destroy it or steal parts of it. One women* claims “no puedo buscar otro trabajo porque no

Figure 7: Miners build small shelters to stay overnight at the end of the concentrate-process, © Isabella Szukits, Südwind

[29] Engl. „I have to support my children, what else can I do” Mining associate 2 (personal communication, 2019)

puedo dejar el lugar solo, me han robado"[30] (Mining associate 8, personal communication, 2019).

There is no such thing as a work-life balance. "Si no trabajo, no comemos"[31] I hear freuquently (personal communication, 2019). On the weekends, the women* tell me that they bring their children to work, which enables them to enter earlier and stay longer because they do not have to pick them up from school. If the children are of a certain age, they also help in the *relave* (Mining associate 8, personal communication, 2019).

At the end of each washing-cycle, the purity of the mineral is quite high. This is when the associates do not want to leave their work space alone out of fear to be robbed. Many then stay in small self-built houses and stay overnight. "Se pierde mucha capital invertido"[32], explains one associate (Mining associate 8, personal communication, 2019). The medium temperature in Oruro, which is very close to Machacamarca, is 11.3 degrees Celsius at the highest, and in the coldest month June it is only 2.4 degrees ("Clima Oruro: Temperatura, Climograma y Tabla climática para Oruro").

The miners highly depend on the weather conditions. If the temperature is below 0, they cannot work as their work space is frozen. If it rains, the water system that they build disfunctions. They work in the sun without any skin protection (personal communication, 2019) at around 3,700 meters above sea level ("Machacamarca Altitud").

The work cooperative associates do is hard. Additionally, it does not pay well. The income depends on various factors. After the extraction process is terminated, the associates bring the mineral to marketeers. Usually, they have two or three bags to sell. There are two factors that determine the price they get paid, the purity of the material and the humidity. The women* I talked to confirmed what I had found from literature, i.e. when selling, the marketeers frequently take advantage of miners. They claim to have less mineral in terms of weight or purity. The associates state that they

[30] Engl. „I cannot look for another job because I cannot leave this place alone, I have been robbed before" Mining associate 8 (personal communication, 2019)

[31] Engl. „If we do not work, we do no eat" (personal communication, 2019)

[32] Engl. „You lose much capital you invested" Mining associate 8 (personal communication, 2019)

do not have the means to go from marketeer to marketeer to ask for a better price. Additionally, the marketeers work together and inform each other about the prices (Mining associate 3, personal communication, 2019). It is not evident that the marketeers pay the women* on time. Sometimes they have to wait up to one month until they get their full pay. Women* usually get less money that men*, marketeers take more advantage (Mining associate 8, personal communication, 2019). Illiterate women* have a particularly difficult situation as they cannot argue with the marketeers, who are well aware of that and do not hesitate to use it against them. Asking them whether they could report the marketeers crimes to the police for example, their answer was more than once “y a quién le vamos a vender, no podemos [hacerlo]”[33] (Mining associate 9, personal communication, 2019).

During my time with the associates, I could not draw a clear picture of what on average they earn per month. The cost of the investment is high and risky. In general, the money is enough to cover basic expenses like food, rent or energy, if one is lucky. (Mining associate 3, personal communication, 2019; Mining associate 5, personal communication, 2019; Mining associate 8, personal communication, 2019). One associate claims “a veces sacamos, a veces perdemos”[34] (Mining associate 5, personal communication, 2019). If there is a month or two where they do not make money, they cannot buy earth material from the other cooperatives to continue working. One interviewee told me that her colleague had helped her with material, otherwise she* would not have been able to work (Mining associate 5, personal communication, 2019).

According to the interviewees, the money is enough for food and rent, but it is not enough to buy work material, like shovels or security protection. “No tengo ni guantes ni botas para trabajar y trabajo con pala y pico”[35] (Mining associate 5, personal communication, 2019).

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[33] Engl. „and to whom are we going to sell, we cannot [do it]” Mining associate 9 (personal communication, 2019)

[34] Engl. „sometimes we gain, sometimes we lose” Mining associate 5 (personal communication, 2019).

[35] Engl. „I don’t have gloves or boots to work with; and I work with a shovel and an axe” Mining associate 5 (personal communication, 2019)

In terms of health aspects, conditions are not better either. By law, every cooperative member has to have social security. Only then they can work officially (Michard, 2008, p. 50). I asked many associates if they had health insurance and they denied. “No se puede enfermarse”[36] (Mining associate 3, personal communication, 2019). One reason that was mentioned why they do not have health insurance was because of too much bureaucracy and the cost of it. They do not only have to take time off to do the paperwork, but also pay for the documents, for example, the birth certificates of all family members. Even though the members pay every month the fraction that is discounted from their earnings, they cannot access any services from the insurance. Some also explain that the cooperative has to do the paperwork for the health insurance, and they have not done it. The associates claim several health problems directly resulting from their work at the cooperative: “El trabajo me está quemando las manos”[37] (Mining associate 8, personal communication, 2019). They mention stomach aches and headaches because of the chemicals they use and breath in daily (Mining associate 8, personal communication, 2019). An Expert from CISEP (2019) tells us that in Machacamarca there is a lot of wind which is one of the reasons the miners get sick as well. Coca leaves and Singani, distilled spirit, helps them daily to keep working under these conditions (personal communication, 2019).

The associates also pay monthly to the AFPs, which is the pension fund, but they do not earn enough once they are retired (Mining associate 8, personal communication, 2019). Either they cannot retire at all because they have not contributed enough, or they retire, but often keep working in the cooperative (Mining associate 8, personal communication, 2019; Mining associate 9, personal communication, 2019). In case of the latter, they receive the “bonus of dignity” and are allowed to work by the cooperative (Mining associate 3, personal communication, 2019; Mining associate 5, personal communication, 2019). I often heard the retirement money is only 500 Bolivianos a month, by far not enough to live off. One elderly lady with the bonus of dignity tells me “Dios me ayuda, me da fuerza”[38] (Mining associate 5, personal communication, 2019).

[36] Engl. „One cannot get sick” Mining associate 3 (personal communication, 2019)

[37] Engl. „Work is burning my hands” Mining associate 8 (personal communication, 2019)

[38] Engl. „god helps me, he gives me strength” Mining associate 5 (personal communication, 2019)

4.4. Work inside the mine

There are many cooperatives in which women* cannot enter the mine. However, in some the cooperative policy allows them to enter. In my field study, I realized that entering the mine means risking life. I could not estimate the risk of entering, which is why I decided not to. This is why one of my cases is from a cooperative where women* do not enter the mine. The other case is a cooperative in the department of Oruro which I will not name. The interviewees were generally open to tell me about their life and work. However, I did not accompany them to their work place inside the mine. The information they provided me is very valuable for this research, though, it is a limitation and should be considered as such while reading the thesis. I have elaborated on this topic before and I decided to include this cooperative because I had the possibility of explaining myself and to some extent, the comprehension of the women*.

