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MARIANA GALVÃO LYRA

"Against the plunder of our ores"

The Anti-Mining Movement in Brazil Between 2013-2017

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Author's address: Department of Geographical and Historical Studies
University of Eastern Finland
JOENSUU
FINLAND

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Supervisors: Professor Rauno Sairinen, Ph.D.
Department of Geographical and Historical Studies
University of Eastern Finland
JOENSUU
FINLAND

Adjunct Professor Tuija Mononen, Ph.D.
Department of Geographical and Historical Studies
University of Eastern Finland
JOENSUU
FINLAND

Professor Daniel Franks, Ph.D.
Sustainable Minerals Institute
University of Queensland
BRISBANE
AUSTRALIA

Reviewers: Professor Anja Nygren, Ph.D.
Global Development Studies
University of Helsinki
HELSINKI
FINLAND

Emeritus Professor John Devlin, Ph.D.
Ontario Agricultural College
University of Guelph
GUELPH
CANADA

Opponent: Professor Anja Nygren, Ph.D.
Global Development Studies
University of Helsinki
HELSINKI
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ABSTRACT

This thesis elaborates on the challenges faced by the anti-mining movement in Brazil during the 2013-2017 period. By investigating anti-mining activism through the lens of social movement theory, the existence of individuals and groups embedded in a historical background is acknowledged. These individuals and groups often feel dominated by others, and thus construct meanings to influence and regain the resources those in dominant positions are using in their own interest. Furthermore, by using an environmental justice approach, I explain why these activist groups, in mining conflictual situations are fighting for environmental and social justice.

I claim the context in which activism happens is relevant for a better comprehension of activists' motives, strategies, and actions. In the Brazilian case, as this thesis work will show, a deeper understanding of activism reveals potential reflections and contributions. These reflections and contributions could be of interest to policymakers, practitioners and researchers involved in the interplay of mining and society. With that, I will provide research avenues to interpret anti-mining activism in terms of context, response, and influence. The research questions will be studied by approaching three major dimensions: the context in which activism sparked, how it has responded to

events connected to mining during the research time frame, and how it has influenced the overall mining sector.

The findings detail the historical context of rural conflicts and land struggle in Brazil, showing how rural activism and the context of natural resources conflicts connects to the anti-mining movement. This thesis contributes to understanding a period in Brazil accompanied by great rise in mineral production, and some consequences and adaptations connected to it. With the increase in the global mineral demand, and with the Brazilian economy also growing in an accelerated way, there has arisen the need for structural adjustments on the rules and mineral regulation reforms.

This thesis reveal links between the anti-mining activists and other activists struggling with rural and land issues. Furthermore, this thesis contributes to the social movement literature by highlighting the power of narratives and mobilization strategies displayed by the anti-mining movement in Brazil. This thesis has demonstrated how activists are challenging mainstream narratives provided by Governmental authorities and companies by counter-narratives. The push by activists of mining issues onto the national agenda, framing mining issues as social and environmental violations, and underscoring the need for more participation and recognition and rights has some implications. It opens up avenues to consider the relevance of activism in mining discussions and decisions, and, especially, to consider the quality of public participation in mining industry-related processes.

The issue of public participation in policy and decision-making processes raise questions about how democracy has been employed in practice. Mining companies often promote participation processes as part of the scope of their relationship with stakeholders and local communities. The capacity of an activist narrative to influence the political arenas, however, is still inconclusive.

In Brazil, the massive presence of social inequality in communities close to mining sites is pushing society to mobilize. As this thesis demonstrates, activism does not only show the need to advocate for more participatory and recognition rights for these communities, but concomitantly denounce governmental actions in cases where justice is needed. Moreover, as activists expose the inequalities correlated with rural struggles and promote this kind

of knowledge to larger audiences, mining disasters and other corporate shortcomings in Brazil are revealing the damage which can occur due to mining project risks and the societal context interlinks.

Keywords: social movements, mineral industries, social action, environmentalism, Brazil, Latin America, environmental justice, developing countries, dam failures, mining disasters, case method.

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TIIVISTELMÄ

Tämä väitöskirja tarkastelee haasteita, joita kaivostoiminnan vastainen liike Brasiliassa kohtasi vuosien 2013 ja 2017 välisenä aikana. Tutkimalla kaivostoiminnan vastaista aktivismia yhteiskunnallisen liiketeorian näkökulmasta voidaan yksilöiden ja ryhmien olemassaolo historiallisessa kontekstissa tunnustaa. Nämä yksilöt ja ryhmät tuntevat usein olevansa muiden hallinnan alaisina ja luovat siksi merkityksiä, jotta he pystyisivät vaikuttamaan ja saamaan takaisin niitä resursseja, joita hallitsevassa asemassa olevat käyttävät omaa etuaan ajaen. Lisäksi ympäristöoikeudellista lähestymistapaa käyttämällä pyrin selittämään, miksi nämä aktivistiryhmät taistelevat kaivostoiminnan ristiriitatilanteissa ympäristön ja sosiaalisen oikeudenmukaisuuden puolesta.

Väitän, että toimintaympäristö, jossa aktivismi tapahtuu, on tärkeä aktivistien motiivien, strategioiden ja toimien paremman ymmärtämisen takia. Brasilian tapauksessa, kuten tämä väitöskirjatyö osoittaa, syvempi ymmärrys aktivismista paljastaa mahdollisia pohdintoja ja myötävaikutuksia. Nämä pohdinnat ja myötävaikutukset voivat olla kaivostoiminnan ja yhteiskunnan vuorovaikutukseen osallistuvien politiikantekijöiden, ammatinharjoittajien sekä tutkijoiden kiinnostuksen kohteina. Tämän avulla avaan väyliä tulevaisuuden tutkimukseen, jotta kaivostoiminnan vastaista aktivismia voitaisiin tulkita kontekstin, reaktioiden ja vaikutusten alueilla. Tutkimuskysymyksiä

tarkastellaan lähestymällä kolmea pääulottuvuutta: toimintaympäristö, jossa aktivismi heräsi; miten aktivismi on reagoinut kaivostoimintaan liittyviin tapahtumiin tutkimusaikana; sekä kuinka se on vaikuttanut kaivosalaan kokonaisuudessaan.

Tulokset yksityiskohtaistavat maaseudun konfliktien sekä maankäyttöön ja -omistukseen liittyvien taisteluiden historiallista kontekstia Brasiliassa osoittaen, kuinka maaseutualueiden aktivismi ja luonnonvaroihin liittyvät ristiriidat kytkeytyvät kaivosvastaiseen liikkeeseen. Tämä väitöskirja auttaa ymmärtämään ajanjaksoa Brasiliassa, jolloin mineraalituotannossa nähtiin suurta kasvua, sekä joitakin siihen liittyviä seurauksia ja sopeutuksia. Mineraalien kysynnän noustessa maailmanlaajuisesti sekä Brasilian talouden kasvaessa kiihtyvällä tahdilla on syntynyt tarve rakenteellisille sääntöjen mukautuksille ja mineraalien sääntelyn uudistuksille.

Tämä väitöskirja paljastaa kaivostoiminnan vastaisten aktivistien ja muiden maaseutualueiden sekä maankäytön ja -omistuksen kanssa kamppailevien aktivistien välisiä yhteyksiä. Lisäksi tämä väitöskirja tuo panoksensa yhteiskunnallisten liikkeiden kirjallisuuteen nostamalla esille Brasilian kaivostoiminnan vastaisen liikkeen esittämien narratiivien ja mobilisointistrategioiden voiman. Tässä väitöskirjassa osoitetaan, kuinka aktivistit haastavat hallituksen viranomaisten ja yhtiöiden tarjoamat valtavirran kertomukset vastanarratiivien avulla. Aktivistien aikaansaamalla kaivostoiminnan ongelmien ajolla kansalliseen agendaan, kaivostoiminnan ongelmien määrittelyllä yhteiskunnallisiksi ja ympäristörikkeiksi sekä korostetulla tarpeella lisätä osallistumista, tunnustamista ja oikeuksia on vaikutuksensa. Se avaa mahdollisuuksia pohtia aktivismin merkitystä kaivostoimintaan liittyvissä keskusteluissa ja päätöksissä, sekä erityisesti sitä, kuinka julkinen kansalaisten osallistumisen laatu otetaan huomioon kaivosteollisuuteen liittyvissä prosesseissa.

Kysymys kansalaisten osallistumisesta käytänteiden ja päätöksentekoprosesseihin herättää kysymyksiä siitä, miten demokratiaa on käytetty käytännössä. Kaivosyhtiöt usein mainostavat osallistumista osana suhteidensa ylläpitoa sidosryhmiin ja paikallisyhteisöihin. Aktivistin narratiivin kyky vaikuttaa poliittisilla areenoilla on kuitenkin edelleen epäselvä.

Brasiliassa sosiaalisen eriarvoisuuden valtava läsnäolo kaivosalueiden lähellä olevissa yhteisöissä ajaa yhteiskuntaa liikkeelle. Kuten tämä väitöskirja

osoittaa, aktivismi ei ainoastaan paljasta tarvetta puolustaa näiden yhteisöjen osallistumis- ja tunnustamisoikeuksia yhä vahvemmin, mutta samanaikaisesti tuomita hallituksen toimet niissä tapauksissa, joissa oikeutta tarvitaan. Lisäksi, kun aktivistit paljastavat maaseutualueiden haasteisiin liittyvää eriarvoisuutta ja edistävät tämänkaltaisen tiedon levittämistä suuremmille yleisöille, kaivosonnettomuudet ja muut yritysten puutteet Brasiliassa paljastavat vahinkoja, joita voi aiheutua kaivoshankkeisiin liittyvien riskien ja yhteiskunnallisen kontekstin yhteenliittymistä.

Avainsanat: sosiaaliset liikkeet, kaivosteollisuus, ympäristöaktivismi, Brasilia, Latinalainen Amerikka, ympäristöoikeus, globaali Etelä, kehitysmaat, kaivokset, kaivosonnettomuudet, tapaustutkimus

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“A smooth sea never made a skilled sailor” (Unknown)

The decision of leaving Brazil and pursue the dream of getting a doctoral degree and career in Europe was not easy. It took me years to start this journey and several others to finally come to this moment. Giving up was never a choice, but now I know that it could have been smoother.

First and foremost, I am deeply grateful for my first job as a research assistant, still during my bachelor’s. Professor Ricardo Correa Gomes, words will never be enough to explain how much that job has shaped my career in the organizational studies, corporate social responsibility, and sustainability fields. You never stopped supporting me, always encouraging me to take further steps, showing trust and excitement in my academic career. Thanks for helping out even now, during the end of my Ph.D. studies.

Then, I’d like to show my gratitude for everything I’ve learned during the years I collaborated with Dr. Robert Boutilier. We met by chance and developed a very long partnership that is somehow partly responsible for me ending up in Finland. Thanks also for reading earlier versions of this book with sharp comments.

Happily, throughout the doctoral studies journey, I had fully emotional support from my parents, Marisa and Jocymar, my brother, Pedro, my godparents, Marleuza and Luiz Otavio, and my grandma, Elza. Over these years, they have witnessed every small achievement and all big frustrations that are part of a Ph.D. endeavor. They did that in a very beautiful and patient way, encouraging me to continue, asking me to be calm during storming times, and without having a clue of what I was “studying”. All this love and support is so fundamental in my life that nothing would make sense without them. They give me space and freedom to be and do whatever I want, and unconditionally stand by my side every step of the way. I love you all. You’re a big part of this work.

And because the path is made by walking ("**caminante, no hay camino, se hace camino al andar**[1]"), surprises come along the way. Meeting Mareena Hyypiä is one of these magical unplanned moments. Her support, love, company, and lack of patience with this long journey pushed me through it in the final years. Especially during the pandemic, Mareena and her parents, Ulla and Jari, have helped me to keep firmly in my purpose and not missing my family so much by welcoming me in theirs. The gatherings, holiday celebrations, small trips, and family time we shared have made all the difference in my days (years!) in Finland. I am very grateful for that and for the moments that are still to come.

All my years of doctoral research were proudly followed by an employment relationship with the University of Eastern Finland. First, in the Department of Geographical and Historical Studies, and then, with the Business School. I want to thank all my peers and supervisors (Rauno Sairinen, Tuija Mononen and Daniel Franks) for their support and comradery. Especially, I thank Professor Rauno Sairinen, for the invite to come to work in Finland. Not only my supervisor, Rauno was also my boss for several years. Thank you for all the projects and events we have done together during this time.

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I am deeply grateful to my friends Mariana Verdonen and Noora Rämo. My life in Joensuu can be divided before and after meeting you two. Thanks for everything. I've found in you guys so much support, friendship and fun, that I hope distance never breaks our bonds. Verdonen believes Noora is lucky for being "between Marianas", but I've always known that in this triad I am the fortunate one.

To all the other Ph.D. students I've met along the way, inside and outside UEF: thank you for the peer support! The list is long and I'm afraid I will forget to mention some of you. You know who you are.

[1] Machado, A. (1973). *Caminante, no hay camino*. Quimantú.

From my fieldwork in Brazil, I thank all the interviewees and colleagues I've met during intense months of research and networking in a new field. Unfortunately, due to confidentiality agreements, I cannot cite your names here.

From my research visit at Scuola Normale Superiore in Florence (Italy), I thank my co-supervisor Adjunct Professor Tuija Mononen for the suggestion to apply to go there in the first place. I feel grateful for being welcomed by Professor Donatella Della Porta and learning so much from her and her team. I'd like to thank especially Professor Manuela Caiani for the fundamental Methodology classes and Professor Lorenzo Mosca for inviting me to discuss Latin America in the Seminar on movement parties in time and space. I'm also grateful for the fact I made friends for life there – Dr. Lara Monticelli, who was a brilliant postdoc at the time, and Fatima Ruberte, a Spanish Erasmus student, and my neighbor in Firenze.

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Over these years, I had the privilege to join so many conferences, workshops, and to teach and be a student in so many classes and courses. I have met so many nice and smart people, that I took some of them for life. What can I do? I am a very social person! Dr. Leonardo Custódio, **meu amigo querido**, I am so happy our paths have crossed in the early stages of my Ph.D. journey. I will take our friendship as a symbol of all other random encounters I've had in academia that ended up being fundamental to emotionally support me along the way.

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If you just came across this book by chance, without knowing me, I want to thank you for your interest in my research and to let you know that this thesis was written by an LGBTQIA+ person.

Helsinki, 16th of August 2021
Mariana Galvão Lyra

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PREFACE

Since the beginning of my professional life, I have been involved in academic activities, but also closely connected to corporate life working as a sustainability consultant. I have spent ten years researching and working on corporate social responsibility, corporate sustainability and conflicts between companies and local communities in different industries such as energy, forestry, and mining in Brazil. As I have a bachelor's and master's degree in business administration, I have always looked at the relationship between companies and communities from corporate, organizational, and institutional standpoints. Thus, I have used tools and frameworks coming from organizational and management literature. Through my training, I have learned that international standards contain the available best practices. These would then be a suitable way to deal with local conflicts coming from social and environmental impacts provoked by industrial activities.

Nevertheless, after all these years of experience as a sustainability consultant, I realized through practice that using only corporate lenses to analyze conflictual issues was too much of a narrow approach, leaving many other factors, actors and interrelational dynamics out of the question. Therefore, when designing my Ph.D. project, I was interested in learning more about mining conflicts from the perspective of the community and societal structure. For that purpose, I made efforts to deconstruct the biases arising from my experience and academic background when needed. In order to conduct doctoral studies in environmental policy, it was useful to learn from different academic bodies of literature.

In 2016, I took courses on social movement theory and methods at the Institute of Humanities and Social Sciences at Scuola Normale Superiore, Florence, Italy under the supervision of Donatella Della Porta. In 2017-18, I was a visiting researcher at the Institute of Environmental Science and Technology at the Universitat Autònoma de Barcelona (ICTA-UAB), Barcelona, Spain under the supervision of Mariana Walter. I have worked there with the Environmental Justice Atlas (http://ejatlas.org) and deepened my knowledge of environmental justice and environmental justice movements. I also took

PhD courses related to the minerals sector at Luleå (2014) and Bergen (2016) Universities under the NordMin Nordic Network of Expertise for a sustainable mining and mineral industry scheme.

In Finland, I had the opportunity not only to walk away from the management and organizational literature but to learn about policies and governance of natural resources. Additionally, I was able to see and understand Brazil from a new prism. That led me into deep reflection, and I drew novel conclusions for the research. By seeing Brazil from a new standpoint and with a broader perspective, the research reached new pathways and outspread in a way that it is relevant not only for academics studying mining and its consequences in Brazil, but also for researchers interested in social movements and environmental justice, practitioners and scholars engaged in the social-scientific approaches to mining research, and policymakers interested in civil society's participation in mining projects, conflicts and national debates.

During the course of the research, there was interest from my peer academics as to whether I saw myself as an activist or not. During my fieldwork in Brazil, however, from the interviewees, their questions were an attempt to understand whether I was connected to a company or consultancy group investigating social movements in Brazil.

It is interesting to note how the perception of others over my positionality changed depending on who I was talking to. The research-participant relationship can raise ethical challenges. These challenges will be discussed in Chapter 4: Methods. Disagreements among different parties such as the participants, researchers, or even disciplines may be inevitable (Truscott, 2004). Usually, in qualitative studies, researchers play many different roles and deal with sensitive topics in depth. Therefore, emotional, and other risks are exposed both to the research participants and researchers (Sanjari et al, 2014).

My position and interest, however, was away from these perceptions. I was guided by scientific curiosity and to meticulosity delve into fieldwork to understand the anti-mining movement and the societal context in Brazil. Through a multidisciplinary theoretical framework, I was then able to explain it.

1 INTRODUCTION

1.1. WHY A THESIS ON ANTI-MINING ACTIVISM IN BRAZIL?

This thesis is about the recent developments of the anti-mining movement in Brazil during 2013-2017. The research discusses and analyzes the societal context in which the movement took place, the activists' responses to mining events, and the results of activism efforts. The research sheds light on the key challenges faced by groups fighting for more environmental and social justice in mining conflictual situations. It then makes recommendations for further considerations in mining conflicts, towards a deeper comprehension of activism. The thesis is based on scientific research that has been carried out within the context of the social scientific mining literature, with a particular emphasis on social movements and political ecology. The theoretical standpoint that I have chosen to apply to this framework is the social constructivism approach from social movement theory, complemented by the environmental justice approach from the field of political ecology.

By investigating anti-mining activism through the lens of social movement theory, I acknowledge the existence of individuals and groups embedded in a historical background. These individuals and groups often feel dominated by others, and thus construct meanings to influence and regain the resources those in dominant positions are using in their own interest (see. Touraine, 2006). Furthermore, by using an environmental justice approach, I explain why these activist groups, in mining conflictual situations are fighting for environmental and social justice. I claim the context in which activism happens is relevant for a better comprehension of activists' motives, strategies, and actions. In the Brazilian case, as this thesis work will show, a deeper understanding of activism reveals potential reflections and contributions. These reflections and contributions could be of interest to policymakers, practitioners and researchers involved in the interplay of mining and society.

The research background lies within the context of mining conflictual situations in Brazil. The literature already provides substantial research on

mining conflicts, resistance, and acceptance of projects. My main argument is that anti-mining activism has been established on top of historical roots from previous struggles not only related to natural resource use, but also inherent to persistent social and economic inequalities present in Brazil.

Two cases in particular will be used to interpret the activists' responses. The first is the mining code draft discussion from 2013 to 2015. The National Congress started to discuss a new mining code in Brazil and this decision has provoked a chain of countermoves from the activists. While pushing for more participation in the mineral debate, the activists also elaborated ways to validate their objectives by attempting to include environmental and social safeguards in the mining framework. The second case is about the activists' responses to the Fundão dam failure and its aftermath. The tailings dam failure happened in November of 2015, resulting in 19 deaths, and several social and environmental impacts. The affected communities, the Doce river, the Atlantic Ocean, and the surrounding fauna and flora suffered from the consequences of the tailings dam failure. Activists sought justice for the victims and uncovered many layers of intricated relations and processes involving public authorities and mining companies in Brazil. They utilized the national and international projection of the event as a means to broaden their audience and amplify the access to information on their goals.

On the basis of an analysis of the activists' strategies and actions, this thesis offers conclusions which are applicable in the context of natural resource conflicts. The rather exclusive analysis of anti-mining activism in Brazil also means that the thesis contributes to the deeper understanding of social movements in that particular context. Not much attention has been paid to how Brazilian rural movements are interconnected and cross-influence each other (Blanc, 2019). By interpreting anti-mining movements, my focus is twofold: the thesis offers a critical examination of the context in which mining is happening through the activists' actions and construction of meanings. Concurrently, it interprets the anti-mining movement through the lens of environmental justice studies.

I will begin by characterizing the context in which anti-mining movements were sparked in Brazil. The research period encompasses the period between 2013-2017, when the country was facing a bust phase and the consequences

of its most recent commodities' boom. From (approximately) 2002 to 2013 Latin America faced a new cycle of gigantic increases in the global mineral demand, especially from China. As a consequence, countries such as Peru, Chile and Bolivia had improved their participation in the global production network, with new operations in the oil & gas and mineral extraction industries (Bebbington, 2005; Santos and Milanez, 2015; Carvalho, 2018).

The Brazilian economy, at the same time, was also growing at an accelerating pace (MME 2011; DNPM, 2018). One of the interpretations of this outcome relies on the rise of the commodity prices such as oil and iron ore (Carvalho, 2018). This is closely connected to the steady growth of the Chinese economy and the rising demand for commodities. For example, in 1990 Brazilian iron ore represented only 2% of China's imports. Almost twenty years later, in 2009, this percentage rose to 59% (MME, 2011). More recently, in 2016, 31.93% of the main metals in Brazil were exported to China (DNPM, 2018).

In 2013 Brazil was the seventh world economy with a GDP of US$2.4 trillion, and a growth of 2.3%. The unemployment rate was 6.6%, and the foreign direct investment was US$64 billion for the same period (Ministério da Fazenda, 2014). Brazilian mineral production increased by 780% between 2001 and 2010 (MME, 2015). Pará and Minas Gerais states are, combined and in this order, the two largest mineral producers in Brazil. Together they were responsible for 86.5% of the overall domestic mineral production in 2016 (DNPM, 2018). Iron ore is the main metal concentrated and explored in those areas. In 2016, eight metals were responsible for 98.6% of the whole traded national production. These were: aluminum, copper, tin, iron, manganese, niobium, nickel, and gold (DNPM, 2018).

Therefore, the mining economy is relevant in Brazil for two reasons. Firstly, because the Brazilian economy has and has had for a long time a strong focus on exporting commodities. That was intensified with the growth in demand from China, especially when that country consolidated their economic potential and became a provider of industrial goods globally (Cruz et al., 2012). Secondly, Brazil has mineral reserves and frontiers which are still unexplored. As the demand for minerals increased, there was a push to grant permission for mineral exploration in conservation and indigenous peoples' areas. More precisely, congress members were regularly proposing

draft bills to make it possible for mining explorers to operate in conservation areas (Villen-Perez et al., 2018).