Before focusing on the case, I want to draw a quick overview of the other cooperatives I visited and the relevant results for this research. I visited the three cooperatives Japo, Morococala and Santa Fé. There are not many women* working in the cooperatives – according to CISEP, eight women* in total. Five of them work inside the mines, the rest work as rock-smashers. The low number of women* and logistical problems in terms of infrastructure were the reasons I did not focus on these cooperatives. There is very little transportation and I did not have the resources to hire a private car more frequently. Women* told me that they have more problems working inside (than outside). They do not get places with minerals as rich as the places in which men* work. She* claims:

> "[…] yo como estoy aquí afuera sola, entonces no hay mucho problema, pero con las señoras, es que hay un poco de problemas adentro [de la mina] con las señoras. Hay muchas molestias, es porque cuando sos mujer, vos no puedes, eso debe ser, […] dicen las señoras. Pero ya no es tanto como más antes, por ejemplo, más antes no dejaban entrar a las señoras a la mina, decían que las mujeres traen mala suerte, que hacen perder el mineral, decían esas cosas, pero ya después poco a poco [entraron], las señoras porque no pueden estar sin estar adentro […], [pero] sabes, no me gusta. Es más arriesgado, más peligroso. Aquí, por lo menos veo, me escapo y hay espacio para escaparme. Como en la mina es estrecho, oscuro, hay agua, puedo resbalarme, [aquí] puedo hacer algo. De esa manera he trabajado un tiempito, un mes he

> trabajado adentro y cuando han venido a ayudarnos desde España, Samanta"[39] (Mining associate 1, personal communication, 2019)

The associate refers to a video by Samanta Villar (Samanta Villar, 2009) who made a show called "21 días en la mina", about the life of a miner in Morococala. The women* in town told me Samanta stayed with them for a couple of months and after publishing her program in Spain, she* helped the woman* in her show with donations to buy a house and move somewhere else. According to the people in town, there was a wave of solidarity from many people. However, most of the donations were used for one individual instead of improvements for the community, cooperative or the village (personal communication, 2019).

Cooperative II

I have chosen this cooperative as one of my cases because relatively many women* work inside the mine. Many cooperatives exclude women*, which was not true for this case. This cooperative I will not mention by name in protection of the miners. In the cooperative, they extract the mineral complex lead-zinc-silver (personal communication, 2019).

I have used interviews and an inductive method to analyze the data. The results will be divided into seven different categories: (1) the cooperative and its way of functioning, (2) *el Tío*, (3) the work steps, (4) the working conditions, (5) the role of women* in the cooperative, (6) the income situation of the interviewees and (7) health aspects. While most categories are the same than in case one, I added two categories that were relevant according to the content analysis, *el Tío* and the role of women* in the cooperative.

To enter the cooperative, the person must present a letter with an application. One requirement is being older than 18 years. They also have to have someone who

[39] Engl. "Since I'm out here alone, then there's not many problems, but with the ladies, there's a little trouble inside [the mine] with the ladies. There is a lot of trouble, it's because when you're a women*, you can't, that must be it, [...] that is what the ladies say. But it's not as much as it used to be, for example, before they wouldn't let the ladies enter the mine, they used to say that women* bring bad luck, that they cause losing the mineral, they used to say those things, but then little by little, [they entered], the ladies, because they can't be without working inside [...], you know, [but] I don't like it. It's riskier, more dangerous. Here, at least I see, this, I escape and there is room to escape. As the mine is narrow, dark, there is water, I can slip, [here] I can do something. That way I have worked, only some time, a month I have worked inside, when they have come to help us from Spain, Samanta" Mining associate 1 (personal communication, 2019)

guarantees for the new associate. This means the person takes responsibility for the new member (Mining associate 11, 2019; Mining associate 12, 2019). One associate had to keep insisting after multiple failed applications and finally could become an cooperative associate (Mining associate 11, 2019). For many, it is difficult to enter the mine. Whether friends had tried to work in the cooperative, an associate tells me

> "Claro, muchos. Hay [unas] que vienen, otras que llegan y verifican con quien van a trabajar. Otras se van también, porque el trabajo es forzoso y duro, ¿no? Hay que trabajar, como mujeres también, hay que minorarse a la fuerza de un hombre, los hombres no se conforman con el trabajo que hacemos nosotras. […]"[40] (Mining associate 10, 2019)

The associates claim that they had been instructed to do their work by friends or family members (personal communication, 2019). All women* told me that the reason they do the work in the cooperative is out of necessity. To the question of why they do this type of work they answered similarly to people from all the other places I have visited. Women* work to support their kids and to eat (personal communication, 2019). In this cooperative, policies allow (all) associates to take time off, to study, for example (Mining associate 11, 2019). It is a cooperative with relatively better work policies for miners. They have shaped the discourse as they have understood their rights and have demanded them to be implemented somewhat successfully (Expert from CISEP, 2019). All women* in the cooperative are official associates (Mining associate 10, 2019).

In the cooperative, there is a strong belief in "*el Tío*". He* is seen as a god who protects the miners and the mineral vein. Every time they enter the mine, they bring him an offering, i.e. a cigarette, coca leaves or alcohol. His statue is in the first gallery when entering the mine.

Figure 8: Example of "El Tío" and two "Tías" in a mine, © Isabella Szukits, Südwind

While in other cooperatives, I was told that "la Tía" is jealous and does not want women* inside the mines; in this cooperative the

[40] Engl. "Sure, lots of them. There are [some] who come, others arrive to verify who they are working with. Others leave as well, because work is forced and hard, right? We have to work, as women as well, we also have to reduce ourselves to the strength of men; men are not satisfied with the work that we do" Mining associate 10 (2019).

women* told me that she is believed to be the mineral itself (Mining associate 11, 2019). “Se trata de tener fe en algo, creer en algo”[41] an interviewee claims (Mining associate 12, 2019).

Unlike many other of the cooperatives in the Oruru area, the majority of women* work inside the mine. Some extraction steps are done outside in the cooperative area. Miners work in teams of two or more people, called *cuadrillas* (Mining associate 12, 2019). Inside, they drill and fill the material into bags, which they then carry outside the mine. Outside, they sieve the mineral in water to separate the lead from the zinc.

Figure 9: The raw material that is transported out of the mine, © Isabella Szukits, Südwind

Figure 10: a miner sieves the material to separate lead from zinc, © Isabella Szukits, Südwind

Firstly, they separate the zinc. The lead and the silver stay at the bottom of the water basin, because they are heavier than the zinc (figure 11). This process is repeated a couple of times until the purity is higher. The mineral can be sold at each stage (also like it is shown in figure 12), without any processing, or concentrated. The higher the purity is, the more they get paid for it (Mining associate 10, 2019; Mining associate 11, 2019). The women* often do the same work as the men, but drilling is difficult for them because it requires much physical strength. Even so, many claim to have done it before, some getting hurt in the process (Mining associate 14, 2019).

[41] „It is about having faith, believing in something” Mining associate 12 (2019)

The women* mentioned several aspects of their working conditions. The mine is open from 6 am to 8 pm. There are no shifts, thus, the associates work these hours without a fixed schedule and do not work at night. They generally work all day, six to seven days a week. On Sundays, the cooperative is open until midday.

The miners mainly work without machines. Some machines are provided by the cooperative or as part of certain contracts. For example, a marketeer and the cooperative signed a contract and in return for selling a certain amount of mineral to the marketeer, they provided the cooperative with a compressor (Mining associate 11, 2019).

The industrial health and safety is very poor in the cooperative. Women* cannot afford proper shoes to enter the mine. The women* say that they use sneakers to enter the mine when they do not have money to buy working boots (reference). They also do not have proper clothes – one associate claimed to use the clothes that they do not use at home anymore and use those to work (Mining associate 11, 2019). Working outside, concentrating the minerals, the miners rarely wear gloves or other protective measures. The one thing each miner that entered the mine did have, was a helmet (personal communication, 2019).

Most interviewees stated that they cook in the morning before they leave the house. They bring their lunch to work and eat outside the mine (Mining associate 10, 2019; Mining associate 12, 2019; Mining associate 13, 2019; Mining associate 14, 2019). One associate states that she* sometimes does not eat, but chews coca leaves, which takes away the feeling of being hungry:

> "Así son las mujeres mineras, por ejemplo, yo, si estoy en la casa, si no estoy ocupada, quiero comer y comer y comer y en la noche, con [problemas de] digestión. Si como, como, como, mi estomago ya no está acostumbrado. Vomito, me enfermo, a veces no estoy tan bien"[42] (Mining associate 14, 2019)

As the women* work in teams, they are closer to their colleagues than in other cooperatives, where the work roles are rather separated. In this cooperative, this

[42] Engl. "If I am not busy, I want to eat and eat and eat and at night, with digestion [problems]. If I eat, eat, eat, my stomach is no longer used to it. I vomit, I get sick, sometimes I'm not that well" Mining associate 14 (2019).

indicates issues that the women* have to deal with. First and foremost, the women* are always accused to work less than men.

> "Uno siempre dice, tú haces menos que yo. Soy hombre, hago más. Siempre se llevan el mérito, por ser hombrecitos, tienen que hacer más. Pero, no es así, una socia tal vez hace el doble que ellos, porque la obligación de los hombres es perforar y disparar. A ver, dígale a un hombre que realice como nosotros realizamos, no lo realiza […]"[43] (Mining associate 10, 2019)

It is not possible to measure who did what amount of material. Since most women* do not drill, they do all the other work steps. Regardless of the amount of material or working hours, the women*'s work is always valued less (Mining associate 10, 2019). One of the associates claims that she* had drilled before, but she* hurt herself internally: "me lastimé, un mes y más estaba con mi periodo, por el peso nos lastimamos la matriz. Se puede bajar […]"[44] (Mining associate 12, 2019).

The women* tell me that they suffer from sexism. The associates state that in a team, the income is not always distributed equally among the members, often women* do not get the same share as men*. The reasons the men* state is that they work more (Mining associate 12, 2019; Mining associate 13, 2019; Mining associate 14, 2019). Some women* in these (work) relationships also suffer from psychological and physical violence (Expert from CISEP, 2019; Mining associate 10, 2019). One interviewee said that her team member had abused her (Mining associate 10, 2019). The women* cannot report it to the cooperative, because she* would have to leave the cooperative, thus lose her job and income: "[…] Tengo miedo. […] Dónde voy a trabajar, sin derecho a nada? Con toda mi familia, peor, dónde voy a ir?"[45] (Mining associate 10, 2019). The cooperative's structure does not offer an inclusive and protective environment for women. On the contrary, women* did not feel comfortable speaking about the problems with the cooperative's board (personal communication, 2019).

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[43] Engl. "One always says, you do less than I do. I'm a man, I do more. They always get the credit, because they are men*, they must do more. But, it's not like that, a female associate may do twice as much as they do, because the obligation of men* is to drill and shoot. Let's see, tell a man to do what we do, he doesn't do it" Mining associate 10 (2019).

[44] Engl. "I hurt myself, for one month and more I had my period, because of the weight we get hurt. the matrix, it can cause a descensus uteri" Mining associate 12 (2019)

[45] Engl. „[…] I am afraid. […] Where would I go, without the right for nothing? With my family, where would I go?" Mining associate 10 (2019)

The local NGO that works with the women* and provides trainings, for example, on women*'s empowerment, claim that the women* often say that they would be fine because of the fear to lose their job. The men* would also confirm that they are satisfied with their female colleagues, but many situations have shown that they do not feel that way. According to our interviewees from CISEP, there have been attempts by men to make the women* leave the cooperative, by creating a hostile working environment. The expert stated that if the women* reported it, they would be accused of "just wanting to make trouble" (Expert from CISEP, 2019).

The NGOs further stated that women* are sometimes not acting supportive with each other (Expert from CISEP, 2019). As reasons they mention that the women*'s attitude often causes conflicts among them. If they grouped up, they could have a stronger voice, especially because they are not so many: "when they are at a meeting and there are hundreds of men* and only a couple of women*, they tell us that they are not listened to, that this is why they cannot not say anything" (Expert from CISEP, 2019).