The recent commodities' boom in the early 2000s was marked by a rapid expansion of operations in the extractive sector, followed by economic and legislative changes, accidents in the mining sector, and an increase in protests against mining projects and operations.

The expansion of mining operations had an important influence on the political aspects of the economy in Latin America (see, for example, Bebbington, 2012). It is important to acknowledge that mining is known as an economic activity that boosts domestic economic growth (Katz and Pietrobelli, 2008; Bebbington et al., 2008; Hilson, 2009). During the latest commodity boom, several countries saw injections to their economy coming from mineral extraction (Yu, 2011; Ge and Lei, 2013).

At the same time, several Global South countries that embraced the boom had to recognize that their legislative apparatus was, in many cases, out of date in terms of mineral legislation (Chaparro, 2002; Bridge, 2004). Structural adjustments on the rules and mineral regulation reforms were needed. Many amendments and changes within the mineral regulatory framework have thus happened. It was an opportunity to also update some of the regulations in regard to sustainable development trends. This is the case in many Latin American countries, such as Chile, Bolivia, Peru, Venezuela, and Brazil.

It is clear that not only had the policy and lawmakers to adapt and quickly learn during the period of rapid acceleration surrounding the mineral industry, but so did other professional groups, as the scholarly community and activists (Bebbington, 2015). One of the mining boom consequences was the intensification of 'controversy' that has always surrounded mineral extraction (Bebbington et al., 2008; Zhouri and Valencio, 2014; Svampa, 2019). Such controversy is exemplified in terms of a) the uneven distribution of risks and benefits at the local level; b) local land use versus the use of land for the expansion of multinational projects; and c) the still remaining question on whether it is possible to consider mining exploration a sustainable and equitable activity.

Even though the sustainability debate is growing in Brazil and has advanced both at the governmental and corporate levels, there is still much to do. There

is still a way to go before companies effectively follow international standards on environmental conservation and human rights protection. The mining industry has seen several significant failures and disasters in recent years (Rico et al., 2008; Azam and Li, 2010; Sairinen et al., 2017; Quastel, 2017) with severe environmental and social consequences. Not only in Brazil and other Global South countries, but nations such as Finland and Canada also witnessed dam failures followed by suspiciousness and resistance (see, for instance, Sairinen et al., 2017; Quastel, 2017).

Mining conflicts have been solidly investigated through time and space (Hilson, 2002; Kemp et al., 2011; Özkaynak et al., 2012; Franks et al., 2014; Conde 2016; Conde and Le Billon, 2017). They happen no matter what the national level of development or good governance status are, from Australia (Solomon et al., 2008; Zhang et al., 2015) to Canada (O'Faircheallaigh, 2010; Laforce et al., 2009), Finland (Suopajärvi, 2013; Sairinen et al., 2017), Namibia (Littlewood, 2014), South Africa (Adler et al., 2007) or Latin American countries with mining exploration (Bebbington and Williams, 2008; Zhouri and Valencio, 2014; Helwege, 2015). Mining conflicts happen in all of those places regardless of the scale (artisan or multinational operations), project sponsors, or community members. How these conflicts are handled, however, may differ significantly from one country to the other, and from one case to another (Helwege, 2015; Zhang et al., 2015; Conde 2016).

In Brazil, the Fundão and Brumadinho dam failure episodes and their aftermaths in 2015 and in 2019, respectively, illustrate how activists use corporate performance gaps to put forward their goals. Consequently, not only improvements in corporate realms are encouraged to better address sustainability demands. Likewise, companies need to convey a deeper understanding on why and how activists are trying to push for more environmental and social safeguards and justice in mining.

Activism and resistance to projects cannot be interpreted in a simplistic way, nor can they be ignored anymore, for that matter. Anti-mining activism has to do with aspects of the controversy that are sometimes present in mining operations. The resistance of some groups cannot be merely translated into or interpreted as the non-acceptance of the existence of mining industry, for example. Nor can this be interpreted as an obliviousness towards the

relevance minerals and metals have in our current society. Instead, for the purpose of this research, anti-mining activism is considered an inherent part of the Brazilian societal context. In particular, anti-mining activism is considered part of the social movements and conflicts context. This line of thinking follows Touraine's (2006) suggestion that the most relevant conflicts are in the cultural realm and in the historical context of a given society. When studying social movements, one has to position the conflict within the boundaries of society, expressing the most relevant social relations (Touraine, 2006).

With that, I will provide research avenues to interpret anti-mining activism in terms of **context**, **response**, and **influence**. The thesis will bring about evidence of the context in which activism has been established in 2013-2017 in Brazil. It will convey activism as a response to events connected to mining in Brazil (including draft mining code discussions and the Fundão dam failure aftermath) and it will interpret the influence of activism on mining discussions, activities, and decisions in the societal context of Brazil.

The activists' responses in this study have consisted of strategy and actions that have taken place when they construct and communicate power. Power is also grounded in the subjective realm, and it is relevant to the interpretation of ideology and grievance. The dispute over meaning are differences regarding conceptions of power (Benford and Hunt, 1992)—while activists contest the definitions of a given situation, institutional elites seek to maintain their homogeny and control the agenda.

1.2. RESEARCH APPROACH, TASK AND QUESTIONS

The main research task of this thesis is to understand how activism has been established and developed in Brazil terms of actions and strategies vis-à-vis mining events that occurred in the 2013-2017 period.

The main research task will be approached by seeking answers to the following research questions:

1. How anti-mining activism was established in the Brazilian context during the 2013-2017 period? (RQ1)
2. What kind of anti-mining activism strategies and actions took place as a response to events connected to mining that happened in Brazil from 2013 to 2017? (RQ2)
3. How should the anti-mining influence on the mining sector be interpreted given the current Brazilian societal context? (RQ3)

Because the literature has paid little attention to theories about national anti-mining movements, the research questions are phenomenon driven (Eisenhardt and Graebner, 2007) and hence broadly scoped. The goal is to answer the research questions by paying deserved attention to the anti-mining movement as a phenomenon and disclosing the activists' own voices. This will be complemented with viable theories to support a deep understanding of the phenomenon and rich empirical evidence.

The research questions will be studied by approaching three major dimensions: the **context** in which activism sparked, how it has **responded** to events connected to mining during the research time frame, and how it has **influenced** the overall mining sector. The first dimension is concerned with how the anti-mining activism has been established in Brazil and how it grew from 2013 to 2017. In this dimension the aim is to shine a light on sociological and policy processes evidencing the context in which anti-mining activism was sparked in 2013. That was the year when activists recognized the start of their activities at the national level. I will introduce how the development of their activities and strategies took place vis-à-vis mining developments in the country. I will do that by taking into consideration how other resistance efforts have influenced the anti-mining movement.

The second dimension will scrutinize what kind of anti-mining actions took place as a response to mining events from 2013 to 2017. Two cases in particular will be analyzed: the discussions around the mining code draft and the aftermaths of the Fundão dam disaster. The effects of these cases

on anti-mining activism are explored through a two-fold focus on social movements and environmental justice studies.

Finally, the third dimension will investigate the influence the activism efforts have had on the overall mining sector. Influence here is connected with studying how successful the anti-mining movement was in terms of affecting other parts engaged or interested in mining affairs (i.e. discussions, activities, decisions) during the research time frame.

In this research, activism refers to collective actions targeting mining issues taken by social movements, resistance, struggles, and waves of protests (see for example, Bebbington 2008; Urkidi, 2010; Walter, 2014) in Brazil. Activism as a concept is usually found in the social movement literature associated with their particular type or focus (see for instance, Taylor and Dyke, 2004; Pleyers, 2020). Examples of such movements include: cyber activism, feminist activism, and black activism. To choose a particular type of activism for the current research means to describe the anti-mining movement participants in a specific frame.

The mining and society literature usually use the term anti-mining without a proper definition or explanation around it. It is used, for instance, to qualify a particular conflict, struggle, protest or set of resistance actions against a mining company or project (Urkidi, 2011; Velicu and Kaika, 2017). It has been argued before that even though the literature provides significant insights into resource governance and contestation, the nature of activism and the activists themselves are still understudied (Jenkins, 2015).

Considering that social movement scholars "**do not have a monopoly on theory about movements**" (Bevington and Dixon, 2005 p.194) and considering that activists have an active role in reflecting and theorizing about movements, I will formulate the concept of activism for this thesis. For the effects of this study, activism is defined as actions planned and performed by societal organizations, citizens, academics, affected communities and participants in social movements. The activists, as people carrying out activism, act in an orchestrated manner in hope of change. This is close to what Daniel Franks called "**campaigners**" or in this case change-agents outside the mining industry creating the political climate (Franks, 2015) and pushing for transformation. Activism also involves the intellectual processes

and outcomes that take place in meetings, events, discussions, and training where activists reflect on their strategies and actions. These processes and outcomes are not found in the literature but in the "**vibrant means through which activists are self-consciously analyzing movements**" (Bevington and Dixon, 2015 p. 194).

In terms of the mining focus for the thesis, the study concentrates on iron ore exploration. This mineral is relevant in the Brazilian economy, and also target of recurrent conflicts. Iron ore operations and their open-pit mines have a significant impact on exports and the domestic economic balance (Carvalho, 2018). At the same time, different anti-mining groups are being forged around conflicts at iron ore extraction sites. This is the case groups such as the International Articulation of People Affected by Vale, the NGO **Justica nos Trilhos**, and other local groups close to iron ore exploration sites in the Minas Gerais and Pará states.

Under which context and influences was the anti-mining movement established in Brazil (RQ1)? It is important to ask if social movements opposing mining have connections or links to other social movements. Based mainly on historical evidence, some interpretations, and hypotheses about the beginning of mining activism can be made. This overview provides relevant background and context information about national social movements and struggles in Brazil and the reasons that have favored the hatch of anti-mining activism.

The strategies and actions mentioned in RQ2 refer to happenings involving activism planning and executing a repertoire of actions regarding mining issues. The response refers to the kind of reactions prompted by activists due to action promoted by mining companies and/or the authorities (Hanna et al., 2016). Events which occurred between 2013-2017 gained rapid national (and sometimes global) attention and caused activist responses. In the case of this current research, I analyze the mining framework draft discussions and the Fundão dam failure aftermath.

The objective is to delve deeper into anti-mining activist practices that took place in Brazil. The analysis will be performed by using a social constructivism approach utilizing social movement theory and studies on environmental justice. Activist strategies and actions in response to certain events connected

to mining will be analyzed. The events connected to mining consist of two case studies, which are: 1) the anti-mining Coalition formation in response to the mining code draft discussions in 2013; 2) the activists' responses to the aftermath of the Fundão dam failure in 2015.

These cases were chosen due to their relevance in the Brazilian mining context during 2013-2017. The first is a good example of how activists mobilize themselves and their allies around their claims and the willingness to influence the mining code draft. The second was a local disaster that quickly escalated to national and global levels. Likewise, the activists' responses were on multiple level and in multiple directions, fighting for justice for the disaster's victims.

Participation in mining discussions and the distribution of costs and benefits related to mining activities are common claims from anti-mining movements in general. By choosing these cases it will be possible to interpret how those claims were made in the Brazilian context of anti-mining activism and how they have influenced the context (RQ3). The influence of activism on mining will be analyzed in terms of the efficacy of mobilization and collective action as part of the anti-mining movement outcomes (c.f. categorization of movement outcomes suggested by Staggenborg, 1995).

The current research follows a recent debate in mining and society regarding the role of activism in mining conflicts. Activism has been at times considered a minor part of local community resistance to mining project and operations. Conflictual mining relations have been mostly investigated through cases at the local level (Kemp et al., 2011). From the environmental justice studies perspective, 'global' investigations making use of atlases and databases are growing (Caniglia, 2011; Global Witness, 2014; Martinez-Alier, 2016; Martinez-Alier et al., 2016; Del Bene et al., 2018; Scheidel et al., 2020; Özkaynak et al., 2021). The role of activism at the national level, however, has not been of much attention. There is a gap in the literature on how activism influences debates, activities, and decisions around mining at the national level.

The theoretical framework for the thesis touches upon different fields of social sciences, especially concentrating on social movements and, on the other hand, on environmental justice studies. I consider this work as part of the social constructionist realm of social movement theories (e.g. Eyerman

and Janison, 1991; Melucci, 1995; Kane, 1997; Oliver and Strawn, 2003; Travaglino, 2014; Drury, 2015). The social constructionist approach rises in opposition to the rational approaches, such as resource mobilization, which have analyzed movements based on the utilitarian, instrumental tradition (Drury, 2015). Instead, social constructionist scholars are interested in the domains of identity and the construction of meaning (Benford and Hunt, 1992; Klandermans, 1992; Mulucci, 1995; Kane, 1997). In other words, it corresponds to a shift towards new questions about how people make sense of their world and how they perform activism practices to create meaningful interpretations of reality (Melucci, 1995).

The integration of environmental justice studies is due to its focus on environmental struggles and activism, especially in Global South countries, where communities defending their territory and the environment consider themselves subject to injustices than other groups (see for example, Martinez-Alier, 1991; Guha and Martinez-Alier, 2013; Martinez-Alier, 2016; Scheidel et al., 2020). Within this perspective, there is a recent current of research on environmental justice focusing on anti-mining activism (e.g. Martinez-Alier, 2001; Bell and Braun, 2010; Urkidi and Walter 2011; Özkaynak et al., 2012; Walter, 2014; Malin, 2015; Velicu, 2019). Thus, even though environmental justice is one of the theoretical basis for this study, the study will not focus on developing a larger theoretical understanding of environmental justice itself.

The research aims to develop a greater theoretical yet empirically founded account of the integration of social movements and environmental justice using social constructivist lenses of analysis. Using Brazil as context, it will allow the understanding and appraisal of anti-mining activism, their claims and grievance mechanisms at the national level.

As this thesis will demonstrate, anti-mining groups are learning from previous struggles and incorporating the lessons into their modus operandi. Activists are mostly reactive to scenarios and momentum, creating their own interpretation and meanings for events, as the cases conveyed in this study will illustrate. The main claims of the anti-mining movement will be interpreted as ones of environmental justice. This is suitable since activists are fighting for more justice and better environmental and social safeguards for mining projects, as well as frameworks, operations, and disaster recovery.

I argue that the context not only matters but it is fundamental to understanding why and how groups protest against mining. Furthermore, a better comprehension and appreciation of anti-mining movements as part of the social tissue of a given society are necessary to grasp how mining discussions, activities and decisions occur.

There is a need to better understand some realms of conflicts that are posing challenges to the mining industry. One realm to acknowledge is, for example, the fact that social movements lie inside a social system questioning its dominant forms and their political and cultural supporters (Touraine, 2006). Social movements are associated with struggles, but they emerge from the analysis of how societies function in practice.

Another relevant realm is the activist involvement with national and/or international reach. Some scholars are making use of multi-scalar analysis to understand the ways in which extraction affects various aspects environmental justice (Urkidi, 2010; Urkidi and Walter, 2011; Walter, 2014; Ryder, 2018). For them, this approach is a way to understand environmental justice as multi-scalar and context related (Urkidi and Walter, 2011). That would consist of making use of the political ecology framework, anchored on politics of scales studies to analyze environmental justice across multiple and intertwined scales (Walter, 2014). For example, Urkidi (2010) discussed the effect of anti-mining movements in political arenas. She concluded that 'jumping-scale' strategies are a critical factor for the outcomes of anti-mining movements. In other words, raising a local issue up to a national or international scale has been a successful strategy for anti-mining activists. Hence, more attention is needed towards national scale activism and its potential political implications (Urkidi, 2010).

1.3. RESEARCH SETTING AND BACKGROUND

The complex interplay between mining and society

The connections between mining and the societal actors involved have been evolving across time and space. The relationships involving mining companies, the state and the community have been defined elsewhere as a 'conventional triad' to explain and analyze the 'mining community' (see, for

example Ballard and Banks, 2003; Pijpers and Eriksen, 2019; Golub, 2019). The relationship between these different actors in the realm of the mining community has been often portrayed by conflicts that range from ideological opposition to armed conflicts. Even though the conventional triad has been useful to identify key agents and their interests, the reality is more intricate than that. The mining community has developed into a broader set, including, for example national and international NGOs, thus increasing its internal complexity over time. (Ballard and Banks, 2003)

What was then considered a conventional triad of 'monolithic' entities, does not describe actual relations between mining and society. This poses new challenges and reflexive processes to mining and society researchers. One consequence of this momentum is the growing attention to processes of negotiation, especially in regard to access and control over resources. It encompasses the dynamics of actors positioning and repositioning themselves aiming to safeguard their interests (Pijpers and Eriksen, 2019). Another consequence is the increasing difficulty and uncertainty to discern responsibility for mining processes and effects (Golub, 2019). For example, some mining social and environmental changes make it hard to determine where a process has begun or who had started it. Finally, scholars are also acknowledging the controversial proposition implicit in some monolithic dynamics, such as the idea that communities have the power to rival the state and mining companies (Boutilier, 2020), for example.

The extraction of natural resources is key for development and it is commonly associated with potential social and economic benefits at the local and national levels. For example, some governments in Global South countries have decided to invest substantially in extractivism as means to provide the social reforms that are still needed in those countries (Acosta, 2013; Svampa, 2019). The idea of natural resources exploration as a pathway for increasing development in such countries was encouraged by international agencies such as the World Bank (Campbell, 2003). Nevertheless, the distribution of costs, risks, and benefits at the local level have been contested in terms of equity by local community members and resistance movements. In fact, the idea of the mining industry as a development industry is ambitious and it is not shared by all actors in the societal structure (Franks, 2015). These

differences and alternative ways of seeing what is better or not for a given territory have to be more acknowledged.

The question of how much economic development mining operations can bring to the communities at the local level is an example of divergence of judgment (Acosta, 2013; Brand et al., 2017). Tourism and rural work, for example, are activities performed at the local level that commonly take place before mining projects started. Some locals might believe these economic alternatives are better than the potential benefits mining could bring because the local economy is already revolving with activities other than mining.

How positive or negative the impacts of mining activities will be in the socio-economic development of a given country depends greatly on the quality of public and private institutions (Dougherty, 2016). Accordingly, mining activities can be a challenge for local and national governance due to corruption and lack of transparency. Such deviations prevent good governance in some countries, favoring private interests in public matters (see. Bebbington et al., 2008). Political power and incentives, when not limited by institutional apparatus allow perverse incentives to dominate the political arena, potentially leading to negative consequences (Robinson et al., 2006).

On the other hand, mining and society studies show that communities around mining are growing in importance as governance actors (Prno and Slocombe, 2012). Consequently, the dynamics around mining companies and communities, and mining development more broadly, cannot be fully explained by conventional and monolithic approaches (Solomon et al., 2008). Prno and Slocombe (2012) suggest that novel approaches should take into consideration the social, political, and economic contexts in which mining projects are embedded.

Grassroots organizations and environmental NGOs, for example, usually mobilize themselves in reaction to the shortcomings of powerful actors. These reactions include challenging governmental policies and practices. Additionally, environmental NGOs are stronger when targeting companies that are failing to meet social justice and environmental conservation issues (Bryant and Bailey, 1997). In Latin America, for example, several movements are fighting for justice, against violence and impunity, some of which have

a strong focus on the struggle for a different economic model (Treré and Pleyers, 2015).

Environmental movements acting in extractive conflicts in Latin America are considered relevant to social movements and environmental justice research, and also for the development of extractive industries (Walter, 2014). This is because environmental justice movements are not only criticizing environmental issues, but also the political processes responsible for creating those issues in the first place.

The power imbalance in the case of mining companies and local communities concerning the extractive industry has been constantly studied and acknowledged (see, for instance, Kirsch, 2002; Coumans, 2011; Maher, 2014; Santos and Milanez, 2015). Nevertheless, despite growing efforts to bring about change, the available mechanisms to promote greater justice when a mining conflict or disaster occur are still being questioned by scholars (see, for instance, Kemp et al., 2011; Owen & Kemp, 2013). While it is clear that extractivism involves power imbalance, uneven distribution of profits and risk perceptions/realities at the local level, how to build and sustain an effective dialogue, allowing participation to communities and other societal actors remain a question.

For much of history, miners have seen themselves as creating new wealth and providing the essential raw materials that enable human endeavor and way of life. Beginning in the early 1970s and continuing to the present day, mining has been under persistent pressure to change as society in general has come to realize the cumulative effects of unconstrained development and population growth.

By the late 1990s, the mining was an industry whose role and contribution to society were in question in many parts of the world with permits to operate more difficult to obtain from the regulators, and well-organized opposition to new mining developments (Thomson and Joyce, 2006). In the 1990s the mining industry was facing challenges to continued operation in many countries around the world. Mining had become a pejorative term in many circles (Schloss, 2002) and widely regarded by the general public as a problem industry that was the cause of unwanted pollution and undesirable social

impacts. This reputation was deeply rooted in public opinion, widely shared by opinion formers, and constituted a liability for the industry (Schloss, 2002).

In order to change that, a broad discussion had begun on the role and relationship of mining to sustainable development (e.g., Ackerman, 1998; Auty and Mikesell, 1998; McAlister et al, 1999). At the same time, larger mining corporations introduced new policies and procedures to address the ongoing pressures regarding environmental performance and the newly emergent social, socio-economic, and cultural issues. A number of CEOs of the leading companies recognized the severity of the challenge and the need for action (Danielson, 2006).

At the same time, the 1990s also saw several high-profile environmental disasters in the mining industry. Howitt and Leonard (2009) examined how these disasters changed the corporate culture of mining companies in different ways. The industry had begun experiencing project stoppages and delays, mostly caused by blockades by disgruntled communities.

As a result, several international standards and guidelines started to take place from the late 1990s onwards. The mining industry has developed specific guidelines to improve corporate performance according to these new global demands. The abundance of initiatives and practices show that international organizations and industry-led efforts are engaging more and more with topics of current relevance, such as human rights, sustainable development, and transparency. This is pushing the mining industry into adaption and transformation around these new demands. For example, the Extractive Industries Transparency Initiative (EITI) developed a global standard for good governance focusing on promoting open and accountable management of extractive resources. In practice, it works as an anti-corruption mechanism for signatory countries.

A similar initiative towards greater transparency but aiming at corporations is the Global Reporting Initiative (GRI). The GRI guidelines are followed by companies interested in disclosing non-financial information about environmental, social, and governance issues.

Attempting to address some of the inherent risks encompassing the mining industry and their associated consequences, international organizations have developed reports about tailings dam failures, for example. Tailings dam

failure is recognized as one of the greatest risks associated with open-pit mining operations (MMSD 2002; Schoenberger, 2016; de Freitas et al., 2016).

In 2001, the United Nations Environmental Programme (UNEP) worked on two publications related to this topic. It has launched guidelines for the mining industry on preparedness for emergencies at the local level (UNEP, 2001); and, together with the International Commission on Large Dams (ICOLD) produced a bulletin alerting the world to the risk of dangerous occurrences involving tailing dams and introduced a broad set of lessons learned from practical experiences (ICOLD, 2001). After the iconic disaster involving a tailings dam burst in Brazil in 2015, another report coordinated by the UNEP was produced on safety considerations in tailings dam management (Roche et al, 2017).