The income of the women* is highly unstable. It is around 1000 to 3000 Bolivianos (Mining associate 12, 2019), i.e. 130-390 euros ("Exchange rate (InforEuro)," 2019b). Their income depends on the mineral vein and the luck, to find a good one, the purity and humidity of the mineral as well as on the market prices. "A veces ganamos, a veces perdemos. Nos endeudamos, después la pagamos y así estamos"[46] (Mining associate 12, 2019). They state that it usually is enough for the monthly expenses, but it is not stable month to month and miners accrue a large amount of debt, as explained by one associate: "sometimes we win, sometimes we lose. We take on debt, then we pay it back and that is how we are" (Mining associate 11, 2019).

Each team sells their material together. In one month, they sell around 100 to 200 bags of material, depending on the team (Mining associate 11, 2019). It is not possible to separate each member's contribution, however, money is distributed unequally between men* and women* as men* claim to do harder work and deserve more (Mining associate 10, 2019).

[46] Engl. "Sometimes we win, sometimes we lose. We take on debt, then we pay it back and that is how we are" Mining associate 12 (2019)

The selling process works similarly to the one explained in the other cooperative. Marketeers have contracts with the cooperative for an exchange of minerals and machinery, forcing them to sell at a certain price. Associates from the cooperative claim that if they went to a different marketeer, they would get paid more (Mining associate 10, 2019). Thus, they sell the required amount to the marketeer to fulfill the contract and sell the rest to other buyers. The miners take the material to the marketeer, who takes a sample in order to find out the quality, humidity and purity of the mineral. The result is often different from what the miner had found beforehand. They claim that the material weighs less, it is more humid and does not have as much mineral. As the miners need the money, they accept the conditions of the marketeers (Mining associate 10, 2019; Mining associate 11, 2019; Mining associate 12, 2019; Mining associate 13, 2019).

The women* in the cooperative are all official associates and pay their monthly contribution to the health insurance. However, the health services are poor. The women* state that they go to the doctor and the doctor tells them that they are fine. They do not feel fine, they have a cold or back pain, but they are often sent home by the doctor without treatment. One women* claims:

> "a veces vas a la consulta y te dicen que no tienes nada, estas sano. Un año antes te habían dicho que tienes polvo en los pulmones. ¿Pero cómo, si el año pasado tenía y este no? Y esto no se cura por cuidarme, no te puedes curar. Por no querer pagarnos y jubilarnos nos dicen eso"[47] (Mining associate 12, 2019)

If they go to the doctor's and they give them a sick leave, they get three days off. Women* state that they stay at home for three days but do not earn anything during that time. "Si no trabajamos, no comemos"[48] (Mining associate 12, 2019). This is why they often work even though they are sick. The health care, when provided, is very poor. They state that if they have a certificate from a different (and independent) doctor, the public doctors do not accept it and say it is not valid. Thus, they need to find homemade medicine or alternative ways to cope with pain, e.g. coca leaves, and

[47] Engl. "Sometimes you go to the doctor's office and they tell you, you do have anything, you're healthy. A year before that they had told you that you have dust in your lungs. But how, if last year I had it and this year I don't? And this cannot be cured by taking care of myself, you cannot be cured. They tell us that because they don't want to pay us and have us retire" Mining associate 12 (2019).

[48] Engl. „If we do not work, we do not eat" Mining associate 12 (2019)

continue working (Mining associate 11, 2019; Mining associate 12, 2019). To the question what they would do if they got sick for a longer period of time, one associate answers “En ese caso, no se, nunca lo he pensado”[49] (Mining associate 11, 2019)

There are also associates that work but are already retired. The women* receive the monthly retirement money of 500 Bolivianos. This is not enough to cover their expenses. Thus, they keep working.

4.5. Other general remarks

Firstly, many women* stated that they had received help from local organizations. Particularly trainings on empowerment have helped them to speak up and demand their rights (Mining associate 1, personal communication, 2019; Mining associate 10, 2019; Mining associate 11, 2019; Mining associate 3, personal communication, 2019). One woman* claims that before receiving the trainings, she* did not know how to make her voice heard. She* states that they she* and her fellow associates had learned how to demand their rights and put it into practice (Mining associate 11, 2019).

Secondly, there is a high number of cooperatives and there are miners working hard doing different types of works with different daily lives (personal communication, 2019). My research was done within a certain amount of time and with limited resources. Thus, I cannot speak for all cooperatives, neither talk about all women*. Even experts who have been working in this field for years do not have sufficient data about women* in mining. An Expert from CISEP (2019) sums up that they do not have the exact number of women* working in cooperatives because there are more people, sometimes the children or women*, working as “employees” of the men* miners. Not having accurate numbers represents a problem for their work as an NGO.

Thirdly, not only is there too little data, but much of the knowledge from individuals working with the miners daily is not available in written form. One reason for this are the missing resources, time and money (Ana Maria Aranibar, 2019; Expert from CISEP, 2019; Expert from Radio Pio XII Siglo XX, 2019). Moreover, studies must be

[49] Engl. „in this case, I do not know, I have never thought of it” Mining associate 11 (2019)

read within their context and take into account interests that can have effects on the results (Campanini, 2019).

5. Further research topics

There are many contextual factors important for this research that could not be focused on mainly because of the limited scope of this thesis. However, three topics were found to be particularly relevant: environmental aspects of cooperative mining, the global commodity trade in light of the electronics supply chain and the role of the government and *buen vivir* and its (missing) implications.

Environmental aspects

Firstly, cooperative mining has a huge impact on the environment. This topic itself fills books alone, but instead this research was conducted from a social science perspective. I want to briefly touch the topic referring to a book written by Moeller et al. (2002) about the environmental aspects of cooperative mining (Möeller S., Trujillo L., Soria P., & Soria P., 2002, pp. 81–91). They examined cooperatives in the department of Oruro including Machacamaca, one of this thesis's case studies. There are two main types of contamination related to mining activities: solid waste and waste from concentration operations. Firstly, solid waste from cooperatives contains often chemical minerals. When it comes into contact with rain, the pH of the water changes making the water acidic. Moreover, solid wastes from inside the mines are either deposited outside or further processed by rock-smashing women*, who then leave the mineral they do not need. These discards are in many cases close to the mine entrances. Mines are at a deep level at which they get in touch with ground water. Thus, this water – later used for drinking, washing and other domestic uses – gets contaminated by the mining activity. Secondly, the mineral concentration results in water pollution. The authors examined among others the mining center Huanuni, 49 kilometers from Oruro and the Huanuni river. As waste is deposited in the river, the water is contaminated. As mentioned before, the associates of the cooperative Machacamarca work in this river extracting tin (Mining associate 9, personal communication, 2019).