Concomitantly, the social license to operate (SLO) has emerged in the mining industry as a new approach in which local stakeholders would have a certain extent of power to grant a 'permit' for operation projects. Such permission would be asked from companies, formally though not in compliance with any standard or law. The SLO concept comes from the mining industry in Canada, gaining rapid relevance in other countries where mining is relevant to the economy, such as Australia, Argentina and Brazil (Thomson and Boutilier, 2011; Álvarez, 2013; Moffat and Zhang, 2014; Black, 2017).

SLO is perhaps the greatest challenge to corporate sustainability when it comes to the mining industry. It has been earlier defined as a management framework to deal with social risk (Black, 2013), and as a social-political risk framework supporting executives to deal with stakeholders (Boutilier et al., 2012; Boutilier, 2017). The first time the term appeared, in 2000, it was defined as follows "**A social license to operate exists when a mineral exploration or mining project is seen as having the approval, the broad acceptance of society to conduct its activities (...). Such accept-ability must be (...) firmly grounded in the social acceptance of the resource development by local communities**" (Joyce and Thomson, 2000, 52).

The role of communities in influencing development alternatives, balancing unequal power relations, and yet building trustful lasting relationships (Bice and Moffat, 2014), are some of the complex issues involved in SLO processes. The promotion and achievement of positive outcomes when dealing with

SLO mechanisms have drawn the attention of scholars and practitioners (Joyce and Thomson, 2000; Thomson and Boutilier, 2011; Prno and Slocombe, 2012; Boutilier et al, 2012; Moffat and Zhang, 2014; Bice and Moffat, 2014; Mononen and Sairinen, 2020). Nonetheless, the need for more concrete ideas or consensus on what constitutes a social license, the processes to obtain one, or to undermine acceptance of mining projects by affected communities remains (Moffat and Zhang, 2014).

Earlier research suggests that, in practice, principles of participation and efforts towards local community diversity, and the distribution of benefits and risks remain challenges and are still not effective in practice (see, for instance, Esteves and Vanclay, 2012; Suopajärvi, 2013). They often still do not meet public expectations in terms of the actual power in accepting or rejecting a project (Esteves and Vanclay, 2012).

The insufficiency of substantial participation and 'veto' power in mining projects stimulates resistance and deepens mining conflicts (Bury and Kolff, 2002; Anguelovski, 2011; Conde, 2017). One of the reasons for local resistance to projects is not only the lack of participation, but also the absence of recognition and representation of the plurality existent within communities (Ali and Grewall, 2006; Conde, 2017). In other words, the combination of not having enough power or voice sparks resistance and raises suspicions and non-acceptance of the mining industry or project.

Nevertheless, the corporate need to inform the public and allow participation of community members in government-corporate negotiations has gained traction together with corporate sustainability demands (Lyra et al., 2009; Fitzpatrick et al., 2011; Boutilier, 2017). Community members, union representatives, NGOs, and other stakeholders are thus becoming the audience of corporate communications. This new audience, however, demands a more active role in such processes. Stakeholders also want to provide some relevant inputs on how corporations can improve their social performance. As a result, and in order to create such communication avenues, companies need to adapt their strategies, policies, processes, and activities (see, for instance, Thomson and Boutilier, 2011; Prno and Slocombe, 2012).

Given that one of the main variables associated with social acceptance and SLO is trust (Thomson and Boutilier, 2011; Moffat and Zhang, 2014;

Harvey and Bice, 2014; Litmanen et al., 2016; Suopajärvi et al., 2016), previous studies dealing with cross-country analyses concluded that this component is very much connected with the existence of strong governance (Zhang et al., 2015). Such a correlation suggests that different socioeconomic and political systems influence the acceptance of mining activities and level of trust in the industry (Lyra et al., 2014; Zhang et al., 2015). Consequently, to build trust in company-community relationships it is key not only to produce knowledge and information that is trustworthy, it should also be acknowledged that knowledge and information should be co-produced by a range of stakeholders, with different and at times opposing interests (Bebbington and Bury, 2009).

Participation, activism, and environmental issues

When trust is not established and agreements are not reached between community members and mining companies, conflict is then launched. Concurrently, many groups opposing companies have their central grievances in the growth of corporate power and the corporate influence in politics (Soule, 2009). Within the quest for power and oppositional politics, activists are displaying innovative strategies to participate more in corporate decisions. One example is shareholder activism. Given that shareholders are interested in how the company is being managed, activism among shareholders conveys the exercise of their rights as owners to influence a particular corporation behavior (Karpoff, 2001; Rehbein et al., 2004). This kind of activism has risen especially due to environmental concerns related to corporate behavior (Rehbein et al., 2004).

Aside from the corporate level of decisions, the question of local activism and citizens' participation in decisions on the ground has been also of interest to the academic community (Steel, 1996; Gould et al., 1996; Den Hond and De Bakker, 2007; Luhtakallio, 2012). Similar to the opposition at the corporate level, there is evidence supporting the idea that activism at the local level is driven by environmental concerns (Gould et al., 1996; Steel, 1996; Martinez-Alier and Elguea, 2005; Martinez-Alier et al., 2016; Scheidel et al., 2018; Scheidel et al., 2020).

Some scholars have been critical of the 'environmental concern' aspect that motivates social movements and activists (see, for instance Forsyth,

2001; Forsyth, 2004; Doyle, 2005). Along with that, earlier studies have also criticized the tendency of political ecology researchers to pay little attention to complex interactions of factors whereby environmental changes often are produced, and to provide an unbalanced view of the politics and ecology components on their approaches (Vayda and Walters, 1999; Forsyth, 2008).

There are different aspects of such criticisms, but I would like to highlight two types. First, the one pointing to overly optimistic assumptions that social movements can successfully improve environmental discourses in favor of marginalized people (Forsyth, 2004). Second, for concentrating their analysis on factors assumed a priori to be important and thus missing other factors and the complexities involving environmental changes (Vayda and Walters, 1999). These critics should be taken as caution points for future research involving conflicts, social movements, and environmental issues.

Latin American countries, for example, have been a recurrent setting for social-scientific mining research including the interlinks between political, social, and economic dynamics. Socio-political dynamics in mineral-driven economies are of great interest to scientists (Polier, 1994; Carruthers, 2001; Bendix, 2008; Fraser and Larmer, 2010; Gonzalez-Vicente, 2012;). Likewise, collective actions initiated because of conflicts with the mining industry, such as environmental movement organizations and coalitions have been targets of academic research (Doyle, 2005; di Gregorio, 2012; Walter, 2014; Cordner and Brown, 2015; Temper et al, 2015; Martinez-Alier et al., 2016; Devlin, 2019). Resistance and mobilization have been considered the main themes concerning resource extraction in Latin America (Arce, 2016). However, as Forsyth (2004) reminds us, local experience and scientific confidence about industrial and environmental risks are somewhat new in Global South countries. In consequence, local social movements may be dominated by outsiders' expertise and frames, not necessarily reflecting the local experience of risks (Forsyth, 2004).

Some of the anti-mining movements understand their activism as part of the environmental movement, while others connect more closely to labor movements, or indigenous people's rights, or even to anti-globalization protests. These movements "**do not have perfect external boundaries**" and

"**their parts are always changing**" (Doyle, 2005, 8), commonly interacting with other social movements as well.

For example, one feature that links several Latin American movements is the fact that most likely they are still rooted in Marxist ideals and therefore opposed more broadly to capitalism (Veltmeyer, 1997; Doyle, 2005). At the beginning of the 21st century, countries such as Argentina, Bolivia, Ecuador, and Venezuela had in common anti-neoliberal mobilizations demanding economic and social reforms (Silva, 2009). Coalitions with different actors such as unions, indigenous peoples, the unemployed, political parties, and other combined efforts and went onto the streets to pressure governmental authorities and claim for procedural democracy.

Gago and Mazzadra (2017) analyzed the relations between social movements and progressive governments in Latin America in terms of the transformation of capitalism in the region. The region is marked by the crisis of several progressive governments and relevant transformations in terms of how collective actions are organized and expanded (Bellinger and Arce, 2011; Gago and Mazzadra, 2017).

In some cases, even, innovative solutions towards more participation have been tested out (Walter and Urkidi, 2017; Acosta, 2013), with the effect that some Latin American experiences with activism have circulated widely and inspired other movements in Southern Europe, such as in Greece and Spain with the rise of Podemos (see for instance, Gago and Mazzadra, 2017).

Similarly, political ecologists have classically focused their studies on the struggles of poor people against alliances of industry and state as means to criticize capitalist development. Still, not so much research is devoted to showing how activism is linked to the production of discourses that are not always helping the most vulnerable ones (see. Forsyth, 2004). Thus, even though there are strong links to environmentalism and democracy, one cannot assume that environmentalism can automatically be translated as socially inclusive (see Forsyth, 2001 and Doyle, 2005). Some more-established national or international social movements and NGOs have produced campaigns that as consequence had more division of people or adopted

somewhat naïve and romanticized visions of nature and of activism itself (Peet and Watts, 1996; Forsyth, 2004; Kraemer et al., 2013).

Societal aspects of mining in Brazil

Mining in Brazil is a historical activity. It dates back to the end of the 17th century, when the first gold and diamond discoveries happened (Machado and Figueirôa, 2001). Back in those days, the industrial level of mineral production was quite precarious. Since then, however, this economic activity has been commonly referred to as one of the bases for the Brazilian development (MME, 2009). Cycle after cycle, mineral extraction has increasingly needed to consider critical issues such as the global competitiveness, extraction on indigenous lands and improvements in environmental conservation legislation (Machado, 1998).

Nevertheless, from the societal point of view, mining has been followed by health and social costs that can be evidenced in local conflicts. In the early 1900s, some examples of health and social costs associated with mining development in Brazil include labor accidents, contamination, landslips, and child labor (Souza, 2009). Back then conflicts sparkled mostly featuring the collective fight for better working conditions and salaries, even though the workers had no class consciousness, or any kind of preliminary established union (Souza, 2009). In the course of history, these conflicts have escalated in terms of quantity, community awareness, and geographical levels, with advocacy networks reaching national and international contexts, audiences, and interests.

Groups fighting for environmental justice in Brazil believe marginalized communities are more likely to be exposed to environmental harm and suffer the negative consequences of industrial activities (Martinez-Alier et al., 2014). Theoretically, environmental justice studies are connected with the concept of environmental racism and the perception that social groups such as black and poorer communities are more exposed to industrial harm than other more privileged groups (Bullard,1994). In environmental justice studies, marginalized communities may be communities in which members have poor and minority backgrounds.

In Brazil, rural communities have been historically considered poor and marginalized (see Blanc, 2019). It was in 1994 though that a land struggle marked the crossover between mining conflicts and social movements.

In 1994, in the middle of the Brazilian Amazon, 2,200 families established their encampment on land that belonged to Vale (Rocha, 2015). Vale is the largest Brazilian iron ore company, back then a state company, nowadays a private organization. Their project was sited at Carajás, in Pará state, far away from big cities such as Rio de Janeiro and São Paulo. The Landless' Workers Movement was a rural movement established in 1984 to fight for land and agrarian reform (hereafter referred to as MST, using the original acronym for the movement). It featured land occupation and encampments as part of the movement's repertoire of action and led the families' occupation in Carajás. The conflict and the negotiations stretched until April of 1996.

The land occupation by MST in Carajás had a very violent response. MST activists usually make use of disruptive strategies. They act with civil disobedience, in ways that many other societal actors interpret as questionable or unauthorized (Schwengber, 2008). Violence in conflicts, especially in the ones involving activists and land defenders, are a common feature in Brazil and several other Latin American countries (Global Witness, 2014; Temper et al., 2015; Navas et al., 2018). At that time, the police and other armed groups attacked the activists, resulting in 19 people killed, 69 injured and at least 7 missing (Morissawa, 2001). This episode is known among the activists as the Carajás massacre.

After this episode, the intersection of mining, conflicts, and social movements in Brazil was decidedly established. This intersection has deep roots in land struggle, marginalization, and the invisibility of rural groups, as this thesis will show in the subsequent chapters. It was because of the MST presence in Pará state that activism targeting mining gained strength, leading to local anti-mining groups and associations and later to the creation of a national anti-mining movement (hereafter referred to as MAM, using the original acronym for the movement).

Here it is pertinent to state a clarification. Activism targeting mining is recurrently framed as an anti-mining movement (Whitmore, 2006; Urkidi, 2010; Urkidi and Walter 2011; Jenkis, 2015). There is a general inference

that those who oppose mining are mainly ignorant or 'anti-development' (Whitmore, 2006). However, on the contrary, these groups most likely are not 'anti-mining' per se. As explained by Blanc (2019), rural movements in Brazil not necessarily object to development projects (such as mining and dams), but they are against corporation policies that take place when planning and executing such projects. In this thesis work, 'anti-mining' is used to qualify groups of activists resisting and opposing mining debates, activities, and decisions.

As this research will clarify, MAM was nationally established in 2013 especially due to changes in the Brazilian mineral framework. The anti-mining movement gained traction and multi-level relevance after the Fundão tailing dam failure in 2015. Additionally, to some extent, the anti-mining movement gained such relevance because of events that took place in the aftermath of the failure.

In Brazil, from the 1980s up to the present time, the relation between activists, the public interest, and private organizations has been negotiated and renegotiated. Due to the military regime from the mid-60s to the mid-80s, the professionalization of NGOs was late, and funding for this purpose remains an ongoing problem (Hochstetler and Keck, 2007). Therefore, back then most social movements would focus on opposition to the military regime and the fight for the 'right to have rights' (Gohn, 2014; Blanc, 2019). With the end of dictatorship and the rise of the new wave of environmentalism in the 80s, movements and NGOs were influenced by socio-environmental ideas and ideologies. Existent movements and NGOs added these socio-environmental demands to their core, and new collective actions linked to the topic were created (Losekann, 2014).

In the 2000s, with the natural resources' exploration increasing in Brazil, environmental conflicts and land disputes also expanded. Patterns of resistance usually question the 'official history', so resistance actors often keep 'hidden transcripts' of their versions of the conflict. Once these hidden transcripts become public, political, and economic situations become explosive (Scott, 1990). Such explosive cases have emerged especially in rural areas where industrial activities such as logging, mining, and the construction of hydroelectric dams have taken place. Civil society is hence dynamically

organizing and reorganizing itself, fighting for more justice, and defending territory (Rothman, 2008; Silva et al., 2014; Zagallo et al., 2015).

The questions surrounding the environment and extractivism in Brazil have drawn scholarly attention. Da Silva et al. (2014) calls attention to conflicts of interest, land issues, and mining impacts using iron ore extraction projects in Carajás as examples. The mining company Vale started mineral exploration in that Amazon area during the 1980s. Mining conflicts involving Brazilian cases appear also in country comparison studies (Maher, 2014) as do indigenous activism and resistance (Fisher, 1994; Hanna et al., 2016; Li and Peñafiel, 2019).

Santiago (2016) investigated how international concepts associated with the social license to operate are applied in the Brazilian context. She concluded that conditions influencing the granting of the SLO in developed nations cannot be fully reproduced in Brazil. This is due to a strong effect from social vulnerability and economic dependence, features which are strongly present in Brazilian communities in the vicinity of mining activities. This conclusion is aligned with several other studies evidencing that corporate sustainability efforts are context-dependent and should not be applied globally without adaptations (Hamann, 2003; Hilson and Yakovleva, 2007; Dartey-Baah and Amponsah-Tawiah, 2011; Campbell, 2012; Hilson, 2012). Non-adaptation hampers the much-promised economic development from the activities of the extractive industry. Global South countries have specific structural and historical socio-economic issues that corporate sustainability efforts cannot correct but could end up reproducing or reinforcing (Campbell, 2012).

Brazil is somewhat following a pattern that can be evidenced in other Latin American countries as well. Some scholars and activists argue that during the 2000s the number of environmental conflicts in Latin America has increased, especially cases displaying violence towards environmental defenders (Özkaynak et al., 2012; Bebbington and Bury, 2013; Global Witness, 2014; Temper et al., 2015; Conde and Le Billon, 2017; Navas et al., 2018; Del Bene et al., 2018; Scheidel et al., 2020). Peru, for example, is a country where anti-mining activism is the most common kind of protest (Arce, 2014).

To tackle mining conflicts the use of case studies has been prolific (Kirsch, 2002; Jenkins, 2004; Hilson and Yakloveva, 2007; Bebbington and Williams,

2008; Svampa, 2009; Coumans, 2011; Zhouri and Valencio, 2014; Walter and Urkidi, 2017). Still, most cases focus mainly on a specific local community to explain drivers of conflict and conflict aftermaths. By doing that, researchers are bringing about results from multi-perspective analyses, including intertwined and conflictual viewpoints (Zhouri and Valencio, 2014; dos Santos and Milanez, 2015).

By focusing on the conflict and the different prisms to examine it, the societal challenges of mining conflict emerge as the research results. Among these are, for example, the need for more participation and dialogue, together with the challenge towards more justice. These are faced especially by less powerful groups aiming for better structured relationships on equal terms in a conflictual situation (Coumans, 2011; Kemp et al., 2011; Zhouri and Valencio, 2014). Even when focusing on conflicts but with activists as the main source of data, the results are still societal in terms of the perceptions of the socio-environmental impacts and the need for more participation and the validation of traditional values (Urkidi, 2011).

Some locals and activists believe their claims are not properly considered when the authorities deal with environmental governance (Meirino, 2018). Those claims regard community protection, inclusion, and participation mechanisms. These groups think that such mechanisms are failing, excluding some local members from the participatory game. This is happening in times when environmental risks and threats are being heavily contested and disputed by different actors (Carolan & Bell, 2003; Wakefield et al., 2006), giving more room for conflict and resistance.

While resistance and activism have been rising and improving in terms of their strategies and tactics, at the same it is time common to find community members who are not aware of their rights. These members are likely also to have little information about extractive projects and operations close to them. Hence, they do not participate or attempt to gain access and rights during licensing stages or when a conflict or disaster happens (Mitchell, 1996; Newell, 2005). In fact, poorer communities tend to lack easy access to the resources and networks usually provided by well- established NGOs (Newell, 2005).

As explained by Bebbington (2012), the recent increase of extractivism is vital to the Latin American political economy as it is to the region's development process as well. This political economic context, however, comes together with several environmental and social consequences, such as the increase of conflicts. In fact, scrutiny of the impacts and consequences of mining and their associated conflicts has been greatly and globally investigated (Thomson and Joyce, 1997; Esteves and Vanclay, 2009; Franks et al., 2014; Lyytimäki and Peltonen, 2016; Sairinen et al., 2017) and it is not anything new. Similarly, the elevated social, environmental and safety risks together with the track record of incidents and disasters associated with mineral extraction have been the target of previous and current mining research (ICOLD, 2001; UNEP, 2001; Azam and Li, 2010; Roche et al., 2017).

In Brazil, the period of economic growth was followed by several social measures, reducing poverty levels, and balancing the income distribution. The growth, however, was not sustained in the long term, and the effects stemming from the global crisis in 2008 also reached Brazil a little later. Political decisions and measures have also aggravated the economic results, leading to rising inflation, unemployment, and indebtedness (Carvalho, 2018).

Together with the economic crisis came along a deep political crisis. 'Operation Car Wash' and the promise to shed light on the situation in the country through 'neutral' investigations over corruption ended up unpacking a series of turbulent events in the political arena. Among other things, this forged the political basis to start an official process aiming at impeaching the President Dilma Roussef from her post, arresting the former President Luis Ignácio Lula da Silva, and putting right-wing politicians back into power in Brazil (Souza, 2016). All these events at the national level have, to some extent, influenced mining decisions, too. In line with this is the fact that the national context and its changes also influence how activists plan and put their strategies into practice, as this thesis will show in the following chapters. Hence, how has anti-mining activism been established in Brazil? What kinds of strategies and actions have activists used as a response to events connected to mining? Have they been able to influence the mining sector given the current Brazilian societal context?

Table 1 illustrates the original names of social movements and how they appear with corresponding names in this doctoral thesis. The term 'anti-mining movement' is used to refer to MAM but also alternatively to denote actions from their partners and allies.

Table 1. Names and acronyms of Brazilian national social movements

Original name and direct translation	Acronym in Portuguese (popular name)	Corresponding name for the doctoral thesis
Movimento dos Trabalhadores Rurais Sem-Terra (Landless' Rural Workers Movement)	MST	Landless' Workers Movement MST
Movimento dos Atingidos por Barragens (Movement of People Affected by Dams)	MAB	Anti-dam movement MAB
Movimento pela Soberania Popular na Mineração (Movement towards Mining Communal Sovereignty)	MAM	Anti-mining movement MAM
Comitê Nacional em Defesa dos Territórios e Contra a mineracão (National Committee for the Defense of Territories over Mining)	Comitê	Anti-mining coalition Coalition Network

1.4. THESIS STRUCTURE

The thesis consists of five chapters as well as four associated scientific articles published between the beginning of 2016 and the spring of 2019. The five chapters convey the introduction, theoretical framework, methods, results, and conclusions which the articles were built on. Three of the four papers appeared in special issues of journals. This was a choice I have made to

allow the results of this research to reach relevant social scientific niches of discussion on mining and society. The first article, **The beginnings of the anti-mining movement in Brazil**, was published in Peace Review's special issue: "The grassroots response to extractivism". The compendium's main objective is to explore how civil society actors are responding to the latest surge of natural resource extraction throughout the world. **Article 2, Pursuing a voice in the extractive debate in Brazil**, and **Article 4, Environmental justice and natural resource extraction: intersection of power, equity, and access**, are part of a special issue in the Environmental Sociology journal titled "**Environmental justice and natural resource extraction: intersections of power, equity and access**". This is the only article from the series in which I am not the solely author. Stephanie Malin, Stacia Ryder and I are co-authoring it. The aim of the issue was to bridge the research gap on conceptual and empirical cross-pollination between analyses of natural resource dependence and environmental justice. **Article 4** is the editorial paper for a special issue project idealized by Stephanie and Stacia. They have invited me to be a guest co-editor together with them. **Article 3, Challenging extractivism: activism over the aftermath of the Fundão dam disaster**, has not appeared in any larger publication projects, and it was published as an original article on the Journal of Extractive Industries and Society. **Table 2** summarizes the publications:

Table 2. Articles published forming the basis of this thesis

Article title	Journal information	Date of publication
Article 1: Lyra, M. (2016). The beginnings of the anti-mining movement in Brazil. Peace Review, 28(1), 38-45.	Peace Review: a journal for social justice ISSN: 1469-9982	Available online in February 2016 DOI: https://doi.org/10.1080/10402659.2016.1130376
Article 2: Lyra, M. G. (2019). Pursuing a voice in the extractivism debate in Brazil. Environmental Sociology, 5(2), 207-218.	Environmental Sociology Journal ISSN: 2325-1042	Available online in May 2019 DOI: https://doi.org/10.1080/23251042.2019.1620091
Article 3: Lyra, M. G. (2019). Challenging extractivism: Activism over the aftermath of the Fundão disaster. The Extractive Industries and Society, 6(3), 897-905.	Journal of the Extractive Industries and Society ISSN: 2214-790X	Available online in May 2019 DOI: https://doi.org/10.1016/j.exis.2019.05.010
Article 4: Malin, S. A., Ryder, S., & Lyra, M. G. (2019). Environmental justice and natural resource extraction: intersections of power, equity and access.	Environmental Sociology Journal ISSN: 2325-1042	Available online in June 2019 DOI: https://doi.org/10.1080/23251042.2019.1608420

This article-based approach worked well for my research and subsequent thesis given the fast and abrupt turning points that have happened in the field

of mining and activism in Brazil since the Fundão dam failure in 2015. The results in the articles provide insights into mining activism before and after the disaster and deliver suggestions and recommendations for the future. Even though each article is an independent contribution, together they form a compendium complementing each other.