The global commodity trade in light of the IT supply chain

The context of this thesis is the commodity trade and the IT supply chain. As my colleague's research focus was on mapping the way natural resources take after being extracted in cooperatives. Results show that cooperatives sell to marketeers who then export the minerals. Resources end up in the global commodity market, often through Swiss companies, but also in the European Union. Tin is mainly smelted in Bolivia by the state, while zinc (from the mineral complex) is exported without being smelted. It can be concluded that minerals that are used in electronic devices come from cooperatives, while multinational companies do not show this in their supply chain. There is no transparency whatsoever. More research on the social conditions including the working conditions would help to demand big companies to disclose their suppliers of these natural resources (Ronsse, 2019).

The role of the government and buen vivir and its (missing) implications

Last but not least, *buen vivir* (living well) and the Bolivian constitution have been used as a role model during my master studies in international development. Villalba (2013, p. 1428) states that buen vivir is "inspired by the experience and practice of Smak Kawsay (a life of fullness) by the Andean indigenous people". She further says that it is an alternative way for a capitalist system. Bolivia has laws that include nature and are seen as exceptionally environmentally focused globally (Villalba, 2013, pp. 1428–1429). However, the laws are largely not applied (personal communication, 2019; Expert from Radio Pio XII Siglo XX, 2019). One of the reasons is the government's actions with regard to the cooperatives in Bolivia over the last years. Lunario (2005, p. 18) states that cooperative mining in Bolivia is an option to create work opportunities while liberating the government of all responsibilities without any investment. Furthermore, the government cannot comply with the work demand of its population, so rock-smashing women and miners in cooperatives in general represent an opportunity for the government to somewhat overcome this problem.

6. Conclusion

A more globalized world and an increased demand for natural resources call for more research providing knowledge about the people that are working in this sector, often in the Global South. The electronics industry is one of the sectors that manufactures natural resources in devices as for example phones or computers.

Embedded within the (neo)extractivist theory, the present study demonstrates women* in cooperatives extracting the mineral complex zinc-lead-silver as well as tin. Generally, the results confirm extractivist theories' arguments that women* in the Global South are most affected by extractivism. Nature is appropriated and so are women*, through their bodies and labor. The current literature lacks to talk about cooperatives, specifically about the role of women* working there. A cooperative is an autonomous association of miners who work self-employed. For this study, a literature review was conducted online and offline in Bolivia and a field research was carried out with women* working inside and outside of mines in June 2019 in Oruro in the highlands of Bolivia. Two very different cooperatives in which women* work extracting tin and the mineral-complex silver-lead-zinc were chosen as cases. During the research and analysis process, a decolonial approach was applied. I tried to use categories created from within the situation and constantly reflected my position as a (Western) researcher. The methods used were semi-structured interviews if possible and ero-epic-conversations followed by a content analysis. In the thesis, I use gender, which is socially constructed, as a category, but I do not intend to categorize the women* as a homogenous group. As van Hoecke (2007, p. 69) argues, mining women* cannot be categorized in existing groups such as indigenous, rural or farming people.

The literature review that was conducted online did not result in many major findings. Literature about women* specifically was rarely available and the few works that could be found were more than ten years old. The literature I found in Bolivia did show more results, but is not available internationally. This paper intends to contribute to filling this research gap.

My concluding analysis is structured as follows; in the beginning, general results will be presented, before going into detail about more specific forms of labor and their accompanying cases. In each case, an analysis of the areas of women*'s daily lives is included. The two factors potential disproportionate disadvantages and power relations are included at all levels of the analysis.

Three main general findings are, firstly, many women* that are *socias* in cooperatives could only enter the cooperative because their husbands had died. They demanded the right to work at his place as they would lose their income completely including the money they had had invested to become part of the cooperative. Thus, women* enter the cooperative in an unequal power relations, in many cases only being allowed to

enter because of their husbands. Many women* do not work officially in the cooperative even though they provide their labor to it, because they help their husbands (informally) or they often do not have the documents or money to enter the cooperative formally. This represents an disproportional disadvantage as wives of their husbands. Secondly, when asking women* why they work in cooperatives, none of them answered because they wanted to or liked their job. It was, without exceptions, out of necessity. Thus, they are generally not free to decide in which area of work they are active. Ulloa (2016, p. 130) stated that economic aspirations are the reasons for many women* to work in mining, which is the case in the context of this study. Thirdly, in many cooperatives, women* were of a socioeconomical disadvantaged status, i.e. elderly and older women*, widows or single-mothers. As widows or single-mothers, women* often face the double burden of productive and reproductive work, which confirms Jenkins's (2014, p. 13) thesis. Being the only caregiver of the family is another reason why women* work in mining at all – they have to take care of their children. This is often true for older women*, too. Since the monthly pension does not cover the expenses, many retired women* keep working to be able to live in their cooperatives.

As mentioned before, women* work outside the mine. Their daily lives are affected negatively in various forms. Often, they cannot enter the mine because of beliefs that they would bring bad luck and make the mineral vein disappear. In some places, the cooperative has the condition that only one partner of a family can work in the cooperative. As this is often the male part, wives of miners cannot enter the cooperative. Therefore, women* are confronted with disproportional disadvantages through the mere denial of access to work in the cooperative. Parallels to Puleo's (2017, p. 176) debates on how women do not enter the labor market neutrally can clearly be drawn.

For the first case, the cooperative Machacamarca, where a high proportion of women* work, I will use the five categories to analyze the women*'s daily lives and possible disadvantages and power relations: (1) the cooperative itself and how to become an associate, (2) the work steps, (3) working conditions, (4) the income situation including the selling process and (5) the health aspects of their profession.