As for the chapters of this thesis, the opening chapter is the introduction, which includes the research approach, task, and questions, together with the structure of the thesis. The second chapter introduces the theoretical framework for the thesis. It starts by establishing the general developments of social movement theory and its definition. By introducing the literature on repertoires, strategies, actions, effectiveness, and outcomes of social movements I will explain the use of social movement theory to study activism. Then, studies on environmental movements and environmental justice are subsequently laid out together with their definitions and interrelations— The connection of environmental movements to rural and land issues.

The third chapter comprises the research methods where reflections on the research process and fieldwork take place, together with data collection and analysis, research methods and ethical concerns.

The fourth chapter discusses the results and consists of introducing the results and discussions in three sections. It combines the effort to answer the research questions while it depicts where such results and discussions are located in the articles. The final chapter provides the concluding remarks and avenues for future research.

2 THEORETICAL FRAMEWORK

This chapter introduces the theoretical body upon which the present doctoral dissertation is based. The theory of social movements and studies of environmental justice form the scientific foundation for the thesis. This choice suits the research task of understanding how activism has been established and developed in Brazil in the 2013-2017 period. Hence, the theory of social movements will provide the grounds to analyze the anti-mining activism in Brazil in terms of the context, responses, and influence. Complementarily, the environmental justice studies will help to understand how activists see and interpret the context they are part of and how they perceive the context influencing their movement and struggles.

Figure 1 below illustrates how the theories and background are put together.

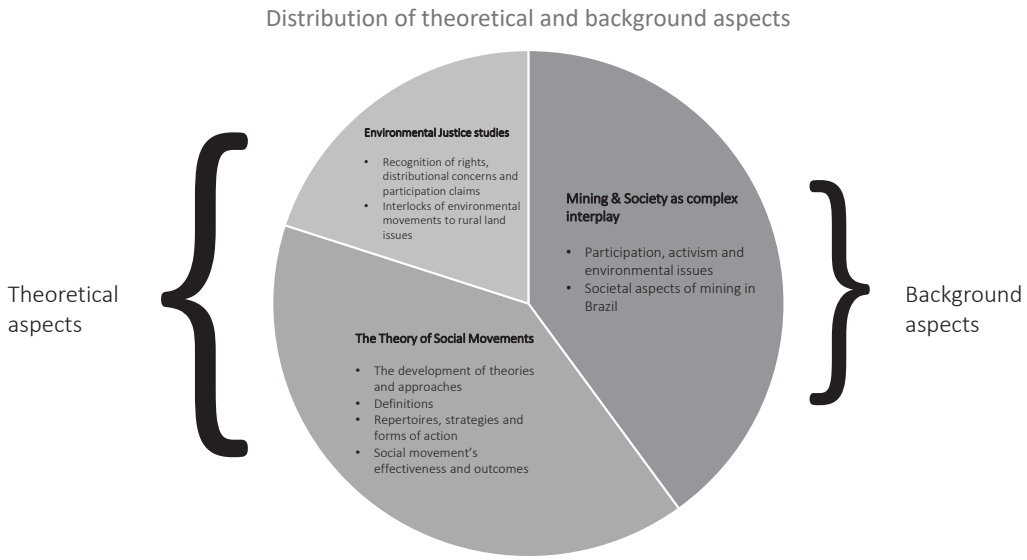

Figure 1. The theoretical and background aspects of the thesis.

2.1. THE USE OF SOCIAL MOVEMENTS THEORY TO STUDY ACTIVISM

The developments of theories and approaches to the social movements field

The body of knowledge on social movements is vast. It touches upon different groups and individuals challenging their opponents across time and space. Historically, the social movements literature is a branch of sociological and political sciences studies. Traditionally, scholars leading the associated academic work have been differentiated geographically in terms of American, and European scholars (Della Porta and Diani, 2006; Stekelenburg and Klandermans, 2008). Thus, names such as Doug McAdam, John McArthy, Charles Tilly, Mayer Zald, David Snow, and Sidney Tarrow are salient in the United States. In Europe, on the other hand, Alain Touraine, Alberto Melucci, Donatella Della Porta, Mario Diani, and Manuel Castells have global relevance, together with other younger scholars such as Geoffrey Pleyers, and Paolo Gerbaudo, for example.

From mobilizing members to form political parties, from feminists to environmentalists and claims for democracy, undoubtedly social movements are present in most of the relevant discussions across the globe and are now even more interconnected due to social media and online activism. But what makes social movements a distinct field of research?

Back in the 18th century, in the industrial era, the first social agitations sparkled in England and Germany, associated with the economic and political changes of market capitalization, such as proletarianization. Those were followed in the 19th century by labor and socialist movements leading to the formation of communist and social-democratic political parties. Theorists such as Weber, Le Bon, and Marx emerged using functionalist sociology, studies on mass society and collective behavior, as well as deprivation theory to explain why groups were mobilizing against the mainstream system. These are considered the classical approaches towards social movements. Such theorists framed protesters as marginalized, disintegrated, and alienated people with motivations due to discontent and class conflict (Stekelenburg and Klandermans, 2008).

Weber and Le Bon linked their research back to the assumption that social movement activity was unconventional and connected to irrationality. Weber interpreted mass movements as harmful and deviant behavior, as perhaps necessary aspects of the industrial transition, but hopefully temporary. Le Bon, similarly, together with the crowd theorists, believed collective activities were dangerous and tried to explain proletarian collective actions to oppose them and justify suppression measures (Drury, 2015).

Marx's research focus was on whether working-class movements were able to bring about the fall of capitalism (Drury, 2015). The primary concern of classical Marxist analysis has been to define the preconditions of revolution by examining the structural contradictions of the capitalist system (Melucci, 1980). Marxist theorists, however, could not explain why social movements led by students emerged in France and Germany in the late 1960s (Touraine 1971; Stekelenburg and Klandermans, 2008). All in all, theorists from this period assumed that mass movements were not capable of influencing the development of society or interfering with policy outcomes (Mayer, 1991).

With the rising of movements beyond the proletarian issue, such as the civil rights campaigns and hippie movements, the theories around social movements gained new momentum. Sometimes scholars refer to theories and studies analyzing movements from the 1960s on as 'the new social movement theory'. This term, however, is not in full agreement with academics from the social movements field (Drury, 2015).

The resource mobilization scholars comprised an attempt to theorize social movements under the instrumental and structural tradition. They believed that protesters were professional and well-organized people who would protest rationally and in a planned manner to have access to resources and opportunities via their social networks (Stekelenburg and Klandermans, 2008; Drury, 2015). These scholars attempted to answer the question of why some grievances and not others ended up becoming social movements.

The resource mobilization theory analyzes not only the variety of resources needed for a social movement to exist, but also the connections of such a movement with other groups, the success-path dependence on external support, and the authorities' responses to control or incorporate such movements (McCarthy and Zald, 1977). Sharing a strategic view of the

action and paying more attention to the political environment in which social movements happen, political process theorists (Tilly, 1978; McAdam, 1982; Tarrow, 1993) are usually summarized under the 'political process opportunity' group. These theorists analyze the degree of openness of political access and the degree of stability of political alignments. Political process theorists also investigate the political conflicts within and between certain parties (della Porta and Diani, 2015).

Because of the assumption of instrumental reality, critics of the resource mobilization theory have relied on its over-rationalization conception of social movements (Drury, 2015). Thus, in parallel to the structuralism that compounded the resource mobilization theory, social constructivist approaches also arose in the social movements field.

The social-constructivist perspective is organized around the concepts of identity, framing, and emotions (Stekelenburg and Klandermans, 2008). Scholars in this camp believe that protesters respond to the world as they perceive and interpret it. These new scholars come to fulfill the deficit of previous theorists by explaining what makes people define their situation in such a way that their participation in a social movement seems appropriate (Drury, 2015 p. 450). The question, therefore, becomes: under which circumstances do people believe in a particular version of reality (Benford, 1997)?

Alberto Melucci was one of the most pre-eminent scholars inside the social constructivist approach. For him, social movements were only possible to exist via a collective identity amongst their members, with shared goals, visions, and interpretations of reality (Melucci, 1995). These interpretations combined with the collective actions taken by the movement are capable of produce meanings and socially construct new realities.

Framing, moreover, is another approach that gained visibility with the new social movements of the late 1960s. From this perspective, meaning is also pivotal to the issues of grievance construction, movement participation, and forging strategies and tactics (Benford, 1997). Thus, the new social movement theorists rejected Marx's approach and also approaches encompassing technical rationality and high levels of rational justification when investigating social movements (Drury, 2015). Still, the current research agenda calls for

an integration of approaches, especially via interdisciplinary and comparative studies (Stekelenburg and Klandermans, 2008; Oliver et al., 2003). Or, as della Porta and Diani (2015) put it, even a partial glance at social movements research suggests that its empirical focus is concurrently distinctive and overlapping with several correlated fields.

Proposing a forward-looking research agenda, Oliver and colleagues (2003) suggested four trends: (1) expand the theory beyond the Anglo-American view and Western Europe by including other regions such as Latin America, Africa, and Asia, and thus bringing about 'new' topics such as ethnic conflicts and democratization movements; (2) retake the unfinished core theory linking social movements to politics by bringing more evidence on how movements are 'imperfectly bounded set of processes' conveying complex relations between protesters and the state; (3) increase of use of event analysis in social movements research, broadening evidence on interrelations of different kinds of acts over time; and (4) disclaim false dichotomies such as past structuralism versus constructionist debates by growing over and approximating these extremes of theory.

Social movement definitions

Similar to the developments of the theory and studies embracing the social movements field, the definitions of what a social movements have been vast and yet not definitive. McCarthy and Zald (1977) defined social movements as 'nothing more' than preference structures directed toward social change. They wrote in 1977: "**A social movement is a set of opinions and beliefs in a population which represents preferences for changing some elements of the social structure and/or reward distribution of a society**" (McCarthy and Zald, 1977 p. 1217-18).

Tilly's (1979) review of definitions of social movements, on the other hand, starts from the question of whether the word 'movement' is appropriate or not, then explaining the relevance of studying repertoires to analyze collective actions. He concluded that social movements should be recognized as "**sustained interactions between changing sets of challengers and authorities**" (p.25). Furthermore, he continues, claiming for more attention

to treating social movements as a way of doing politics, and not merely as a set of nonconformist individuals.

Diani (1992), later on, has defined social movements as "**networks of informal interactions between a plurality of individuals, groups and/or organizations, engaged in political or cultural conflicts, based on shared collective identities**" (p.1). Similarly, Benford (1997) reminded us that what we researchers call social movements and their manifestations are, in reality, comprised of interacting, co-acting, and reacting human beings. We cannot neglect the human agency inherent to social movements—people engage in protests and frame contests, not social movements.

From these relevant definitions, it is possible to tackle the similarities in sustaining the dynamic nature of social movements by the use of the word interactions. Additionally, while Tilly's definition calls for attention to the fact these collective actions 'challenge' the authorities, Diani and Benford reinforce the political and cultural character of such actions, remember also that they are based on a shared identity among people. Hence, a social movement is about people's action, it is about setting shared ideas and identities into motion to challenge opponents politically and/or culturally.

Accordingly, activism is the most important activity of people who join social movements. This activity is embedded in the willingness to challenge opponents to achieve the movement's aims. Activism is traditionally carried out in connection with political parties, however, it can be displayed in unconventional ways, such as boycotts and marches (Saunders, 2013).

It is important to highlight that a given social movement has a collective orientation and form. To study collective action, it is essential to reflect on how, why, and what motivates people to engage in joint activities working for similar purposes (Oliver, 2013). As a catalyst for participation, the collective identity works to invigorate activism action. How activists recognize and describe themselves, their common interests, and acts of mutual solidarity (Stekelenburg, 2013) are connected to the collective identity of a social movement.

Repertoires, strategies, and form of actions

What are the motives and reasons that lie behind people deciding to join a given social movement? One of the enablers for participation relies on the attempt to influence the social and political environment. Another motive is connected to identity. Additionally, people would decide to take part in a social movement as a way to express their identification with a particular group (Klandermans, 2013).

Close to the identity motive is the ideological one when potential activists want to participate as a way to express their views, moral reasoning, and narratives. Activists many times organize themselves by sharing values and exchanging resources. Once this bond happens across between individuals and organizations for a particular cause, and not aiming to develop a long-term collective identity, advocacy networks are forged (Bozzini, 2013). The repertoire of actions in an advocacy network may include petitions, lobbying, mass demonstrations, and conventional forms of claims-making. It is key to gather relevant information and knowledge for strategical use in different venues, filling policymakers and the general public with timely information previously framed by the activists taking part in the network.

The repertoire of actions or tactical repertoires is seen as a set of interactive episodes that link social movement actors to each other. Taylor and colleagues (2009) see tactical repertoires as sites of contentious actions in which three essential features occur: (1) contestation between groups with different and competing interests; (2) intentionally and strategically conscious staged actions; (3) the development of solidarity that comes from co-operating via the construction of shared interests to oppose.

Another way that the larger sociopolitical environment influences collective action repertoires is via protest cycles (Tarrow, 1993). According to this view, protests tend to follow a repetitive cycle in which joint mobilizations increase and decrease in frequency, intensity, and formation. The notion that protests happen in cycles or waves allows us to recognize how the ebb and flow that characterizes protest determines the tactics adopted by social movements.

The concepts of political opportunity and the political opportunity structure have been highly relevant to social movement theory and the methodological approaches to studying it. As part of the political process approach, the political

opportunity structure is the most relevant concept for defining characteristics inherent to the external environment which social movements relate to (Della Porta, 2013). Based on the idea that protests are influenced by dynamics embedded in the national context (Tilly, 1979), Tarrow (1989) added that some conditions such as the availability of potential allies and the instability of authorities have been significant for the rise of social movements.

What is also worth attention is how powerful the state is in comparison with other actors, such as the media and political parties (Della Porta, 2013). Thus, resource mobilization is a fundamental part of social movement theory, since activists generally obtain their resources from a combination of external and internal sources, depending on how they organize their efforts in that sense.

Edwards and Gillham (2013) highlight four mechanisms of resource access and five resource types. The mechanisms are composed of self-production (via participants); aggregation (transformation of dispersed resources into collective ones); appropriation (via relational efforts); and patronage (private donations, grants, or government contracts). Resources can be moral, such as legitimacy, integrity, or solidarity; cultural, such as tacit knowledge or a tactical repertoire; human or material (financial); and socio-organizational (networks, institutions, and infrastructures).

As already mentioned, framing is an important feature of social movements and refers to the act of signifying or building up meanings and attaching them to events and experiences relevant to the activists (Snow, 2013). This is an interpretative process mediated by culture and acts to draw attention to articulated scattered elements and set a sense of narrative to the conveyed story, and to reconstitute how objects of attention are understood. Protagonists, antagonists, and the audience engage in action, simultaneously crafting identity fields (Benford, 2013).

Therefore, in social movement studies, a fundamental element for mobilization is the definition of the identity, which occurs before the definition of the interest. In local conflicts, the process of framing an identity often emerges between the increasing solidarity at the local level and the appeal for universal values at macro levels, which is mandatory for the mobilization of external allies (Della Porta & Piazza, 2008). It is, therefore, a dialectic

'process of negotiation and contestation' (Melucci, 1989; Tarrow, 1998) that consolidates a social movement's identity.

Nevertheless, the literature provides no consensus in terms of uniformity or exclusive identity in social movements. On the one hand, it is clear that to construct a movement's identity some level of agreement is necessary, and in this sense, a high level of internal discrepancies in this regard could influence activists to ignore or deny the inclusion of other identities (i.e. intersectionality) (Lopéz & García, 2014). On the other hand, internal asymmetries create diversity in framing problems often driving parties into competing positions. Depending on the level of dissension, the portrayal of current and potential alliances could be hampered.

While intragroup diversity may lead to conflict, it can also lead to cooperation and then become a viable source of meaningful bridge-building between different groups (Rothman, 2014). Group solidarity thus depends fundamentally on members identifying themselves with a common set of pre-defined attributes. While not all members and allies have the same capacity to influence things, and the prioritization of one particular inequality over others tends to suppress intra-group differences (Lopéz & García, 2014).

When seeking to understand how activists negotiate to bridge positional and cultural differences in the social world, some scholars have drawn attention to 'bridging work' or 'bridge-building' in social movements (Coley, 2014). Studies have focused on efforts to overcome and negotiate conflicts related to identity. Similarly, social movement scholars have begun to shed light on the role of 'bridging organizations', or organizations that seek "**to educate different groups about each other, to reduce fear and hostility based on ignorance, and to encourage the valuing of diversity**" (Brecher & Costello, 1990, pp. 338–339). As a social movement gains motion and strength, challenging powerful actors, these dominant players may attempt to bring the challengers into the authority system. The inclusion of activists in the system as participants and no longer as challengers is defined as co-optation (Coy, 2013).

Even though most of the social movement theory treats movements as independent of one another, the evidence is pointing to the contrary. Many movements cluster, imprint tactics, and ideologies of prior movements

and are orchestrated in waves (McAdam, 2013). This has been defined in terms of 'initiator' and 'spin-off' movements (McAdam, 1995) or 'movement spillover' (Meyer and Whittier, 1994). The reason why actors merge or join forces is mainly the desire to have access to resources (Orach et al., 2017) controlled by third parties, such as financial and physical resources, access to new groups, as well as legitimacy, and expertise. The action of expanding the base of support and developing a common agenda has been described elsewhere as 'movement fusion' (Cole and Foster, 2001).

Coalition politics arises from the understanding that the effort to recognize and polish different realities and interdependencies of its members is crucial to achieving the coalition's goals (Reagon, 1983). It is about linking specific worldviews (e.g. 'situated pieces of knowledge') into a commitment towards a new non-institutionalized entity aiming to jointly survive (Haraway, 1992; Cole and Foster, 2001). Past studies have recognized alliances that improve community conditions and work towards solving social problems (Mizrahi & Rosenthal, 2001). Since social movements question the nature and practice of power and contest the current arrangements on the ground, hence, those movements are relevant to discussions of inequality and its reduction.

The effectiveness and outcomes of social movements

Since social movements are dynamic, with punctual actions or waves of actions in a certain time and space, it has been a challenge to measure the effectiveness of a given movement. Social movement outcomes usually have to be analyzed looking back in time, often contrasting tactical repertoires against movement outcomes regarding novelty, militancy, variety, size, and cultural resonance (Taylor & Dyke, 2004).

Staggenborg (1995) categorized social movement outcomes in terms of a) substantial political or policy changes; b) mobilization success and the ability to carry out collective action; and c) cultural changes in terms of behavior and ways of thinking among the general public.

It is especially hard to identify the cultural outcomes or consequences of a given social movement. To change culturally means to change the basic fabric of communities or the creation of new ways of life inside a given community. In other words, this means changes of values, discourse, language, cultural

products (i.e. literature, music, media), collective identity, and worldview (Earl, 2004).

The collective efficacy of mobilization has been seen as a sign of the effectiveness of social movements. Usually, scholars have suggested that the availability of resources and opportunities play a key role in allowing such efficacy (Klandermans, 2013). It is also linked to several expectations, such as the goal will be achieved if many others join the movement and that every new member participation will increase the likelihood of success (Klandermans, 1984).

It is important to say that commonly it has been assumed that one way to measure if a given movement has been successful or not is by assessing whether the movement became institutionalized over time. Many times, historically speaking, the consequence or outcome of social movements has been the incorporation or reconfiguration as a political party (McAdam and Tarrow, 2010; Hutter et al, 2018).

2.2. ENVIRONMENTAL JUSTICE AND ENVIRONMENTAL MOVEMENTS

Environmental movements and environmental justice frame compound headings of the social movement field. For example, scholars who have focused on local conflicts and participation, land issues, company-community relationships, environmental activism, and rural movements have been interested in environmental movements and justice.

Even though the environmental justice concept and the topic of research arose in the United States, it has evolved beyond its origins, becoming popular also in research with Global South countries as a setting (Urkidi and Walter, 2011; Temper et al, 2015; Martinez-Alier et al., 2016). Environmental justice derives from the concept of environmental racism studies. It arises from the idea that some social groups such as black and poorer communities are more exposed to industrial harm than other more privileged groups (Bullard,1994; Schlosberg, 2009).

Together with environmental justice studies comes the attention to groups that mobilize around and inside these marginalized communities. These groups usually work out strategies and actions seeking more justice such as access to benefits, better participation, and other rights (see, for instance, Martinez-Alier 1995; Temper et al., 2015, Martinez-Alier et al., 2016). Environmental justice movements are then rising and gaining traction in countries where the pathway for development is mainly based on industrialization, and the extractive industry specifically has drawn attention (Urkidi and Walter, 2011; Kidd, 2015).

As this kind of economic growth expands, it reaches poorer, indigenous peoples and rural areas, also encompassing livelihood issues, as people have resettled to other areas. Similarly, often the resettlement process happens in ways that are reported by grassroots groups as violent, abrupt, and not allowing local people their rights properly (Rees and Westra, 2012; Kidd, 2015; Pulido, 2017; Del Bene et al., 2018). Environmental justice movements are then a response to these violations. They attempt to give more power in terms of access to justice and participation in these communities. The lack of environmental justice is more problematic in Global South countries. There issues tend to be more interconnected and complex especially due to social inequalities and vulnerabilities that are common in these places (Doyle, 2005; Guha and Martinez-Alier, 2013).

The decision to include theoretical aspects of environmental justice, intersectionality, environmental movements, and rural issues to this thesis is highly connected with the idea to explain the anti-mining movement from the point of view of the activists in the Global South. These concepts and approaches will serve as a theoretical support to the social movements theory. In other words, I intend to provide a research that display the interlinkages between social movement theories and environmental justice approaches.

The task of sewing these two theoretical currents together is complex and requires finding conceptual bridges across political-ecology oriented studies on social movements against mineral extraction. The relevance and ambition of this choice rely on reinforcing throughout the thesis that context matters, and for that one has to make sure to highlight a standpoint that speaks for the context. More than a thesis **about** the Global South, this research is an

attempt of putting together new understandings of anti-mining activism in Brazil and Latin America **from the point of view of activists** of the Global South.

The concept of environmental justice

The term environmental justice (EJ) started to be used as a derivation from environmental racism, in the United States (Bullard, 1994; Cutter, 1995; Bullard and Johnson, 2000; Brulle and Pellow, 2006; Schlosberg, 2009). It is strongly associated with evidence that marginalized communities (such as black groups, poorer communities, and indigenous peoples) are more exposed to social and environmental harm coming from a consequence of industrial operations. Scholars started questioning why such exposure to risks is happening to these communities in the first place (Schlosberg, 2013). EJ studies ended up, however, becoming broadly used in cases of need for procedural, equity and distributive justice (Martinez-Alier, 1997; Dobson, 1998; Schlosberg, 2003; Schlosberg, 2004; Carruthers, 2008; Urikidi and Walter, 2011; Martin et al. 2014; Temper et al., 2015; Sovacool and Dworkin, 2015).