Becoming an associate is relatively easy and cheap. However, there are no introduction mechanisms, which means that each person has to find someone to teach them the work processes. The work steps include high physical work, as material has

to be shoveled out the budles. Elderly women*, which make up many associates, have physical difficulties with this type of work. The process always depends on a certain amount of luck as there is a possibility that the material does not contain any minerals. While the upsides of the work in cooperatives are that the associates work mainly independent, the working conditions are precarious. The women* work long hours, often seven days a week. Especially at the end of the extraction process, the miners often stay at the work site in fear of robbery of their highly-concentrated minerals. The town lies at around 4,000 meters altitude which means it is cold at night, when they sleep in self-made cabins and they are exposed to the sun all day without any protection. The disproportional disadvantages of women* in mining become very clear analyzing their income situation. Miners generally do not earn sufficient money to live a decent life. *Relaveras* have relatively high investments in comparison to their earnings. Their income is low as they are extracting material that has very low purity from the beginning. Furthermore, women* are ripped off during the commercialization process. The marketeers they sell their minerals to find excuses, as for example the material would not weight as much as the miners had previously examined, or the humidity would be higher and the purity lower than what independent exams had shown. Power relations are expressed in the selling process because of the fact to be of the socially weaker gender and other aspects like for example some women*'s illiteracy. In the case of Oruro, Jenkins' (2014, p. 22) thesis of women earning less for their labor is in line with the research results. Women*'s daily lives are also severely affected by the health aspects of their profession. As Jenkins (2014, p. 12) elaborates, women* are the main care givers in the family which results in them being over-proportionally affected by health issues. Results show that many mining women* do not have access to proper health care. They often do not have social security and sometimes, they pay contributions but cannot access the services. Even though they work with chemicals, workers hardly use any protection, neither gloves nor masks. This leads to head aches, stomach aches or skin problems affecting yet another area of women*'s daily lives.

The other form of work is inside the mines. There are many parallels with the first form, but also differences between the work inside and outside the mine. It is important to mention that entering a cooperative mine represents a risk itself as accidents happen and especially with cooperatives who work in very old, wooden constructs of the former COMIBOL, it is widely considered dangerous to enter the mine within local people.

Regarding the categories of the daily lives of women* in my second case, seven categories emerged: (1) the cooperative and its way of functioning, (2) *el Tío*, (3) the work steps, (4) the working conditions, (5) the role of women* in the cooperative, (6) the income situation of the interviewees and (7) health aspects.

Thus, I conclude that women* have difficulties accessing the cooperative as they need a person as guarantee. Regarding their reason for working at the cooperative, similar results were found. Women* work out of necessity, because they had lost other jobs or did not have any alternative income sources. One specificity of working inside the mine is *El Tío*, a god-like figure who is believed to be jealous. He does not like having women* inside the mine, a belief which reduces women* merely because of their gender and affects them negatively. Furthermore, the laborious work inside the mine are physically exhausting and hurting. Many of the women* in this study have claimed to have hurt themselves because it was too much pressure on their uterus, causing perforations and other injuries. Many women* phrased their work to be “a man’s work” (Mining associate 10, 2019), showing the gendered implications of mining. Many other work steps are done manually including carrying bags of material outside the mine on their backs causing major back problems. The safety measures taken by women* are weak. They cannot afford proper working clothes or shoes, which leaves them vulnerable to get hurt. In this second case, women* and men* work close together, which can cause more conflicts. Interviewees stated that their male colleagues abused them and exploited them because of their gender. They further claimed that if they reported the abuse they would be expelled from the cooperative. This confirms Ulloa’s (2016, p. 127) findings that mining creates inequalities that include physical and emotional violence. The income of the women* is higher working inside the mines, but still unstable. Depending on the market price, they “sometimes win, and sometimes lose” (Mining associate 11, 2019). The mechanisms of selling in the other cooperative is quite similar to this cooperative’s one. On top of the unequal selling processes, the marketeers in this case provided the cooperative with a machine in return of a contract that obligates the cooperative to sell a certain quantity at a lower price. What is different from the first case is that the mining associates all had social insurance. However, the health services are poor. They do not get the medication or treatment needed and, similar to all other places visited, there is no payment for days that the workers are not present, thus, women* go to work ill as well as they claim that if they do not work, they do not eat.

Most of the results of this thesis confirm the ongoing debates in literature and contribute to them. First and foremost, it can be concluded that for many women, their extractivist activity is their way of living and thus, has a high impact on the women's daily lives as demonstrated using the different categories (Ulloa, 2016, p. 127). Secondly, Jenkins' thesis, that women are disproportionately impacted negatively can be confirmed in the case of this research. When examining the areas of women*'s daily lives, there are many levels on which women* are disproportionately impacted. Thirdly, power relations do exist in the women*'s daily lives and particularly in the context of their activity as cooperative miners.

Regarding my decolonial(,) feminist approach and its implementation in the field research, I believe doing research from a decolonial perspective without having an indigenous background (or any that enables one to speak for a group that is subject of the research) is quite difficult and I am questioning if it is possible at all. I interpret the literature (Grosfoguel, 2011; Harding, 2009, 2009; Lugones, 2010; Mohanty, 1984; Smith, 2008) for the most part arguing that research is important and should be done regardless but one has to reflect on their position. I am aware of my standpoint and that it influences the way I see things. But *how* to execute research respecting these requirements, which for me personally, are indispensable, has been testing my limits as a researcher. I agree with the mentioned authors that write about decolonial(,) feminist theory that most research has been done from a Western perspective and this needs to change. However, I believe that if a person from the West *can* do decolonial research, there is a lack of theoretical instruments to implement such.

There are some downfalls of this research. Firstly, as I did not have financial resources and the time to conduct quantitative data, my qualitative approach lacks numbers about the women* working informally in the sector. A different approach, e.g. a quantitative one, would have extended the research results. Secondly, in the short period of time, it was difficult to gain the women*'s confidence. Staying longer in Bolivia might have influenced my research results, mainly by the possibility of conducting more case studies. It is imperative that ethical standards have the highest priority, even though this means getting less insight. Thirdly, the research was conducted talking mostly to women*. However, including mining men* and their perspectives would have added to the results. Fourthly, the study includes only two cooperatives while there is a large number of cooperatives in the area and they are very diverse.

Therefore, future research should focus on miners in cooperatives in Bolivia in order to provide more and current data. More importantly, women* must be included as central actors in the sector, working in cooperatives inside and outside of the mines and being affected indirectly by their family members working (and often dying from accidents/illnesses) in mining. Moreover, a variety of cooperatives should be included demonstrating their diversity and its implications on the situation. Last but not least, future research should apply both qualitative and quantitative approaches.

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8. Appendix

8.1. List of Abbreviations

Abbreviation	**Meaning**
COMIBOL	Cooperación Minera Boliviana
CEPROMIN	Centro de Promoción Minera
CEPAL	Comisión Económica para América Latina y el Caribe
FENCOMIN	Federación Nacional de Cooperativas Mineras de Bolivia
FEDECOMIN	Federación Departamental de Cooperativas Mineras de Bolivia
CISEP	Centro de Investigación y Servicio Popular
COMERMIN	Comercializadora de Minerales de las cooperativas de Bolivia

RNMM	Red Nacional „Mujeres y Minería”

8.2. List of Figures

8.3. Interview- and ero-epic-conversation guide

Introducción: introducirme y explicar lo que estoy haciendo

¿Me puede contar un poco de la mina y de su trabajo?

Su trabajo y la cooperativa

- ❏ ¿Cuáles son sus tareas? ¿Como aprendió hacerlas?
- ❏ ¿Cuál es su horario? ¿Cuántos días trabaja usted en la mina?
- ❏ ¿Con qué herramientas trabaja en la cooperativa?
  ¿Hay vehículo, maquinaria, wincha, ingenio? ¿Puede usarlo?
- ❏ ¿Me puede contar un poco sobre tu entrada a la mina?
  - ❏ ¿Como y por qué fue? ¿Qué hacías antes?

- ❏ ¿Se necesita tener hijos para entrar en la cooperativa? ¿El hombre* también?
    - ❏ ¿Qué hacen/hacían sus padres? ¿En qué trabajan sus hermanos?
- ❏ ¿Qué cosas han cambiado desde que trabaja en la mina?
- ❏ ¿Que significa el Tío para usted? ¿Y la Tía?
    - ❏ ¿Qué piensa sobre el tío no queriendo mujeres* en la mina?
- ❏ ¿Si hay que tomar decisiones en la cooperativa, ¿cómo funciona?
    - ❏ ¿Tiene voto?
- ❏ ¿Se organizan actividades de diversión en la cooperativa?
    - ❏ ¿Van todos?
- ❏ ¿Por qué cree que hay menos mujeres* en la cooperativa que hombres*?
- ❏ ¿Cómo funciona la venta del mineral?
    - ❏ ¿Les compran también en época de precios altos?
    - ❏ ¿Es peligroso dejar el relave solo? ¿Por qué?

Comida

- ❏ ¿Quién se preocupa por la comida en la casa?
- ❏ ¿Usted come regularmente? ¿Si está trabajando, sale de la mina para comer?

Vivienda

- ❏ ¿Puede contarme donde vives?
    - ❏ ¿Es su propiedad?
    - ❏ ¿Cuántas personas viven en su casa?
- ❏ ¿Quién cuida a los niños mientras está trabajando?
- ❏ ¿Usted enfrenta violencia en su hogar? ¿O en su trabajo?

Ingresos

- ❏ ¿Me puede contar de los ingresos de su familia?
    - ❏ ¿Ajusta lo que se gana en la mina para su vida?
    - ❏ ¿Gana lo mismo cada mes? ¿De qué depende?
    - ❏ ¿Tiene otras fuentes de ingreso?
- ❏ ¿Qué hacen sus hijos?
    - ❏ ¿Ayudan a veces en la cooperativa?

Seguridad industrial

- ❏ ¿Qué medidas de seguridad se toman en la mina?
    - ❏ ¿Cuales son obligatorias y cuáles toman por su propio beneficio?
    - ❏ ¿Todo el mundo aplica el uso del casco, mascarilla…?

Seguridad social

❏ ¿Tiene caja? (seguro de salud)
❏ ¿Qué pasa si se enferma por un tiempo?
    ❏ ¿La cooperativa le paga algo?
    ❏ ¿Recibe algo del estado?
    ❏ ¿Se puede vivir de ello?
    ❏ ¿Qué pasa si una mujer* se embaraza? ¿Toma pausa? ¿Por cuánto tiempo?
❏ ¿Toma vacaciones?
❏ ¿Hasta qué edad trabajan en la mina? ¿Después reciben jubilación?
❏ ¿Qué edad tiene la gente más joven trabajando en la cooperativa?

Movimientos de mujeres*

❏ ¿Ha habido movilización de parte de las mujeres*?
    ❏ ¿Cómo se organizaron?
    ❏ ¿Tenían las mujeres* situaciones/problemas similares?
    ❏ ¿Cuáles eran sus demandas?
    ❏ ¿Problemas con o durante las reuniones?
❏ ¿Cómo reaccionaron los otros trabajadores/cooperativa/federación en respuesta a sus reuniones/movimientos/demandas?

Otros

❏ En la ley de Bolivia dice que no debe haber discriminación de nadie. ¿Qué opina sobre la aplicación de esas leyes?

Preguntas socioeconómicas

❏ ¿Cuantos años tiene?
❏ ¿Qué tipo de educación tienes?
❏ ¿De dónde es? ¿Habla Aymara o Quechua u otro idioma?
❏ ¿Tiene familia?

8.4. Transcriptions – Examples

Interview by Isabella Szukits and Silke Ronsse with CISEP, an NGO working with mining women* in Oruro on 12th June 2019 (excerpt – anonymized cooperatives):

[…]

P1. Dicen que aquí Oruro es más fácil que acepten mujeres que [en otros lugares más lejos de la ciudad], siento que es otra dinámica de cooperativa y me gustaría saber la

opinión de ustedes de que forma puede ser y qué diferencias hay entre las cooperativas donde trabajan las mujeres?

E1. Yo considero que si hay diferencias, y hay muchas no? Nosotros hemos trabajo mucho tiempo, intentando trabajando contra la violencia de género porque por detrás hay machismo, hay alcoholismo y eso provoca. Uno de los factores, creo, que indique para que hay mayor presencia de mujeres interior mina en Oruro es el nivel de escolaridad y las políticas que han venido desde hace ya muchos años de la promoción de la equidad del hombre y la mujer, no? Entonces como son unas minas que están muy visibles en el centro de la cuidad, si las mujeres quieren hacer problemas, es bien fácil victimizarlas y las cooperativas también no están bien vistas. No están bien vistas, las ven como depredadoras, entonces más que una ganancia nosotros decíamos, es una ganancia, los varones de las cooperativas han aperturado el ingreso de las mujeres porque no les quedaba otra, otra, otra, otra cosa que hacer.

P1. De que cooperativa específicamente se refiere?