Procedural justice refers to fairness and equity present institutionally in the processes of a state, while the notion of equity considers the lack of recognition of some groups in decision-making processes. Finally, distributive justice accounts for the distribution of costs and benefits of industrial activities (Schlosberg, 2009). The association of environmental issues with concepts of justice is, however, considered a quite recent phenomenon (Ikeme, 2003).

EJ has been associated as a concept embracing all (in)justice issues correlated to environmental decision-making processes (Ikeme, 2003). Some scholars acknowledge the political component of environmental justice definitions and conceptualizations (Holifield, 2001; Schlosberg, 2003). Connections between EJ and the quality of democracy are not rare. Previous studies have indicated the need for communities to participate in capital investment decisions (Lake, 1996; Schlosberg, 2003; Kemp, 2009; Harrington et al, 2008) as the key to achieving better EJ outcomes. Studies on environmental justice and natural resource struggles frame collective actions as environmental justice movements or simply environmental movements

(Colie and Foster, 2001; Doyle, 2005; Walter, 2014). As Scholosberg (2013) explains, EJ studies have been pushing many boundaries. They challenge the very notion of the 'environment', supporting different conceptions of social justice, and deepening the analysis of the underlying reasons for injustice cases.

In the United States, the concept started with scholars like David Schlosberg and Robert D. Bullard, while in Europe the lead was taken by the Catalonian Joan Martinez-Alier. More recently, Martinez-Alier and his team have been prolific in publications. The team is linking environmental justice to degrowth, mining conflicts and to sustainability science (Martinez-Alier 2012; Martinez-Alier et al., 2014; Temper et al, 2015; Temper et al., 2018;). Moreover, they are engaged in interpreting cases cataloged in the Environmental Justice Atlas project. The project has mapped more than 3000 environmental conflicts around the globe and links environmental justice to sustainability science.

When talking about the environmental consequences of economic growth and their effects on society, Martínez-Alier (1995) frames collective action around environmental issues. He is focused on cases in Global South countries such as Chile and India. He advocates the idea that environment defenders from Global South countries are environmentalists of the poor. These are different from the defenders in developed nations. The environmentalism of the poor is happening in Global South countries detached from the growing environmental awareness present in rich countries. Such communities defend the environment surrounding them because of survival. They are a target of 'slow violence' (Nixon, 2011). This violence suffered by people trying to defend the environment in Global South countries unveils forms of power exerted by some actors, and cases of environmental injustice that remain largely unobserved.

The proximity of the environmentalism of the poor and environmental justice was previously linked because both have roots in the marginalized groups trying to protect lands and livelihoods from adverse environmental change (Anguelovski and Martinez-Alier, 2014; Walter, 2014; Martinez-Alier, 2016; Scheidel et al., 2020). Similarly, social movements engaged in environmental disputes are becoming more familiar with approaches of environmental justice movements (Martinez-Alier et al., 2014).

The concept of EJ has been appropriated across time and space by different groups fighting against social and environmental injustice (Velicu and Kaika, 2017). The collective actions gathered to guarantee that EJ will be served are commonly called environmental justice movements (EJMs).

When considering EJMs, it is particularly relevant to note them as a specific kind of social movement. EJMs emerged when communities close to industrial operations started to question whether their exposure to the operation-related risks were the same among different social groups and across place and space (Malin and Petrzelka, 2010). EJM activists have been engaged in politics, changing and challenging theoretical concerns on the environment, inequality, and social justice (Schlosberg, 2013). Concurrently, the EJ discourse is growing beyond its initial limits of environmental risk distribution and expanding towards different meanings, depending on the people, movements, time, and spatial situations (Doyle, 2005; Martinez-Alier et al., 2014).

These different groups and individuals under similar EJ goals are connected via networks, alliances, coalitions, and partnerships. They put together unexpected and very distinct allies, often having as an outcome more tightly-knit movements and discourses (di Gregorio, 2012; Cordner and Brown, 2015). The dialogical process of arguing, listening, explaining, and making room for some adaptations is the way coalition participants try to influence one another (Hajer and Versteeg 2005).

Within this dialogical process and attempts to put together distinct allies, there is also the risk of co-optation, that is, members of the opposition may be dragged into an elite group in a way to dissent disapproval and maintain the elite group's stability. Despite the criticism over the risk of co-optation, NGOs and activists have been working closely together with international institutions such as the UN and its branches towards better global environmental governance and better EJ achievements (Caniglia, 2011). This has become even more common with transnational EJ issues. There are some contexts, especially in Global South countries, where participatory practices are weak and there are lack of guarantees that the rule of the law will protect communities and the environment (Hicks, 2011; Pellow, 2007). Especially in these cases, transnational activism and EJ associated efforts are necessary.

Efforts such as coalition-building and mobilization of new members and partners are key to EJM success. They have worked improving the use of resources; gathering policy-relevant information; improving legitimacy among stakeholders; allowing access to institutional networks and media; and increasing the chances when lobbying and representing the underrepresented (Orach et al., 2017). Coalitions built around EJ issues have a core need to develop political articulation of their members' similarities and differences in regard to EJ perspectives (Di Chiro, 2008). While environmental groups recognize the relevance of forging a coalition to achieve success during lobbying, this type of alliance also engages with media and social media to inform the public and to bring attention to politics (Orach et al. 2017). Another strategy often used by activists is to engage with science (Moore and Hoffman, 2013) as a means to overcome knowledge deficits and a lack of credibility.

The articulation of actors via alliance and coalition building is part of the 'politics' component of social movements. The political articulation of putting different elements to work together under certain conditions is hard and essential work. In the case of EJM, this effort is enabled by the way the parts frame what counts as an environmental problem and what does not (Di Chiro, 2008), allowing common grounds and frontier effects such 'our issues versus your issues'. In that vein, environmental politics is closely connected to the identity politics of social movements (Reagon, 1983), since the survival of coalition politics depends on finding the comfort of 'home' when engaging in alliances.

Because human rights issues tend to cross-cut environmental abuses as well (Pellow, 2007), EJM is often embedded in approaches to grasp the interactions of imbalanced groups with actors who are exerting their practice of power (Malin and Petrzelka, 2010; Bebbington, 2010). Recently, scholars have used intersectionality as a research approach to EJM and other activism studies connected to vulnerabilities (Edström et al, 2016; Doetsch-Kidder, 2012; Zavella, 2017; Malin and Ryder, 2018; Ryder, 2017). Intersectionality refers to the interlinks between race, class and gender in individuals or group. Such interlinks overlap and interdependently generate and perpetuate systems of discrimination. The term intersectionality was coined by Kimberlé W. Crenshaw in the context of gender theories and the feminist approach.

The concept has been used, for instance, as a tool to help grasp the complex interplay between the disadvantaged and privileged Supik et al., 2012). Although the concept has its roots in feminist studies targeting black women, lately it has been applied away from these intersections, also touching on sexuality, disability, nation, education, geographic locations, and others. The analytical tool of intersectionality has been used to uncover evidence on how activists strategically address multiple levels in their activism (Choo and MarxFerree, 2010).

The connection of environmental movements to rural and land issues

Historically, environmental movements date from the 1970s. The accelerating industrialization and natural resources exploitation, however, has given room for more activism involving the environment and critics of capitalism and democracy (Rootes and Brulle, 2013). There is a connection between environmental activism and the overall individual level of education. Usually, highly educated people have joined environmental movements to express their concerns about environmental issues (Rootes, 1995).

In countries where less educated people are being negatively impacted by social and environmental consequences, however, most cases are connected with locally unwanted land uses. To the movements that rise on such circumstances, the term 'environmentalism of the poor' (Martinez-Alier and Elguea, 2005) has been used, but they are also referred to as 'grassroots environmental movements' (Rootes and Brulle, 2013), groups facing 'slow violence' (Nixo, 2011), or 'environmental justice movements' (Walter, 2014; Martinez-Alier et al, 2016).

The Landless Workers' Movement in Brazil, for example, is considered the largest and most active social movement in Latin America. Under the land reform movement, their collective actions and identity were inspired by liberation theology, rooted in religion. One of its main tactics has been the extra-legal occupation of rural lands combined with disruptive demonstrations (Hammond and Rossi, 2013) putting pressure on authorities concerning agrarian reforms and the need for better land distribution in Brazil.

Activists work by putting pressure on decision-makers, towards more access to knowledge and information, more transparency and participation

(Della Porta, 2013). One common feature of some social movements is the democracy component. Grassroots movements, for example, are common in rural areas and have started activities because of the need to mobilize and apply pressure for more participation, usually triggered by hazards and impacts associated with issues such as environmental contamination. Studies suggest grassroots movements are growing at local levels, more and more commonly linked to networks at the global level (Horton, 2013). In particular, they act in response to globalization and capitalism, with companies as the main target and they typically carry out bottom-up actions (Peet and Watts 2004).

In Brazil, social and environmental conflicts, in general, have been documented and analyzed extensively (Keck, 1995; Kröger and Nylund, 2012; Zhouri and Valencio, 2014; Losekann, 2014; Zhouri and Valencio, 2014). Historically such conflicts have happened in the context of rural and agrarian movements. For example, these include the Landless Workers' Movement and their land struggle (Gohn, 2013; Santos, 2014), and the trajectories of activism in the context of water dam projects (Rothman, 2008; Blanc, 2009). More recently, the context of rural resistance and opposition to extractive industry projects have also been academically investigated (Leroy and Malerba, 2010; Zhouri and Valencio, 2014; Coelho, 2015).

Sometimes, however, unwanted land uses are also represented by wealthy communities or other segments of society. The resistance to projects that represent land uses in disagreement with a particular neighborhood or community are commonly described as NIMBY. The acronym stands for 'not in my backyard'. The term is not new and has been of scholarly attention for some decades now (Brion, 1991; Dear, 1992; Hunter and Leyden, 1995; Schively, 2007). In earlier studies, the complexity surrounding 'nimbyism' has been acknowledged. It suggests that practitioners interested in effective responses to NIMBY concerns should understand how such opponents think to learn how to engage them in decision-making processes (Hunder and Leyden 1995; Schively, 2007).

3 METHODS

3.1. REFLECTIONS ON THE RESEARCH PROCESS AND FIELDWORK

The process of reflecting critically on the self as a researcher is crucial (Lincoln and Guba, 2000). It encompasses the whole research process, from the selection of research questions, methods, and epistemological commitments to the publication of results and their implications. Reflexivity is a complex, dialogical, and permanent process that cannot be hidden as part of a researcher's internal process. Instead, it should be rendered visible with explicit elaboration and a description of the research in practice (Milan, 2014). In the following paragraphs I will explain and reflect on my role as a researcher during the time this study was carried out.

As a business administrator and project manager by training, I have always understood the industry and corporate worlds through managerial lenses. Stakeholders contrary to the execution of projects are likely to be interpreted, in practice, as an issue. An issue to be solved and/or a risk to be managed. By working with communities close to industrial projects, I learned from practice the implications when activists and community members resisted such projects and hampered the business or the project from succeeded. On the other hand, the organizational literature recognizes the relevance and influence of activism in pushing and thus improving corporate performance concerning environmental and societal matters such as sustainability, gender equality and LGBTQIA+ inclusion (see, for example, King and Soule, 2007; Bakker and den Hond, 2008; Vasi and King, 2012; McDonnell et al., 2015; Soule, 2018).

By searching for evidence of societal members' triggers and willingness to understand and participate more in mining decisions, I found what looked like a network of academics, NGO members and grassroots activists. I learned later that this was a national anti-mining coalition. They were timidly discussing timing topics about mining, doing research on the connections

between politicians and mining corporations, trying to underscore corruption links and traces of private interests in public affairs.

Once planning the fieldwork trip for this research, I got in touch with some of the academics involved in this network and asked more about it. They seemed a bit worried to reveal information to me at first. I thought this had to do with my own academic and practitioner backgrounds. By training and practice I was very little connected to the causes they were supporting. Previous research shows that social movement participants expect, and sometimes even demand, political alignment with their causes from the researcher (Milan, 2014). Not to mention that I was coming from Finland, a country that sounds exotic and far away from the Brazilian perspective, which could sound also suspicious.

Moreover, access to a research setting is never a given. Given the fierce and ongoing conflict between mining companies and resistance groups, it was difficult to find the gatekeepers and gain access to the activists. The literature suggests that persisting conflicts often encourage great suspicion and refusal of outsiders (Lee, 1995). To a certain extent, my access to the field was negotiated and renegotiated several times as I was gaining trust among the network members and they were learning about my research topic and objectives.

When I started to gather data about the anti-mining movement in Brazil, it was clear in my mind that my objective was to understand their world in their own terms. In conflicts involving mining companies and communities, people who are geographically and socially distant from these realities usually rely on narratives to understand what is happening in the struggle (Golub, 2019). Furthermore, there is a growing body of research considering that such struggles are surrounded by situations involving 'structural violence and injustice' (see for example, Young 2011). The main response to this has been to make it more visible.

In line with this thinking, my methodological choices have to do with recognizing activists as knowledge-producing subjects (Chesters, 2012), without however accepting their narrative as the ultimate truth. Activism produces critical subjectivities in which contextual and situated knowledge are valid (Conway, 2004). I had in mind that one of the outcomes of activists'

efforts is to shape public opinion about company-community conflicts. Thus, I was aware of the fact that the outcomes of my research might also be influential on interpretations of the particular conflicts that are the subjects of my study.

During the fieldwork period in Brazil, I used a notebook as a means of self-reflection, self-monitoring, and self-disclosure. I could display my emotions and thoughts during the intense period of data collection via writing and taking notes after interviews and participant observation sessions. While it is clear that data is collected to produce interpretations of experiences and should be as explicit as possible (Bloor and Wood, 2006), my notes were used afterward as a 'guide and a trigger' (Okely, 1994) to better find scientific evidence through data and reflection.

Under such guidance, I had always considered the scientific objectivity as something I should aim for and not as an outcome to achieve every step on the way. With time, the scientific objectivity gained strength. This was due to a combination of matters. First, I have had the opportunity to share my results in seminars, conferences, and workshops. The preparation and actual presentations helped me to reflect on my data and results with more objectivity. Additionally, I have had several discussions with colleagues and have received many editing suggestions from supervisors, reviewers, journal editors, and other readers. Those suggestions have helped me to narrow down my research focus and sharpen my storyline for the thesis.

Nevertheless, after I came back from the fieldwork and was finishing up part of the data analysis, the Fundão tailings dam failed in November of 2015 in Mariana, Brazil. The failure caused 19 deaths and major environmental contamination and damage to fauna, flora, rivers, and the Atlantic Ocean. The national mining scenario gained new momentum, and it escalated very quickly and drew a global audience and attention. Therefore, I decided to also include this new momentum in the thesis. The tailings dam failure was at the top of the national agenda and buzz media for several months, and also received a great amount of international attention. By now, five years later, the aftermath is still not completely concluded. The company responsible for the dam has received a new license to operate and will re-start production shortly.

At the same time, the activists saw the dam failure and aftermath as an opportunity to insert their views and discourse. Considering that meaning does not derive solely from coherent structures, the interpretation of events is a key mechanism of meaning construction and transformation. Cultural elements can also be mixed and matched to suit specific circumstantial needs (Kane 1997, 253).

I decided then to collect data, especially on the first 60 days after the dam failure to convey how the activists reacted to it. Their reaction was both in attempting to provide justice to the victims and, at the same time, to further and strongly disseminate their discourse and interpretation on mining activities in Brazil (**Article 3**). As posed by Kemp and colleagues (2011), a great part of the mining, community, and conflict literature focuses on cases in retrospect to examine conflict scenarios and identify 'what went wrong'.

It is relevant to note that even though I have used environmental justice studies to frame the arguments and findings for this study, my main drive has always been to display the activists' view of their struggle. My main objective is to interpret and translate the activists' views, but not their take in a particular conflict. Usually, researchers analyze the community standpoint to understand resource development and local-level conflicts (see Kemp et al., 2011). Even though I make use of two cases, my main research interest is not in the conflicts at the local level. I want to show how activists give meaning to their struggle at the national and international levels. Thus, for **Article 2** I have used environmental justice theory to frame the activists' general claims and interpretation of mining conflicts and debates. I have used their own voices to express what kind of 'justice' they are looking for and what main 'injustice' cases or processes they see in the mining sector in Brazil, especially in relation to company-community interactions.

Movements construct and communicate power, focusing on intersubjective and interpretive factors (Benford and Hunt, 1992; Poletta, 1998; Benford and Snow, 2000). Consequently, this research analysis process is about how the anti-mining movement and coalition perceive and act based on their perceptions. It has no attachment with the 'truth', or what is 'right' or 'wrong'. I am using the support of the literature to convey the activists' views and interpretations on matters that are relevant for them. Hence, the activists

build discourses, grievance mechanisms and activities that are supported by the idea that mining projects in Brazil are operating under a capitalist logic that is causing social and environmental consequences, neglecting local rights and wishes and degrading the environment around such projects.

3.2. RESEARCH METHODS AND DATA COLLECTION

The developments of the events involving the mining scenario in Brazil delineated above were not so clear when this study began. The methodological task was to find a way to examine the anti-mining movement thoroughly enough to determine how it was established and developed during in the 2013-2017 period. This goal, of learning how a movement actually establishes and grows (instead testing a detailed a priori hypothesis), called for an exploratory study using an open-ended approach close to grounded theory building (Eisenhardt and Graebner, 2007).

I began the research without formalizing any expectations of what actions activists take to establish and develop their movement. Formulating precise hypotheses seemed premature because current theories on mining and society and anti-mining are underdeveloped. For instance, in his article on pending agendas in the extractive industries, Bebbington (2015) argues how scholarly and activist worlds are not well-tooled to work on extractivism. The reason for this is partly due to the fact that very few NGOs inside and outside Latin America had previous knowledge of the extractive industries when the latest mining boom happened in the region. Moreover, the scholarly world also faced a similar situation, with experienced academics on land, agriculture, indigenous peoples, and human rights migrating to understand the extractives, and especially mining. It remains a question as to whether the scholars working on the issue have now an adequate understanding of the technologies, market, legal issues, and other complexities involving the mining industry (Bebbington, 2015).

The expectation of a doctoral thesis to test or generate hypotheses is relatively common. Scholarly discussions on the use of hypotheses in qualitative studies, however, argue that research focusing on this type of

research stem from social sciences and do not tend to rely on hypothesis testing (Dworkin, 2012). Moreover, qualitative studies, in opposition to quantitative ones, often generate hypotheses instead of testing them (Sullivan and Sargeant, 2011). Qualitative methods are used to explain complex phenomena, and hypotheses generation can be interpreted as new insights and understandings that the study can bring.

That said, it is relevant to clarify that one task of this research is to interpret the influence of the movement on the mining sector. While first the research is interested in understanding in which context the movement was established, the study is also involved in interpreting and explaining how the anti-mining movement has influenced and affected other actors in the context.

To gain a close view of the movement's responses and influence, I wanted to set up a round of interviews supported by a follow-up about two years later. The interviews were supplemented with intensive desk research, participant observation, and informal conversation. My strategy was to conduct interviews with the executive board and strategic members of the national anti-mining coalition. This coalition was gaining prominence in public mining debates and working closely with the anti-mining movement in Brazil.

In order to address the research task of understanding how the anti-mining movement was established and its dynamics, it was important to get in contact with activists in charge of strategies and tactics, and who were also familiar with the movement and its history. Potential respondents were also mobilized through a snowballing process. There were five data sources: 1) initial interviews with academics connected to the anti-mining movement; 2) two rounds of semi-structured, in-depth interviews with academics, NGO members, social movement organization militants who were involved to a great extent with how the anti-mining movement was established as a national movement and which strategies and actions have existed in course in its development; 3) participant observation in the movement's activities (meetings and events); 4) desk research focusing on documents, websites, reports, books and booklets provided by the interviewees, and online data produced by the activists and other relevant stakeholders such as the authorities, media, mining companies; and 5) data collected from the academic literature.

During data collection processes, I inductively focused on the participants' views to understand their perspectives and experiences (Blee, 2013) rather than framing them in pre-determined categories or concepts. The empirical material from the fieldwork and document analysis rely as much as possible on the activists' standpoint on the mining issues in Brazil. The questions inserted in the data collection instruments were broad and general, allowing the participants to elaborate their meanings and for interpretations of the context.

These materials were collected during and after fieldwork to gather background information and to support and complement analysis. This thesis comprises qualitative methods research, combining a historical sociology approach (**Article 1**), case study methods (**Articles 2 and 3**) and a literature review as a research method (**Article 4**).

Research on social movements often tries to understand the processes of activism and the experiences of the activists. To do this researchers combine institutional and non-institutional ways of gathering data (Zhouri and Valencio, 2014), the use of chronological reconstruction of the conflict (Urkidi, 2010), and may even live in the community, taking part in assemblies, local activities and rallies (Urkidi and Walter, 2011). There is also a branch of social approaches to mining issues rooted in ethnography and other research methods originally introduced in anthropology (Coumans, 2011; Kirsch, 2002; Godoy, 1985).

Initial interviews

To recruit potential interviewees, I extended an invitation via an open letter to the network's mailing list members to take part in the study. Potential respondents were also mobilized through the snowballing process. Snowballing was also used as a strategy to get to know (Noy, 2008) of who was in the coalition and to reach the sample size limit through interviewees loosely connected to the network when potential respondents refused or could not be interviewed, or additional nominees were already on the initial list of potential interviewees.

An entry interview, using a semi-structured format, was conducted with academics who acted as gatekeepers to allow contact with the anti-mining

movement activists. These interviews began by asking the academics about their views and participation in the movement. Then they were asked to describe the movements' strategies and actions. After that, they were asked to list key people and organizations involved. Each of them identified several potential interviewees for the research. The decision then made to focus the in-depth round of interviews with each member of the Coalition executive board instead of random movement members. The choice was based on criteria similar to those other researchers have used to define what is relevant when conducting social movement research (see Milan, 2014). It reflects a commitment to the moral dimension of social movement research and the challenge of producing scholarship able to speak also to social movements.

Semi-structured, in-depth interviews

After the initial interviews, every executive board member was invited to be interviewed. All those who agreed to participate were then contacted and interviewed. The interview consisted of nine topics broken down into 26 themes adapted as open-ended questions. Following the methods of inductive research, these questions were supplemented with ones that seemed fruitful to pursue during the interview. The interviews were on average 60 minutes in length, but occasionally took as long as two to three hours. The interview began by briefly explaining the research, the purpose of the interview, the duration, and the guarantee of confidentiality.

Then their view was requested on paradoxical aspects related to mining such as: land disputes, mining in conservation and indigenous areas, mining operations and local development, and the legitimacy of corporate sustainability vis-à-vis denouncing mining companies' performances violating the Brazilian environmental and human rights laws. Each interviewee then described their take on the themes allowing a general view of their perception of controversial aspects associated with mining and society in Brazil. From this overview, the interviews went into more specific questions about mining conflicts, acceptance, and resistance.

The third portion of the interview was dedicated to questions on anti-mining and activism, aiming to understand in depth the movement agenda, leadership and membership, agenda, goals, actions, and reactions. The story of each

relevant decision in the movement traced in the initial interviews was traced along with each member's perspective on it. Questions were concentrated on facts and events that subsequently were cross-checked with other interviews and supplemental documents. This was an opportunity to assess the history of the movement, its development and how the actors are intertwined in their strategies and actions. The final topic was related to whether activism was capable of influencing policymaking and participation in mining discussions and decisions. Topics included pathways for public participation in mining decisions, public hearings, and policymaking processes. The perceived role of environmental licensing agencies and prosecution offices in the above-mentioned decisions and processes were also scrutinized.

The second round of interviews had a similar format to the first round, and it had a two-fold objective. First, it was important to gather data mainly on how the anti-mining movement had grown over that period vis-à-vis mining events (i.e. Fundão dam failure), especially in terms of the influence the events had had on the movement. Second, it was an opportunity to cross-check facts and impressions potentially left out in the first round or questions that had risen because of the shifts in Brazilian mining and in societal aspects of national attention, such as the impeachment of the former President, Ms. Dilma Roussef.

Thus, the interview started by asking about the main perceived changes in the movement during the last two years, and how/if their main focus had shifted within this period. Then, the participants were asked about changes in engagement and membership within the movement. The participants explained who new members were, how the anti-mining movement routine had adapted to the new momentum and who were now taking place in the Coalition executive board.

The second part of the interview consisted of questions about macro themes in the context potentially influencing the movement (see Meyer, 2004) such as the aftermath of the Fundão dam failure, and major changes in the national political scenario. In 2016-2017 the former president Dilma Rousseff went through an impeachment process and was substituted by her vice-president, Mr. Michel Temer. This resulted in subsequent changes

in several ministries and other public authorities, potentially impacting the movement penetration and participation in policymaking discussions.

The final set of questions were specifically about the movement's influence in the national debate. The participants explained their perception of how Brazilian society was changing its view of mining and its impacts and what the anti-mining movement's role within this process was.

After each interview, several rules were followed. First, I cross-checked facts and impressions and reviewed my notes within the next 24 hours. All recorded data was then transcribed, regardless of its apparent importance at the time of the interview. In parallel with the interview notes, I had collected and registered side notes with impressions of each interviewee and the organization they represented. I conducted ten consented interviews guided by an inductive process.

In research on mining and society, the use of primary data as a data collection method, and the use of in-depth or semi-structured interviews seems prevalent (Urkidi and Walter, 2011; Franks et al., 2014; Kemp et al., 2011; Santos and Milanez, 2015), in addition to direct and participant observation (Kemp et al., 2011; Santos and Milanez, 2017; Urkidi and Walter, 2017). However, scholars have also applied other techniques such as activist and action research (Urkidi, 2010; Urkidi, 2011), focus group discussions (Maconachie and Binns, 2007), and on-site rapid organizational ethnographies (Kemp et al, 2011). This latter being close to the participant observation I have conducted during my fieldwork activities.

Participant observation

Participant observation activities were carried out in Brazil from April to July in 2015 in several cities in the states of Minas Gerais, Rio de Janeiro, São Paulo, Espírito Santo and Goiás. Interviews were complemented by document analysis and participant observation sessions. The opportunity to be inserted in the specific contexts where the activists lived and worked helped me to understand their historical, cultural, and social backgrounds (Elwood and Martin, 2000; Woliver, 2002). Furthermore, because such settings shape their interpretation of reality, the data collected from the interviews and participant observations was triangulated, when possible, with social

movement organization and NGO reports and official documents that were made available by the participants. By following the anti-mining activists and their activities, I was able to find those who were likely to know about the movement's history, its tactics, dynamics, and strategies using snowball sampling given the non-institutionalized nature (Blee, 2013) of the anti-mining movement in Brazil.

The social constructivism approach for social movement studies supports the idea that activists construct meanings and produce interpretations of reality (Benford and Hunt, 1992; Kane, 1997; Oliver et al., 2003; Travaglino, 2014; Drury, 2015). The approach arose as a reaction to the over-rationalization and strong structuralism present in the resource mobilization theory conceptions of social movements (Drury, 2015). Social constructivist scholars believed that protesters respond to the world as they perceive and interpret it, or in other words, as they construct meanings and an identity for the movement (Melucci, 1995; Drury, 2015). Meaning is also pivotal to the issues of grievance construction, movement participation, and to the forging of strategies and tactics (Benford, 1997).

As an outcome of such meaning constructs and interpretations activists produce knowledge, usually from their grassroots experience. Such knowledge should not only be acknowledged but also taken into consideration when conducting social movement research (see for example, Chesters 2012; Milan, 2014).

With two academics and one key anti-mining activist as brokers, gradually I was introduced to several anti-mining Coalition members, setting interviews, and receiving invitations to join other events. In total, I have participated in a three-day academic conference in Belo Horizonte to get to know academics and NGO members involved with the anti-mining movement; I was then invited to one book launch event combined with a workshop for NGOs, academics, and activists in Rio de Janeiro; one academic meeting in Minas Gerais; and a three-day (and night) science and activism event at the Florestan Fernandes School in São Paulo.

The academic conference in Belo Horizonte was a preliminary participant observation activity, given that the event included academics who were not necessarily involved or key actors in the Coalition and national anti-mining

Movement. It was an important opportunity to take notes on key topics being discussed by academics in Brazil connected to my research topic, and to get to know some academics and NGO members and make attempts to set up some interviews. Unfortunately, the contacts made during this event were not successfully followed-up with interviews due to some resistance. Two potential interviewees rejected talking to me by agreeing on setting a date and not showing up twice, or recurrently indicating a third person to be interviewed who was not so closely connected to the strategies and decisions inside the Coalition.

A few weeks later, I had the chance to participate and observe an event organized by the anti-mining Coalition. It was a workshop coupled with a book launch. Representatives of several different NGOs and grassroots movements were present and some academics, too. The venue was the auditorium of a religious institution, and several of the participants were church representatives. After each workshop presentation, a debate session would open. The 'resisting front' was quite diverse, with many 'turfs'. Many of the participants would like to prove their point and defend their 'turf'. Some of the activists seemed against all kinds of mining activities, anywhere. They had fierce sentences like "**mining has to stop now**". Others were trying to discuss the need to understand the interlinks between mining and society, its impacts, and issues. Other participants still wanted to show the impacts of other extractive industries such as oil and gas. The array was thus very heterogenic. People had different backgrounds and represented different organizations; each with their own objectives and agendas. The anti-mining narrative, sometimes stronger, other times milder, was always present in their storylines.

At the end of this first participant observation, I managed to establish connections with several people from different movements and organizations. I decided to change my strategy. Given that research involving conflict typically involves explicit negotiation with a gatekeeper (Lee, 1995), I set an interview with one of the key members of the anti-mining movement to gain his trust and hopefully then be able to access other potential participants. By getting to know him, he trusted to invite me to what became my second participant

observation session, an event for academics and activists at the MST political training school.

The Florestan Fernandes National School was founded in 2005 by MST to educate and train its members, and international youth and adults. The School combines politics theory and practice in their courses. The courses' themes range from agrarian issues and Marxism, to feminism and diversity. Students learn by reading national and international political theory classics in courses that take from one week to three months. The lecturers are professors and intellectuals who volunteer at the School. The practices at the School involve tasks such as keeping collective spaces such as cafeteria and meeting rooms tidy.

By spending three nights and days at the school, I learned about some of the symbolism, chants, personal history, and history of the movement as well. Social movements do not take place in a social vacuum (Travaglino, 2014). I used this opportunity also to have informal meetings with several academics and activists, including interviewing another key member of the anti-mining Coalition.

Documents and other relevant sources of information

Social movement books, reports and internal documents were examined as available. Data was also collected from archival data, including NGOs, social movement and other resistance group websites, discussion forums, social media pages and other online links provided by the informants. Complementary, to reduce the bias from recall and rationalization, I collected data from other sources as well. Before, during and after the fieldwork, documents, reports, pamphlets, and other sources of online or material data were collected to double-check the information provided by the informants. I regularly monitored the websites of various movements and resistance groups and collected information from the media press, industry press, and intellectual discussion forums online. I also collected a range of scientific papers from different disciplines that have been published about tailing dam failures in Brazil and other relevant mining discussions in the research period. These sources enabled me to triangulate my findings and build stronger interpretations (Yin, 1989).

During the fieldwork, I tried to gather knowledge produced by the activists as much as I could. Examples of such products include movement manifestos, positioning letters about mining conflictual situations, movement statement rules, booklets produced in partnership with NGOs, and internal documents. These materials were used directly or indirectly in every article produced during the research period.

Research on mining and society makes plenty of use of documents as data and sources of information (Jenkins, 2004; Urkidi, 2010; Franks et al., 2010; Kemp et al., 2011; Zhouriand Valencio, 2014; Santos and Milanez, 2015; Walter and Urkidi, 2017; Sairinen et al., 2017). These documents are usually official and/or institutional documents, such as government or corporate reports (Franks et al., 2014; Jenkins, 2004; Zhouri, 2004), but researchers also combine this with newspapers and online information as sources of information (Sairinen et al., 2017; Walter and Urkidi, 2017).

To write **Article 3**, I relied on documentary analysis of material which was available online. I have used 230 reports, documents, news, and website posts published in the first 60 days after the Fundão dam failure. It concerns the consequences of the Fundão dam failure, a mining disaster that happened in Brazil in November of 2015. The reason to use this time frame was to investigate the emergency response capacity during the disaster aftermath. **Article 3** tackles key issues and associated responses from key stakeholders to understand the capacity that activism had to influence matters during the aftermath of the disaster. The case is an appropriate example of a case with high visibility at national and international levels, providing, therefore, a great amount of material for desk research. The main sources of data were available online and included national and international media, public authorities' websites and reports associated with the Fundão dam failure, as well as reports from social movement organizations, NGOs, in addition to the websites of companies involved with the tailings dam failure, industry-led organizations, the UN, and academic reports on the tailings dam aftermath.

The use of a historical sociology approach

Two fundamental questions in social movement research is why activism happens and what triggers activism participation in such movements. Past events and circumstances are key to providing an overall understanding of why and how activism occurs. The use of a historical sociology approach as a research method in social movement research is not so common (see, for example, Bosi and Heiter, 2014). This consists of going further than a descriptive analysis of the past. I have studied the societal context and historical developments in Brazilian society as a background context to my research on anti-mining activism today. It uses the principle that, in order to explain the structures of current activism and social dynamics, one must investigate their historical origins and development (see, for example Clemens and Hughes, 2002; Forsyth, 2007; Deflem and Dove, 2013). Nevertheless, in studies on mining and society, it is common to approach cases by looking back to past conflict scenarios and identify 'what went wrong' in retrospect (Kemp et al., 2011).

The use of historical sociology approach as method for the article did not include presential visits to archives. Instead, I made use material directly generated by new social movements (Bosi and Heiter, 2014). Some of the material was collected during fieldwork, other material was available in activists' online repositories such as the webpages of national movement organizations.

In **Article 1** I explain how several national grassroots movements in Brazil are interconnected through time and space, funding, personnel, and history. The main argument was to show that mining resistance in Brazil is not an isolated process, sparkling and fading away from project to project. By using a historical sociology analysis, I explain how social movements at the national level in Brazil have sprung from each other and are interconnected for many reasons, including: land struggle, power imbalance in the conflict with companies, as well as having similar kinds of supporters and ideologies.

The use of historical approaches in case studies offers opportunities to examine social processes in ways that both cross-sectional and longitudinal research cannot (Hargadon and Douglas, 2001). The careful analysis of moments in history to understand the context in which a new movement

emerges offers the opportunity to observe these larger arrangements of meaning present in the Brazilian societal context. The use of a historical sociology approach also provides a perspective that covers the decades often necessary to observe how struggles emerge and develop. Further, historical analysis offers the ability to understand how existing actions and movement structures are not random, but rather a result of decisions linked to influences from the past, some of which were made intentionally and others more implicitly.

The use of historical data may be problematic, however, because historical accounts often neglect the concrete details that shape and constitute actions. Fortunately, in the issue of land and rural struggles in Brazil, some cases offer a plethora of recorded history and I was therefore able to draw on considerable data from a wide range of sources and disciplines. I relied on recent books offering primary data on rural struggles in the 1980s and its connection with the emergence of national rural movements (Rothman, 2008; Blanc, 2019). I also drew from scientific discussions on struggles for land and water, and those leading the formation of national rural movements (Rothman and Oliver, 1999; Gohn, 2008; da Silva and Rothman, 2011; Gohn, 2013). Therefore, while this analysis lacks access to the original details, few events in the history of rural struggles in Brazil have been well documented.

Case study methods

The qualitative design of this thesis is highly embedded in case studies. Two cases convey the evidence to support the interpretations and conclusions drawn from the research. Those consist specifically of the mining framework draft debates starting from 2013 and the aftermath of the Fundão dam failure in 2015 (**Articles 2 and 3**, consecutively). The reason for using these cases as a research choice was to allow in-depth analyses of the activists over time (Yin, 1989). In **Article 2**, the choice of the case study method allowed me to trace back the debates on the mining code draft bill and contrast them with the repertoires of action displayed by the anti-mining coalition over time. In addition, excerpts from interviews and documents provided substantial material to interpret activism through environmental justice lenses and to set the background information on movements resisting mining in Brazil.

The case study methods were also useful to generate detailed information and grasp how anti-mining activists mobilized and acted during the aftermath of the Fundão disaster (**Article 3**). By identifying the key issues associated with the disaster, I could frame the results in terms of access to drinkable water, access to remedies and safety. By assessing the activist dynamics within these issues and contrasting this with how key stakeholders also responded (responsible companies, the UN, and the Brazilian authorities) I was able to then discuss the movement's capacity to influence the aftermath.

The purpose of this analysis is not to ultimately develop a set of general rules that apply across both cases, but instead, to look at the concrete details and actions of a particular situation to understand the activists' responses and their influence closely. Exploring momentous events with a careful eye toward a movement's tactics and actions highlights the reciprocal links between actions and counteractions played out by the activists and other stakeholders. Furthermore, the interpretation in a case study approach is based on a particular moment in a given context, situation, and time (Burton, 2000; George & Bennett, 2005; Gerring, 2011). In addition, while the past facts of cases are difficult to access and often depend on secondary sources, the facts of current events are often distorted by the movement's agenda. Over time, as the momentum wanes, different stories surface.

The use of case studies as a research strategy in social movement research includes the generation of a richly detailed elaboration of a system of action from one or more networks of actors within a social context bounded in time and space (Snow, 2013). As suggested by Della Porta and Tarrow (2005), contentious politics are growing in scale and scope. Consequently, movements at the local level are becoming the master frame of new mobilizations, often producing loosely coupled international networks around particular campaigns, adopting and adapting repertoires of protest from different past and current movements (Della Porta and Tarrow, 2005).

The use of cases and case studies to approach mining conflicts is extensive (Kirsch, 2002; Jenkins, 2004; Hilson and Yakloveva, 2007; Bebbington and Williams, 2008; Svampa, 2009; Coumans, 2011; Zhouri, 2014; Walter and Urkidi, 2017). Recent events have suggested that perhaps the Brazilian anti-mining movement's greatest role is in changing the political dynamics of

processes, making actors such as the state and corporations adjust and re-think their course of actions (see, for example, Szwako and Machado, 2019). I also present some arguments and discuss on this issue in **Article 3**.

A literature review as a research method

Article 4 contains a literature review on environmental justice and natural resource extraction. It opens the special issue on the same topic in the Environmental Sociology journal. Review articles are useful to evaluate the bulk of knowledge in a certain area or to examine the validity or accuracy of a given theory (Tranfield et al., 2003). Additionally, literature reviews as a research method in social-scientific approaches to mining research have been used as a way to indicate the research and practice gaps (Godoy, 1985; Solomon et al., 2008), or point of disconnection between technical and social perspectives (Kemp et al., 2010). The task of building such a review in the intersections between the environmental justice and natural resource extraction helped me to contrast my own work with other scholars and to gain new insights for potential constructs that emerged from my empirical work.

The concept of environmental justice keeps evolving in theory and practice and moving away and beyond their original meaning (Schlosberg, 2009). Thus, the crossings of movements fighting for environmental justice when struggling with extractive projects are to some extent new and still current for researchers and scholars. This review article provides an overview of these connections, while the scientific papers composing the special issue offer fresh empirical evidence on how these concepts and tools are being used in academic research.

3.3. QUALITATIVE DATA ANALYSIS

On the basis of the data analysis discussed below, I identified two cases that featured noticeably high levels of activism. I decided to look more closely at these actions and how they influenced the mining scenario in Brazil. I

followed Eisenhardt and Graebner's recommendation on choosing cases which are likely to extend emergent theory (Eisenhardt and Graebner, 2007).

I performed a content analysis of the interview transcripts followed by a cluster analysis to correlate the findings with the primary literature reviewed (**Figures 2** and **3**). When analyzing the data, the activists' positions were not gathered to be questioned or put against other actors' positions. Their standpoint was validated as a result of their own experiences and sense of community. The data preparation for analysis involved entering the responses into an electronic file and then verifying, coding, and analyzing it using spreadsheet programming. Categories of comments and cross-references to specific quotes were created to summarize and interpret the qualitative data (**Article 2**).

During documental analysis and interviews within the realm of mining and society scholars tend to be fixated on understanding one actor category—companies, government, or communities (Jenkins, 2004; Urkidi, 2011; Measham et al., 2013; Franks et al., 2014; Sairinen et al., 2017). Researchers with activists as research subjects, on the other hand, should carefully remember that their activism comes from their set of beliefs, feelings, opinions, and experiences (Woliver, 2002).

First round of interviews

For the data analysis I used methods developed to study activist group histories, which are explained in detail in previous work (Snow and Trom, 2002; Plows, 2008; Mattoni, 2014). My first task was to reduce the transcripts to a briefer, more manageable form. I used three steps in this reduction. First, I cropped each transcript objectively and then created a condensed file from them. After that, I split and ordered paragraphs according to themes and topics from each interview. Finally, I developed a scheme of codes to tag themes and statements of interest in the margins of the condensed transcripts. These codes were based partly on themes I was looking for when I started the research, and partly on themes that emerged in the interviews.

The codes and themes were grouped, re-grouped, condensed, and clustered until I reached the following result: first, the roles of NGOs and academics in the anti-mining movement; second, the anti-mining context

and the activists' perceptions on the mineral debate and its escalation; and finally, the third block focused on the internal dynamics of the anti-mining movement and its Coalition, strategies and actions. **Figure 2** illustrates the preliminary results of the coding process.

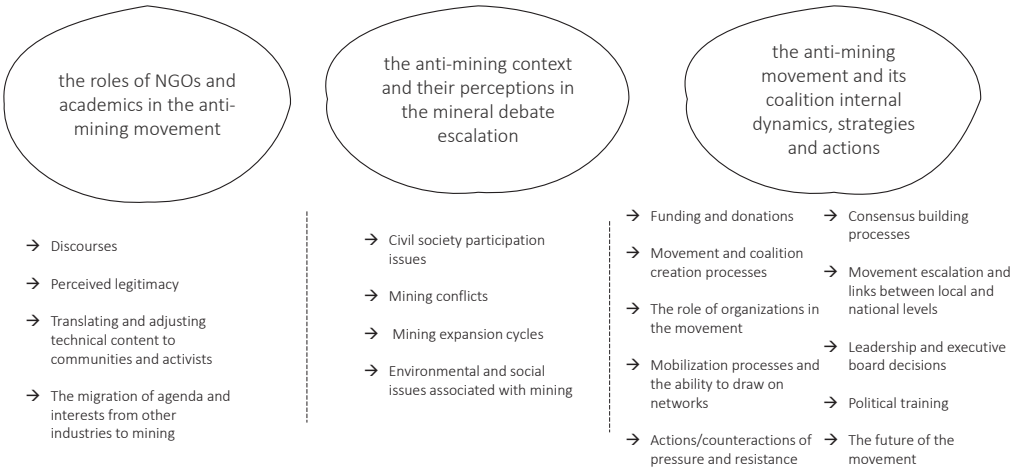

Figure 2. Coding frame for the first round of interviews

Second round of interviews

The second round of interviews followed the same logic described above. As a result of the coding process, the following emerged: the anti-mining movement and its Coalition internal dynamics, strategies and actions; events in the national scenario potentially influencing the movement; and actions toward societal behavioral change. **Figure 3** summarizes the preliminary results of the coding process.

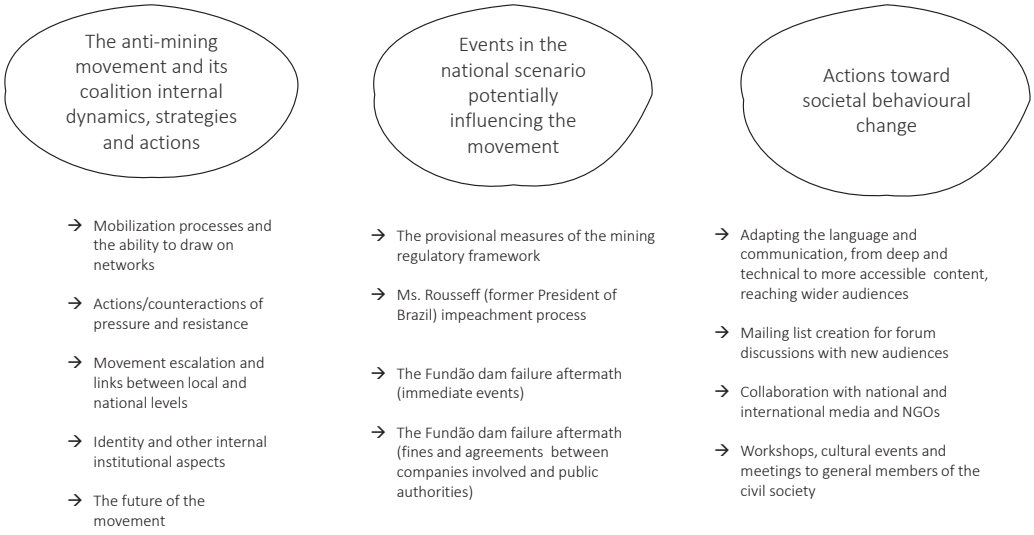

Figure 3. Coding frame for the second round of interviews

Analysis of documents, reports, and online sources

The analysis of documents, reports, online content, and materials produced by the activists consisted of extensive searching, reading, and sorting processes. It is important to become very familiar with the data (see Altheide, 1996) by reading, re-reading, creating and re-creating categories. Thus, comparing, creating codes and keywords, and then writing mini summaries of categories was also part of these processes (**Articles 1 and 3**).

Specifically, for **Article 3**, in which most of the data analyzed comes from desk research sources and not from interviews, I have followed four key steps during the analysis. Firstly, I split all the information collected in the dataset in terms of the timeframe for the article (60 days after the tailings dam failure) and all news, reports and documents collected during 2 to 7 months after that period. Even though the analysis is focused on what happened in the immediate 60 days after the dam failure, later data was helpful to build the case and supplement the article with relevant information and sequence of events. Secondly, I broadly grouped the timeframe information chronologically to better understand the sequence of the events, how the

activists acted to them, and how other stakeholders reacted to the activists' responses. By doing that, I was able to better grasp what happened.