E1. Ehhh [mencionando cooperativas], han ayudado mucho que las políticas actuales abogan por la igualdad en todo los espacios. Han ayudado mucho en [subir] el nivel de escolaridad tanto de los varones como tanto también de las mujeres. Es porque han entendido que tienen un derecho y no les pueden cuartar con ese derecho. Eso ha ayudado mucho. En un caso específicamente, que no esta vinculado al nivel sucecional de herencia, es de una compañera estudiante universitaria que trabajaba como secretaria en una cooperativa. Después de muchos años le tenían que retirar, pero no tenían los recursos para pagar las indemnizaciones. Entonces lo que han hecho, [es decirle] te ofrecemos una ficha, se le llama ficha, la acción, no? Y ellos suponían que con la ficha, que tenía un valor en su momento de 2000$ o algo así, no estoy seguro, ellos dijeron, ya agarra la ficha y lo venda y ella dijo, no, yo entro a la mina. Era un machismo ahí, dicen te damos un valor pero seguramente tu lo vas a vender y ella entró y una vez estando adentro ya está la pelea adentro. Ósea, hay mucha resistencia dentro de las minas, en interior, por la presencia de las mujeres. Solo que es inevitable, políticamente no es correcto que la saquen no? Adentro si hay un monton de problemas.

[…]

P1. Hay algunas [mujeres] que tienen profesión?

E1. Si, hay algunas que tienen una profesión con mucha mayor escolaridad, en el caso de Machacamarca, que esta mas integralmente, es más lamentable la situación. Hay dos tipos de mujeres, o son mujeres muy mayores o son mujeres muy jóvenes. Entonces, que sucede, la mujer muy joven no tiene mucho espacio. Ingresar a esas minas es algo lamentable, realmente estar al sol todo el día. No es muy difícil, 500 bolivianos (80 euros) más o menos cuesta para ingresar, pero tienen que conseguir la carga y ahí por ejemplo las cooperativas, las dos, casi están lideradas por mujeres entonces no es atractivo para el varón minero entrar a esa no, entonces ahí hay una presencia grande de mujeres hay unas 18 en la otra hay 13 más o menos, 18 de 35 ósea 14 de 35 mitad y mitad mientras que acá este sector pese que hay varia mujeres pero estamos hablando entre [cooperativa] hay 10 mujeres y 500 varones mientras que en [cooperativa] de 35 a 40 socios, 18 son mujeres. Entonces esas son las cosas que influyen.

Interview by Isabella Szukits, Silke Ronsse and Alberto Vázquez Ruíz with a female mining associate in the department of Oruro on 11th June 2019 (excerpt – anonymized cooperatives):

E1. Una asamblea aquí, la asamblea manda aquí. Se dice, todo lo que se dice, se hace aquí, se respeta la asamblea. Igual cuando yo he entrado a trabajar, igual aquí lo han topado. Lo estoy contando yo de mi, no se de otro, lo han topado todo igual, desde arriba, lo han topado. Ya podíamos todas, eso mas que todo es aprovechado. Y aquí en la cooperativa lo bueno es el horario. No como en muchos trabajos, entras y sales, pero aquí entras y sales a la hora que quieras, eso es lo de bueno en la cooperativa. Así, en una asamblea, siempre los socios, en una asamblea si te aprueban tu carta, entras.

P1. Y [la suya] la aprobaron de un solo?

E1. Eeeh, si, de mí más bien, yo por eso he presentado varias cartas. Se necesita alguien, una mujer, que la ayudes o algo, ahí puedes entrar. Así me dijeron a mi esa vez, he presentado aquí hartas cartas, después de cien. Cuando mi hermano entró el se ha garantizado, pero igual me ha dejado en suerte ahí, adentro, jajaja. Si otras personas te colaboran, si, pero no te toman así, minerales si, lo que le dije, lo que ellos ya no quieren lo botan eso de ahí, las mujeres más que todo nos hacemos de eso.

P1. Porque cree que es más difícil para la mujer que le acepten la carta y el ingreso de la mina que al hombre?

E1. Porque nosotros las mujeres no trabajamos como los hombres, no perforamos y, siempre vamos a estar tal vez dependiendo de ellos no? Ve, si, la perforación, más que todo, y tampoco hay aéreas de trabajo, ese es un problema, tanto de hombres y mujeres aquí adentro. Los hombres también necesitan ayuda por eso trabajamos en cuadrilla [no entendible]

P1. Y con que herramientas trabaja?

E1. Si, con congo, punta, después la maquina con el barreno, con eso punta y congo, más que todo.

P2. Y el barreno de la perforadora es propiedad de la cooperativa?

E1. No, de cada uno, es de la cuadrilla. De cada cuadrilla es la maquinaria, a veces nos colaboran con algunas cosas, la cooperativa. Con compresora, chacadora, todas maquinarias, con maquinarias, nos colabora la cooperativa.

P2. Y las maquinas que hay para procesar son de la cooperativa?

E1. Si, son de la cooperativa.

P2. Pero las pueden usar todos?

E1. Si, las podemos usar todos, porque nos descuentan el 8% de nuestros liquidaciones. Cuando entregamos, entonces, de la cooperativa,, entonces nos colaboran con eso, es la que vela por todos nosotros en la cooperativa.

[…]

P1. Y con los ingresos de la mina ajusta para el mes?

E1. Si, ajusta. Depende del mineral, a veces te ganas bien a veces no te ganas, a veces mil bolívianos por mucho, dos mil.

P1. De que depende?

E1. Depende de la veta del mineral. Si esta ancho ganas más, si esta así [muestra chico] no, depende de eso de la venta que a nosotros nos va bien aquí.

P1. Y sus hijos ayudan a veces en la mina?

E1. Ehhhh, una vez yo los he traído para que vean cómo es que yo trabajo. No les ha gustado mucho, entonces [les dije] si ustedes no quieren trabajar como yo, estudien! Ellos estudian mejor, mis hijos son mejores alumnos, desde pequeñitos, siempre han sido ordenados. Tienen sus diplomas, por eso mas que todo por mis hijos trabajo asi. Y no quiero que trabajen como yo, más que todo eso, todos los que estamos aquí. Más que todo por los hijos, no quieren que sean como ellos, como nosotros que estamos rascando la tierra y todo eso.

P1. Y que pasa si se enferma por un tiempo por ejemplo y no puede venir?

E1. En ese caso no se, nunca lo he pensado. [se rie] Seria, no voy a tener los trabajos, pero si es enfermedad así por accidente, la caja te cubre, nos da un monto de dinero, pero si es afuera que te enfermas, la caja no te cubre nada.

P1. Ósea fiebre, un resfrió o algo asi?

E1. Nada de eso, ósea solo accidente de trabajo, nada mas.

P1. Hasta que edad se trabaja?

E1. Ehhh, hasta los 55, pero depende de vos. Ósea, te jubilas, no, la jubilación llega por ahí a los 50 de las mujeres, pero te jubilas con 500 Bolivianos, asi es la jubilacion. Además estamos aportando y no te cubre, tienes que seguir trabajando hasta que te jubiles no te cubre.