Thirdly, I categorized the dataset according to: 1) the main issue in question, the description of what happened, 2) to which stakeholder group and 3) key actor that the issue was associated with, 4) the text excerpt from the original source, and 5) the link to the source from where the information was retrieved. At the end of this process, what I had was organized information of what had happened, when it happened and who was involved. However, in order to understand the dynamics involving actions and counteractions, I needed a different organization process. A process that would allow me to envision time, space, events, and actors' reactions more directly.

Thus, the fourth step was about actually creating a timeline of key events and actions. This process was labor intensive, and I physically built two timelines with A3 paper sheets and fixed them on the wall to help me visualize the contrast of events and sequence of stakeholder actions and reactions. What emerged was the logics of the focal phenomenon. Such logics encompassed more specific themes and key events than I had previously considered. Finally, it allowed me to regroup the excerpts of data following the logics and according to the following themes that emerged during the analysis: quality of water, access to remedies, safety, indemnifications and law suits, disaster reasons and responses, mining industry and politicians, financial decisions at the corporate level, impacts on the mining business and the overall industry, decisions and actions by authorities, deficit of law enforcement, and actions by civil society and activists. **Figures 4** and **5** illustrates the coding frame scheme for the issues and actors involved in the aftermath events.

Figure 4. Key emergency issues at the local, corporate and authority level during Fundão dam aftermath

Figure 5. Key stakeholder groups and actors who emerged and who influenced or were influenced during the aftermath of the Fundão dam.

The task of data analysis: answering the research questions

Once the transcripts were reduced and coded, the second major task in the analysis was to display the data so I could begin answering the research questions connected to the context (**RQ1**), responses (**RQ2**) and influence (**RQ3**) of the anti-mining movement. All the analyses performed during this research were integrated in separated drafts. Regardless of what the original data were derived from, I developed records or accounts (Altheide, 1996) that were relevant to the overall study. Each one of these drafts contained the main findings with my interpretations as first leads, which then became the compendium of papers published as base of the thesis. Together with the content analysis based on the interviews with activists and documents and materials produced by or related to them, I also analyzed my fieldwork notes collected during participant observation, and other observations I made during the investigation on the ground. The detailed descriptions of what I did, saw, heard, and felt (Altheide, 1996) during the fieldwork helped me afterwards when drafting the findings and drawing more general conclusions.

To answer **RQ1**, I compiled the movement's history. For that, I isolated statements about historical and current events, plans and decisions. I then arranged them chronologically. This process produced a consistent and detailed account, which was cross-checked during the document analysis and literature review supporting processes.

Three different types of timelines were then created: a highly abbreviated timeline (**Figure 6**) with the intertwined history of rural and land struggles in Brazil to support the elaboration of **Article 1**, the chronological line of events during the mining regulatory framework discussions (**Table 3**) to support the elaboration of **Article 2**, and two extensive spreadsheets containing the sequence of events during the first 60 days and between 2-7 months after the Fundão tailings dam failure to support the elaboration of **Article 3**. The latter two timelines also supported answers to **RQ2** and **RQ3**.

Grassroots activism relevant at the national level

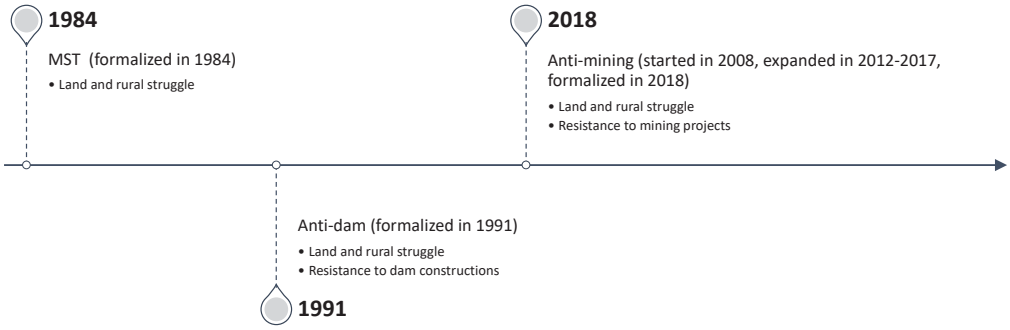

Figure 6. A condensed timeline illustrating social movement organizations relevant at the national level in Brazil.

Table 3. Timeline illustrating anti-mining Coalition actions/events vis-à-vis parliament actions/events.

Date	Anti-mining Coalition actions/events	Date	Parliament actions/ events
2010	CPT report—mining impacts on communities	17-19 June 2013	The President of Brazil sends a draft bill to the Congress with urgent status
June 2012	"Cruel Growth"—NGO magazine article	July 2013	Deadline for amendment proposition (372 amendments proposed)
September 2012	"New mining code in Brazil—For what and to whom?"—report	July 2013	Special Commission for the new mining code wants to withdraw the emergency status

Date	Anti-mining Coalition actions/events	Date	Parliament actions/ events
December 2012	"A new mining code for what?"—newspaper article	August 2013	Special Commission for the new mining code opens up dialogue visiting several states in Brazil
March 2013	Church's open letter on the new mining code	September 2013	Deputies want more time to discuss the new mining code draft
29 May 2013	Coalition's official launch	September 2013	State representatives diverge about mining royalties
June 2013	"Neoextractivism in Brazil?"—a scientific paper analyzing the new mining code draft	September 2013	Environmental and societal organizations are heard about the new mining code draft
4 July 2013	Open letter "do not hurry!"	23 September 2013	The emergency status falls
August 2013	"Who is who in the new mining code discussion?"—report analysis	February 2014	Internal disagreement in the Parliament concerning the new mining code voting
September 2013	Environmentalists consider the new mining code a regress	May 2014	Civil society action proposed against the new mining code controller is filed away
May 2014	Civil society files action for breach of decorum against the new mining code controller	November 2014	The Mining Code draft bill voting process is postponed
May 2014	Civil society files a security order to dismiss the new mining code controller	March 2015	The Mining Code Special Commission is reinstated
August 2015	"Who is who in the new mining code discussion?"—report analysis	August 2015	Controller delivers the new report on the New Mining Code
December 2015	Coalition is mobilized around the Fundão Dam disaster	December 2015	Controller delivers the new report on the New Mining Code

Each of these timelines worked as detailed documents providing major steps, consequential decisions, and substantial changes involving anti-mining movement actions and responses during the research period.

3.4. ETHICAL CONCERNS AND RESEARCH COMMITMENTS

The first ethical concern that social movement scholars should care about is with the recognition that there is no research that can be considered apolitical and/or neutral (Fuster Morell, 2009; Milan, 2014). Research findings have political implications (Denzim and Lincoln, 2011) as well as potentially posing risks to the research participants. Ethical issues in social movement studies require specific reflection. It is needed to find a balance between the rigor and quality of a scientific investigation and the potential consequences and repercussions of the knowledge that is generated from the research. For example, as explained by Blee and Vining (2010), researchers could try to avoid problematic groups and problematic topics. These choices, however, consist in great bias. While they do not guarantee a 'risk-free avenue', they could also limit the understanding of social movements, curtailing the range of what is known about activism and activists (Blee and Vining, 2010).

The literature about the ethical challenges when interviewing activists usually highlights that activism can be rational or irrational and comes as a result of the deepest beliefs, experiences, opinions, and sense of community of the activists (Woliver, 2002; Klandermans and Mayer, 2005). It is important to know that some activists may be suspicious when contacted by an academic for an interview, and they might want to know if the interviewer is pro or anti their cause (Woliver, 2002). In fact, it is not rare that activists expect or even demand from the researcher some sort of political alignment in exchange to access to field, for example (Milan, 2014). It requires a lot of effort and ethical reflection to establish a good relationship with the interviewees without misleading them about where our sympathy and appreciation lie regarding a given cause (Klandermans and Mayer, 2005). There is a close relation between the way researchers relate to the research subjects and type and quality of information they gather (Milan, 2014). Hence, relationship

building is a fundamental part of the ethical reflection and decision making process when studying social movements.

Thus, the selection of research questions, methods, and the setting of the epistemological commitments of the researcher have an impact on the knowledge that is generated from the research (Milan, 2014). Because of this, it is important to make explicit the ontological and epistemological premises in research into social movements (Chesters, 2012). I will discuss such commitments in the following paragraphs following Milan's considerations on ethics when conducting research into social movements (Milan, 2014).

Milan (2014) recommends four self-reflections on ethical issues when performing social movement research. 1) The relevance of the research for the activist's community (research subjects); 2) the inherent risks for the researched; 3) the gray area of power and privilege in which academia is embedded in contrast to the 'powerless' (grassroots activists); and 4) the accountability of the research subjects and their social and political realms of knowledge and being.

When it comes to the relevance of this thesis for the community of activists, the research takes into consideration the knowledge produced by the activists but does not work as a vector of encouragement or collaboration with them. Concerning this particular challenge Milan (2014) suggests a spin on empowering and involving the research subjects throughout the phases of the research. Nonetheless, I have not involved activists in the research design, data gathering, theory building or results dissemination. It was not a goal to create a two-way dialogue, to build learning communities, or to perform action research processes. This was a deliberated decision once while this research respects and is interested in the knowledge production by the activists, my involvement with them has happened in a more researcher-subject formal and 'traditional' way. I am more focused on questions that matter for scholars and practitioners interested in social movements than to tackle issues that matter for the activists. This does not imply that the activists will not be interested in the processes or outcomes of this research.

When it comes to the risks to the activists who were the subjects of this research, I take into consideration Milan's recommendation that social science is police science. I avoided harming the researched in several ways: by not

fostering their repression with the study results; by protecting the privacy and anonymity of the interviewees; storing data safely; negotiating disclosure with the activists; and by considering data from the activists' perspectives. For this thesis, the last consideration is the most relevant one. This research is not interested in contrasting views and discourses, but to highlight the activist perspective on mining conflicts. For that, I made use of data collected during the fieldwork, but also and especially of knowledge produced by the activists (i.e. reports, pamphlets, booklets, online content).

I also considered many aspects of the discrepancy between the researcher and the researched, or the observer and the observed. Especially during the participant observation sessions, I tried to recognize the differences between myself and the activists and build a fair research relationship with them. During the interviews, the asymmetrical relations between us were also acknowledged. This happened by recognizing the powers and privilege inherent to academia and how we produce knowledge in contrast to the activists. Activists produce knowledge via experiential evidence, or 'grassrootedness' (van Rooy, 2004) as opposed to scientific ways of gathering and analyzing data.

Finally, the accountability measures rely on finding ways to share and discuss the outcomes of this research with the activists. In the case of this research, I have shared all the papers published with the research subjects and was open to translate and discuss it with them. Milan (2014) suggests reflections on how activists could understand and make use of the data utilized in the research. This has lot to do with the decision between 'research with' or 'research about' activists. Additionally, as already explained earlier, this current thesis is about activism. It does not actively engage with the activists during data analysis or dissemination.

In addition, this thesis follows the ethical criteria required by the National Advisory Board on Research Ethics in Finland when approaching research subjects. The ethical principles of research in the humanities and social and behavioral sciences consist of three areas: a) respecting the autonomy of research subjects; b) avoiding harm; and c) privacy and data protection (National Advisory Board on Research Ethics, 2009).

When it comes to respecting the autonomy of research subjects, all participation in this research was based on informed consent and was voluntary. For data collection, I have used two rounds of interviews, one face to face and the second round remotely, online. In each round I had explained earlier via e-mail the purpose of the research and the subjects' roles as interviewees. I conducted the interviews only with those who agreed to being interviewed. Before each interview started, I again explained the process, objectives, duration, and the role of the subjects in the research, to which they all orally agreed.

All participants had my personal contact details and general information about the research duration and objectives. I had committed myself to sending them all the outcomes of the research in which I would have used data derived from the interviews (i.e. scientific papers) (aligned with Woliver, 2002). Since all the publications are in English and not all interviewees are fluent in English, I also made myself available to explain the main results and conclusions from each paper in Portuguese.

In terms of measures to avoid harm, and to maintain privacy and data protection, my main concern was to protect the subjects' privacy and dignity. Not only did I explain the research objectives and context to each of the interviewee, but I also answered their questions, doubts and concerns about the research inclinations and their role as subjects. I also quoted them in the articles always protecting their identity, by referring to them preserving their anonymity. I have considered how information may put an activist or group at risk or expose them to vulnerabilities (Blee and Vining, 2010). In **Article 2**, the journal's guest editor requested a list of locations and the affiliation of the interviewees cited in the article. I have done that by indicating the information in the most general way possible, ensuring an adequate level of confidentiality and protection of the privacy of the research participants.

4 RESULTS

This chapter summarizes the response given to the research questions in the articles of this thesis. The main task is to understand and explain how anti-mining activism has been established, developed and influenced in terms of actions and strategies vis-à-vis mining events between 2013–2017 (as introduced in Chapter 1).

The research avenues in answer to the questions raised in Chapter 1 are structured by interpreting anti-mining activism in terms of **context**, **response**, and **influence**. First, the results bring evidence of the societal context in which activism has been established in Brazil. The findings clarify the historical **context** of rural conflicts and land struggle in Brazil, showing how rural activism connects to the anti-mining movement. This clarification is complemented by the description of the actors who are taking part in the anti-mining movement. **Figure 7** illustrates how central constructs emerged based on the data analysis demonstrated in Chapter 3 and put together in **Article 1**.

The use of constructs follows the methodological guidelines in phenomenon-driven research, when the study is framed in terms of the importance of the phenomenon (Eisenhardt and Graebner, 2007). To allow results to contribute to theory building and its advance, as described in Chapter 3, I have identified categories capturing uniformities in the data and their properties and dimensions (Egan, 2002) and paid attention to the relevance of the categories as they emerged from data analysis. I then established emerging impressions from the evidence, conceptualizing the data (theoretical constructs) and the emerging relationships between concepts (central relationships among constructs, see **Table 4**).

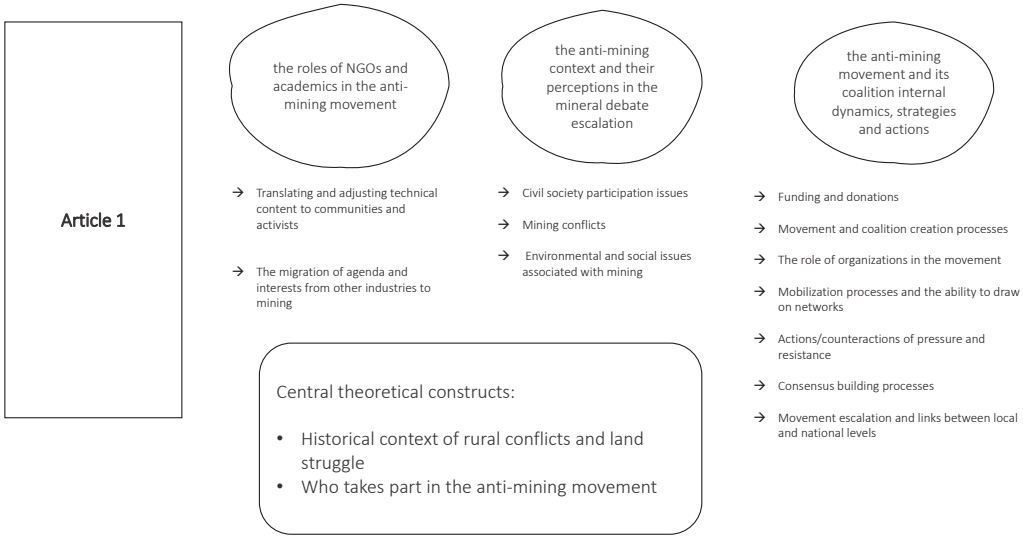

Figure 7. Central theoretical constructs for Article 1.

Then, findings on activism as a response to events connected to mining in Brazil are analyzed through the draft mining code discussions and Fundão dam failure aftermath cases. This will be detailed by strategies and actions taken by the activists in **response** to these two events. **Figure 8** illustrates how central constructs emerged based on data analysis demonstrated in Chapter 3 and put together in **Article 2**.

Figure 8. Central theoretical constructs for Article 2

Finally, I will interpret the influence of activism on mining in the societal context of Brazil. By **influence** I mean collective actions performed by activists that valuably served to increase or support relevant mining and society topics within the societal context of Brazil. Hence, the activists' influence will be broken down into the efficacy of mobilization and collective action; the influence in advancing environmental issues connected to mining; and the effect of shedding light on social and economic inequalities. **Figures 9** and **10** illustrate how central constructs emerged based on the interviews and document analyses demonstrated in Chapter 3 and put together in **Article 3**, respectively.

Following Eisenhardt and Graebner's suggestions on the use of tables and other visual tools to summarize case evidence (Eisenhardt and Graebner, 2007), **Table 4** shows the depth and detail of the empirical data and complements the selective story descriptions contained in the following sections. Tables often complement the description of the focal phenomenon and summarize the evidence and indicate how constructs have emerged (Eisenhardt and Graebner, 2007).

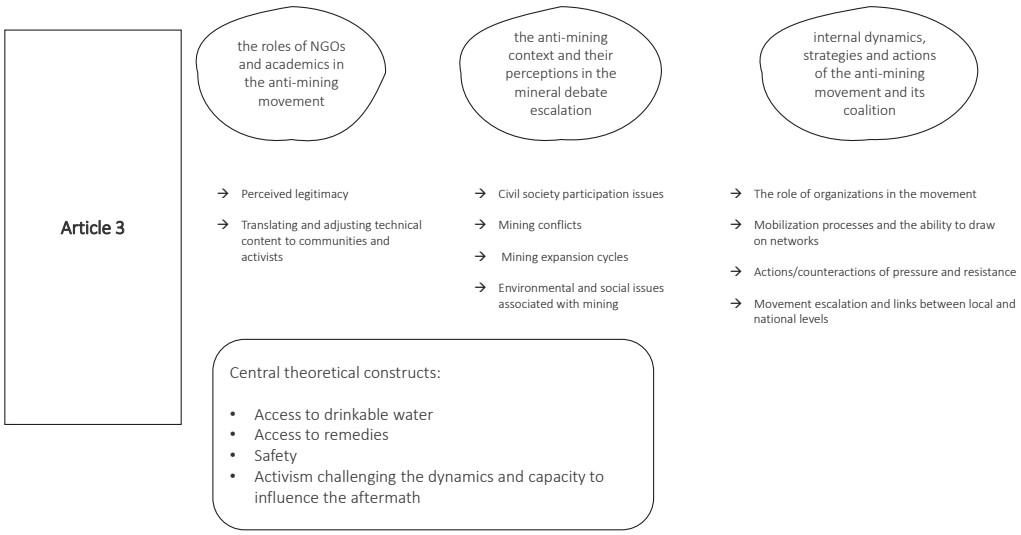

Figure 9. Central theoretical constructs from the interview analysis.

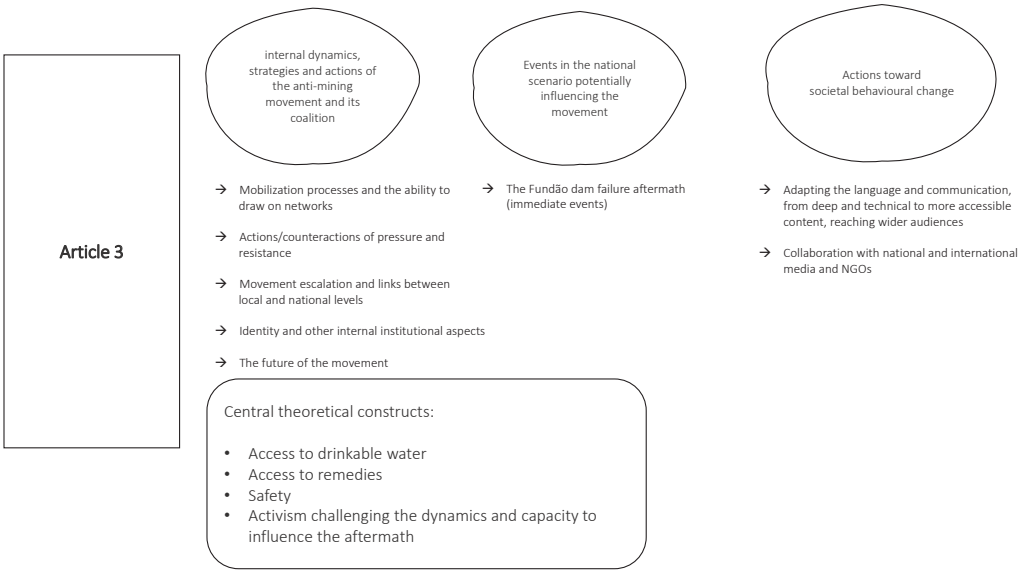

Figure 10. Central theoretical constructs from the document analysis.

Table 4. Summary of results: central constructs, their relationships and associations with the research questions and cases.

	Results		
Research question (RQ) associated	**Central constructs**	**Central relationships among constructs**	**Logics of the phenomenon and case associated**
How was anti-mining activism established in the Brazilian context during the 2013-2017 period? (RQ1)	The historical context of land struggle and activism in rural areas	Anti-mining activism as a legacy from previous movements	Draft bill case
	Who takes part in the anti-mining movement	Anti-mining activism in academia and NGOs	
What kind of anti-mining activism strategies and actions took place as a response to events connected to mining that happened in Brazil from 2013 to 2017? (RQ2)	Recognition of rights, distributional concerns, and participation claims	Mistrust Power imbalance Land/rural struggle Extreme risks and uncertainties Interpretation and construction of the reality Truth disputes	Draft bill case
	Dynamics of power in the consensus-building process		
	Access to drinkable water		Fundão dam case
	Access to remedies		
	Safety		
How should the anti-mining influence on the mining sector be interpreted given the current Brazilian societal context? (RQ3)	Strategies regarding social inequality and alternatives to mining	The efficacy of mobilization and collective action Advancing environmental justice issues Shedding light on social and economic inequalities/ injustices	Draft bill case
	Activism challenging dynamics and capacity to influence the aftermath		Fundão dam case

4.1. THE CONTEXT: THE ORIGINS OF THE ANTI-MINING ACTIVISM (RQ1)

The historical context of land struggle and activism in rural areas (Articles 1,2,4)

The societal structure in a given context is constantly organizing and reorganizing itself, fighting for more justice, and defending territories (Rothman, 2008; Silva et al., 2014; Zagallo et al., 2015). In the 2000s, with the natural resources' exploration increasing in Brazil, environmental conflicts and land disputes also expanded (Bebbington, 2008; Zhouri, 2014; Svampa, 2019; Szwako and Machado, 2019). They emerged especially in rural areas where industrial activities such as logging, mining, and the construction of hydroelectric dams occurred. During the same period, the hatch of anti-mining activism was favored by the historical context and proximity of actors.

The intersections between rural conflicts and industrial activities in Brazil have historical roots. Land struggle usually follows different movements and resistance groups (see for instance, Rothman and Oliver, 1999; Mancano, 2000; Blanc, 2019). In **Article 1**, my research findings evidence how activists, infrastructure, and symbols from the Landless' Workers Movement (MST) are present in the anti-mining movement. At the national level, the anti-mining movement stems from the MST (**Article 1**, 40).

In particular, **Article 1** introduces the interlinkages between MST, the anti-dam movement, and finally the anti-mining movement. Illustrated by three periods of time, the results detail how mining resistance is linked to actors, targets, claims, and grievance mechanisms in resonance with previous rural and land struggles. The first period was the1970s and 1980s, which involved movements fighting for the right to have rights, characterized by strong ideological and political roots and criticism of capitalism. That was the context in which the MST was born. The second period, was the early 1990s, and the demand was for more propositional and rather than vindicating rights. This was the context in which the anti-dam movement was nationally and formally established. Finally, the third period—the late 1990s and early 2000s—was affected by international and global issues, and the outbreak of social movements coordinated by a network of actors. During this third

period, the anti-mining movement was nationally and formally established. However, before delving into the interconnections of these movements, in the following paragraphs I will provide some background information about the MST.

The MST is the icon of rural struggle in Brazil and one of the largest social movements in Latin America. The movement has the goal of land reform at its core and data shows it was born in the early 1980s together with other movements rooted in the criticism of capitalism. To understand the claims for agrarian reform back then and still nowadays, it is important to know that Brazil is historically one of the countries known for a high concentration of land ownership in the hands of a few people. At the same time, many small farmers live on lands for decades and through generations without, however, officially holding a title for it (Fernandes, 2000; Blanc, 2019). Some, still, consider themselves 'landless' and see land as "**the basis of their collective rights**" (Blanc, 2019, 11).

Thus, in the fight for collective land rights, one of the main tactics that the MST has adopted is the extralegal occupation of rural land combined with disruptive demonstrations (see, for instance, Morissawwa, 2001; Hammond and Rossi, 2013) in order to achieve settlement with the National Agrarian Reform Institute. In **Article 1** I demonstrate how the relationship between the industries conducting agriculture on a large scale and rural workers have been framed by land disputes and conflicts. From the activists' perspective they are not invading the land but retaking something that was stollen before by 'big' landowners. The land is the space where the Movement is organized, planned, and where it evolves. It is also symbolically used as means of interest and leverage during negotiations deadlocks (Fernandes, 2008). When such negotiations with the authorities lead to impasses, the situation is likely to escalate towards violent confrontation between the 'landless', the police force, and private militias.

Camping on or occupying the land consists of gathering families and individuals on a piece of given land and transforming the land. Schools, pharmacies, and kitchen gardens are built on the land, transforming it into a communal area for MST members to make a living. This stage is intended to

be long, leading to a permanence on the land after going through a settlement phase.

The mobilization of families and groups by means of land occupation happens through the process of consciousness building. By sharing their life experiences, struggles, confrontations, and victories, MST members exchange their perceptions of the rural workers and 'landless' realities and why it is necessary to join the fight with potential affiliates. For the movement, the agrarian issue is seen as a structural problem of capitalism, creating inequalities, evictions, exclusions, and ultimately destroying the peasantry (Fernandes, 2008). The logic for this perception and process of conscious building comes from practice and political training. The political training is deep rooted in Marxist ideology, with a strong posture against capitalism and an ideology which aims to develop a communalist project for Brazil by mobilizing a class struggle to achieve structural reforms (Fernandes, 2000; Morissawa, 2001; Fernandes 2008; Hammond and Rossi, 2013).

Since the beginning of MST activities, the movement has received the support of a wide and strong linked network, including institutions such as political parties, unions, and Catholic Church representatives, especially from the progressive part supporting liberation theology. These representatives have strengthened the spaces for political socialization, promoting the exchange of experiences and increasing the peasants' awareness to fight for land and Brazilian agrarian reform with the MST.

To illustrate how demands and actions from different movements have influenced each other, the following paragraphs will provide evidence on the MST, the anti-dam movement, and their interconnections. In social movement studies, the cross-influence of movements is called spillover. This topic has received the attention of scholars and empirical evidence on movement-movement influence is abundant and broadly based on collective identity and political process perspectives (Meyer and Whittier, 1994; Rojas and Heaney, 2008; Navrátil, 2010; Hadden, 2014; Funke, 2014; Terriquez, 2015). In other words, how activists from different movements collectively share identities and perspectives on political matters is a determinant of spillover theorizations.

Particularly within the Brazilian context, as discussed by the scholar Marcelo Rosa, the unique format of MST actions has been socialized and incorporated by leaders of other movements (Rosa, 2004; Rosa, 2007). These groups have benchmarked and adapted not only the MST way, but also MST symbols. These movements have also modeled themselves on MST's methods. Most of them are related to rural workers and landless people's struggles around issues of land. In that sense, when the anti-dam movement was sparked, the proximity, connection, and then the collaboration with MST leaders and members, was crucial to its development (Rosa, 2007; Scherer-Warren and Reis, 2008). This proximity is not only geographical but also and especially political-ideological. Both the MST and the anti-dam activists have discourses and actions which challenge the interest of powerful actors such as the state and the business sector while fighting for more participation and rights for the communities close to hydroelectric power dams. Given that hydropower dam projects need to resettle part of the nearby communities and flood those areas so that the construction and operation phases can take place, it is clear that the attachment to the land is also intrinsic to anti-dam activism.

Article 1 explains how the anti-mining movement has discourses and actions and could be traced back to MST and the anti-dam movement as well. By adding the anti-mining movement to the MST-anti-dam chain, the analysis revolves around evidence found concerning the anti-mining movement connected with previous struggles, and concurrently address particular challenges of the anti-mining movement. I will start by explaining the links of the anti-mining activism with the previous struggles.

Anti-mining activism's links to previous struggles are explicit, for example, in the activists' book The Elements of MAM. The acronym MAM stands for the original given name of the anti-mining movement: **The Movement towards Mining Communal Sovereignty**. The book is the first document produced by the activists and it contains a letter addressed to MST members arguing why it is necessary to advance into a social movement specifically focused on national sovereignty of mining in Brazil. Additionally, it expresses gratitude to supporters, among them the MST and the anti-dam movement together with partners such as unions and Church representatives who had been supporting the three movements over time.

As a strategy, the anti-mining members also developed a close relationship with mining researchers and NGOs. These partners have produced many books, scientific articles, and reports on the impacts of mining in Brazil. As discussed in Chapter 3, I am particularly interested in the knowledge and meaning produced by the activists (Milan, 2014) as evidence of how they interpret and frame realities (about knowledge produced through activists' interpretations of the reality, see, for example Benford and Hunt, 1992; Kane 1997).

In July 2015, the first volume of The Mineral Question in Brazil was released. It was clearly made mirroring MST's publication series The Agrarian Question in Brazil, a compendium of almost ten volumes showing the historical trajectory of the subject. The Mineral Question in Brazil includes the movement's historical calendar showing the mining struggles, their dates, and their relevance; the development of a mining dictionary for the purpose of educating members in mining-related terminology; and a popular songbook and a poetry book related to mining and also the development of the movement's flag. To consolidate their discourse about the negative impacts of mining activities, the activists produced films and documentaries. Such productions are displayed to local communities living nearby mining activities as a way to share and reinforce the anti-mining interpretation of mining impacts.

As for the challenges imposed particularly to the anti-mining movement, results indicate the formalization as a national movement like the MST and the anti-dam movement is their priority. To answer this challenge, the Movement needs to evolve its political training and ally its network to a larger context. As a result of efforts to enlarge the anti-mining network, the National Committee of Defense of Territories over Mining was created. The Committee works as a coalition incorporating a variety of different perspectives. Thus, I decided to refer to it in this doctoral thesis as the anti-mining Coalition. It unites different agendas for the transformation of the national mining framework and legislation. Their aim is to explain contradictions in the current national mining framework and the need to shift the debate from mining resistance to a positive, project-building discourse that encourages social debate around these issues.

The strategies and actions carried out by the anti-mining Coalition are discussed in **Article 2** and will be scrutinized in the sub-section *Activism as a response to events connected to mining*. The Coalition formation, though, will be explained in the following sub-section.

Who takes part in the anti-mining movement (Articles 1-4)

The question of who takes part in a given movement is important in order to understand how a collective effort is formed and this complements the understanding of the context. To not consider the existence of a movement as a datum (as given) implies the need to explain the processes in which individuals and groups make sense of their actions (Mellucci, 1995).

When the anti-mining movement in Brazil was established nationally, it happened concurrently with the National Committee of Defense of Territories over Mining, a coalition created to follow up and influence the discussion on the mining code draft in the Congress. The Coalition brought together different groups impacted by mining. **Table 5** summarizes the findings on the Coalition members divided into two groups: a class struggle-based group and a rights-based group.

Table 5. Groups taking part in the anti-mining Coalition.

Class struggle group	**Rights-based group**
Members are impacted by mining	Solidarity-based: members are sensitive to those impacted by mining activities
Marxist ideology—mostly stemming from political training	Marxist ideology—mostly coming from personal political/ideological orientation
"Radicalism" against capitalism/mining	More rational about the low power of members to fight effectively against capitalism
Belief in the "communal project" as an outcome of more environmental justice	Belief in procedural justice improvement to alleviate environmental injustice

Class struggle group	Rights-based group
Undergoing political training and then becoming active or carrying out new political training	Taking part as guest 'lecturer' in political training and not directly involved in 'dynamic organizing'
Active on building networks with other institutions as part of their duties as a militant/activist	Active in participating in network building when more legitimacy or technical knowledge is needed
Are not heard in public hearings and other forms of public participation	Make efforts to improve the participation level, by mobilizing local actors to attend public hearings and to translate/adapt technical information about mining projects
Not aware of their rights, the broader picture of the extractive industry or environmental rights/issues, nor development decisions in Brazil	Believe extractive industry is pushing indigenous peoples and rural communities away and corporate interests do not respect/care enough about those people
Suffer violence/rights violations and are not aware of it	Bring information and help (advocacy) to support locals fighting for their rights

Many of these actors were also present in earlier struggles (such as the MST) which were historically connected with actors fighting for justice on land issues, misrepresentation, and pushing for more participation in Brazil. I call these 'class struggle-based' actors given their Marxism and anti-capitalism ideology especially when organized under the MST, the anti-dam, or anti-mining movements. These inclinations and ideologies were discussed in the previous sub-section. These actors, therefore, include unionists, anti-mining activists, and also waged workers, peasant farmers, small-scale miners (**garimperos**), landless rural workers, and indigenous communities.

Connected to the class-struggle-based sub-group in the Coalition against mining, the results also evidenced another sub-group, what I called the 'rights-based' group (see Rios, 2000). As explained by Melucci (1995), people bond not because they share the same interests, but because by bonding people will have a greater sense of what they are doing. These actors are not directly fighting for their lands and issues of misrepresentation in decisions connected to the land. They are, however, in solidarity and emphatic understanding with

the class struggle-based group. They are academics and NGO activists, and also some Church representatives. These actors tend to be more rational about their low power to fight effectively against capitalism and trust the rights-based pathway (and not disrupted and radical displays of action) as means for change and land conflict resolution.

The approximation of academic and NGO activists to land and rural struggles was intensified in the 1990s (Gohn, 2008). The results of this approximation can be seen over the years, and in particular with the exchange of ideas and incorporation of new issues on the agenda of both class- and rights-based sides. More recently this brought to rural movements the incorporation of topics such as green/organic issues, feminism, LGBTQIA+, and intersectionality agenda, for example.

The closeness of academic and NGO activists to mining is also clear in the collaborations during the Fundão dam failure aftermath. Evidence shows how the human rights and green agenda was more strongly incorporated into anti-mining activism discourse, by the display of actions nationally and internationally (**Article 3**). This will be discussed further in the next section.

4.2. ACTIVISM AS A RESPONSE TO EVENTS CONNECTED TO MINING (RQ2)

This research is interested in finding out what types of actions and strategies activists used when targeting mining issues between 2013-2017 in Brazil. It consists of a critical examination of the context in which mining activities occur through activists' interpretations and their construction of meanings. Strategies and actions here refer to happenings involving planning activism and executing a repertoire of actions (Tarrow, 1993; Taylor and Van Dyke, 2004; Bartley and Child, 2014) as comeback for conflicting mining issues.

The response here refers to the kind of reactions prompted by activists due to some context caused or intensified by mining companies and/or the authorities (see Hanna et al., 2016). The recent mining events in Brazil gained rapid national (and sometimes global) attention and caused activist responses. Such responses are evidenced in the results of the two case

studies in this research: the public debate on the mining code draft bill and the Fundão dam failure aftermath.

Table 6 below illustrates how evidence and their interpretation helped to frame the activist activities against four dimensions: 1) **ideological drivers** enacted by the activists' mistrust in companies/the government and the belief there is a power imbalance between these actors and the activists/ local communities; 2) **context issues** strongly associated with land and rural struggles and the activists' perception of an extreme context of risk and uncertainty; 3) **strategies and tactics** displayed by the activists to interpret and create reality; 4) **actions** carried out by the activists to engage in truth disputes with powerful actors such as the Government and company representatives.

Table 6. Illustrations of four dimensions of activism.

Illustrations of four dimensions of activism		
Dimension	Draft Bill case (selected evidence + interpretation)	Fundão dam aftermath case (selected evidence + interpretation)
Ideological drivers: mistrust and power imbalance	**The Coalition unifies itself around a specific agenda – the new mining code discussion and the fact it [the draft bill] doesn't have one item that is even a little democratic. [The discussion] does not encompass any civil society actor. This is a draft bill which is very much inclined to [fulfill] the Federal Government interests. Thus, once the formal discussion starts, miners' interests emerge clearly via suggestions by congress representatives. These politicians are in part in the miners' payroll, including the draft bill comptroller.** Interviewee#4 The interviewee demonstrates a combination of mistrust in the Government and interpretation of power asymmetry in the draft bill discussions. **The 2030 National Mining Plan foresees an [exploration] expansion that is closely connected to the international scenario but not necessarily to the national need to explore more. (...) The main issue, which is preventing the draft bill from going forward to voting, is the State versus the market. The concession project proposes allowing the Government to decide which area**	**The neglect and manipulation of the environmental license process in order to favor economic interests does not simply occur in specific cases but are also followed by judicial proposals changing the environmental license's general polity. One example is PLS654/2015 that is now in the special commission for national development at the Senate. The project lowers the control and monitoring actions in the most complex infrastructure projects, bringing several innovative features such as the exclusion of affected people and stakeholders' direct participation into the environmental license process, shortening the environmental study performance period and the creation of an 'integrated environmental license'.** Vale de Lama report (Justica Global), p.12 (free translation) The report understands that public authorities favor economic interests over people and consequently does not agree or trust in decisions being discussed at the Senate. **The day 5th of November of 2015 will be remembered forever as another day on which**

	should be explored and when. That is slowing down the draft bill process. Right-wing politicians are pushing the debate towards the idea that companies need to have more autonomy. **And [giving more power to the State] adds bureaucracy to the process and will hamper Brazil from being internationally competitive. (...)** **We try (and unfortunately, we do not succeed much) to emerge in the debate to show that there is something more than what is being discussed. (...) Because even if the State has greater participation, as it has been discussed, which allows minimum participation to the civil society actors, it does not guarantee that the pace of extraction will be discussed.** Interviewee#6 The interviewee demonstrates how the most powerful actors are leading the draft bill discussion and the challenges to insert their agenda and interests in it.	**rampant profit has gained priority in place of people's lives. (...) The locals did not get any warning from the company and ran when they heard the dam bursting. They rushed to higher parts of the village. Several locals reported seeing people being taken by the flash flood. Houses, schools, electric power, roads—everything was destroyed. The locals were isolated and needed rescuing by helicopter.** Dossier Tragédia Anunciada (MAB, anti-dam movement) (free translation) The dossier reports the imbalance of the company putting profits before people's lives. **During a press conference, the Samarco CEO said the tailings residue was inert and not prejudicial to humans. This is not the opinion of those affected who had been inContact with the mud. Several reported dizziness, headaches, and throat aches. Volunteers remediating the victims also reported that those affected had symptoms of intoxication such as: dizziness, nausea, headaches, and mental confusion.** Dossier Tragédia Anunciada (MAB, anti-dam movement) (free translation) The dossier displays mistrust in the information coming from corporate executives

Context issues: land and rural struggles; extreme risks and un-certainties	**Since 2010 there is a mining project planning to build a pipeline here in the region. It crosses 22 municipalities, this one included. When the [operation] license process started in 2011, some families alongside the pipeline pathway became discontent. Then Vía Campesina and the anti-dam movement together with a few rural unions organized a meeting to discuss the issue and try to build up a resistance front. That developed into a campaign against the [mining company name] pipeline. Communal organizations, churches, unions, a few politicians, and the local student movement were mobilized attempting to prevent the pipeline pathway crossing the region. The resistance was stronger here. The local public authorities actually managed to say 'no' to the pipeline. But at the State level, the authorities still don't understand what kind message is coming from the communities—the ones who are actually feeling the project development in their skin.** Interviewee#5 The interviewee illustrates how some rural landowners are not in favor of mining projects and thus mobilized themselves with the support of multi-level organizations to build up a resistance front. **The State says: mining is strategic, it is on our 2030 mineral plans and we need to sell it all, put everything on the stock market. This calls for a new concept: to 'disengage' or to remove.**	**The fear of a new dam failure in Mariana seems to persist amongst locals. The miner Samarco admitted this Tuesday that Germano and Santarém dams, closely located to Fundão which burst 12 days ago, have safety levels lower than recommended and are at risk of failing as well. According to the company, these two dams are currently going through urgent repair processes.** Mendonca, El País Brasil (national newspaper/media). (free translation) The news article highlights new risks of dam failure and the fact that locals are scared by the uncertainty of how safe the area is. **Samarco refused to sign a remedy and indemnification agreement for the Mariana victims. This has led the state prosecutor's office to open a case in the Justice Department against the company and its controllers.** Folha de São Paulo (national newspaper/media) The news article shows how the miner's attitude does not ease the access to remedies and amelioration of living conditions for the victims. The State had to interfere in order to push for the victims' guarantees and rights to be established. **Locals are reporting long queues and turmoil to get drinkable water in Colatina. (...) Several residents had to go back home with empty hands.**

	Where the communities are more organized new land is granted. The company will negotiate the indemnifications based on the time people have lived on the former land. However, where the communities are not organized and do not have enough information [about the 'disengaging' process], corporate employees use their power to repress [these communities] with their militia. They take out these rural workers by force without any consequences to themselves. Interviewee#3 The interviewee frames the State's strategy to be market inclined and combines it with complaints about corporations making use of violence to solve the land struggle. **It is challenging to put oneself in the shoes of others. One can see only that someone will be reallocated from one land to another, but then again, they cannot understand the suffering involved for the person who will be reallocated. There are cases in which [the reallocated people] ended up losing everything they are, you know? [cries a bit] It's all very sad. You see people struggling and it is hard to understand how professionals involved with mining activities are not being sensitive about it. People die, there's plenty of cases. An old man died, the family went to his funeral only to get back at home and find the police waiting for them to be removed [from**	A Gazeta (local newspaper/media) Shows how unsafe and unreliable the remedy actions were at the local level.

	their land]. (...) There is another case. The land was sold to [the mining company name] by a third party and now an old lady is being accused of invading the [mining company name] ... When it went to the judge in the capital city, he goes: 'well, let's expel the old lady, then!' You know? (...) It is all about lack of human rights, lack of a sense of humanity! Interviewee#1 The interviewee understands land struggle as a process with risks and uncertainties to the rural communities. This is framed together with displays of power and information asymmetry. **I have a former student who works with environmental affairs and her family lives nearby mining operations in a rural area. Three years ago, she wrote me an e-mail telling the story of some random people walking around the municipality, checking all the land ownership information because of a mining project plan. They've asked the girl's parents to hand over their land ownership documents, and even said that those who refuse to hand them over would lose their lands. Those who handed their documents over got some amount of compensation but had to fill in a form right away. Those who were not capable of filling in the form would also lose their lands. Meaning, these are common strategies taken by mining companies. Therefore, there is a**	

	land conflict because people realize they will lose their lands and will need to receive some sort of compensation, will need to negotiate it, and that will be hard... (...) many times after being reallocated these communities are not capable of reproducing their lifestyle anymore, due to the very same mining impacts. The traffic of trucks, the amount of dust in the air... Kids start to develop allergies, water gets contaminated... (...) Some people will hand over their lands because they simply cannot live there anymore. Interviewee#2 The interviewee considers corporate strategies to be a risk to the local communities when it comes to land negotiations and resettlement plans.	
Strategies & Tactics: interpretation of reality; construction of reality	**The movements' strategy is thus to mobilize communities affected by mining, and intensively create networks with organizations and institutions to pressure the Government. Pushing the State to understand these kind of projects do not apply to the Brazilian people. They have to stop. Some simply are not viable.** Interviewee#5 The movement disagrees with the Government practices towards mining exploration and decides to act on it by mobilizing communities around mining projects to make complaints and establish resistance to such projects	**I believe we had a huge shock with Mariana. First because we [previously] decided to act and fight for the draft bill (...) and the coalition would then have a limited existence period. It wouldn't be a movement for good. Then, with the Mariana tragedy (...) we saw what we have built and [I decided to] post on the coalition's social media: 'I need information. Here is my phone number, call me—I need to know what is going on'. And the press also wanted to know. In about 20 minutes I joined 23 WhatsApp groups. I had pictures and videos of everything. We were the ones who sent everything that came out to the press in the first instances.** Interviewee#11

	Together with the draft bill discussions come the resistance efforts. This is a relevant point, people are resisting. People are not capable of putting their agenda forward and taking the offensive. But they are actively resisting at the national level and in parallel in the local context, with anti-mining campaigns. Interviewee#6 The movement is not capable of being more offensive or successful with their propositions, but activists are adding pressure at the national and international levels with anti-mining and resistance campaigns. **The challenges we face nowadays in the National Congress are due to the whole conjecture, right? The right wing [politicians] stepping forward, very conservative thinking, and the challenge to insert the topic [coalition's view on mining] inside Brazilian society. Because the discourse that is currently being used is the one of jobs generation, the lack of tax collection from the State. Thus, if one goes to talk about it [the coalition's view on mining] with the legislative power, it is very difficult to find a congressperson willing to take the cause on. The [National Congress] arrangement changes completely in 2014. The main ones who used to support us were not reelected or ended up not in the draft bill commission anymore. We don't have a congressman at the moment who truly embraces**	The interviewee talks about the immediate strategy used by the Coalition when the Fundão dam burst. Not only the did the activists get in touch with local communities in the disaster site, but also fed the press with information and materials made by the victims. This strategy puts into practice the objective of inserting themselves into the debate and shaping the overall mining discourse in Brazil. **Then we created a logic of understanding [the dam failure]. We got some funding and thought we also needed to go there [to the disaster site] and provide remedies to the people. When we got there, we realized we did not have the right background. We couldn't do anything in this sense. The ones who got there and did tremendous relief work were MAB [anti-dam movement]. They had already this sort of experience with dam failure and all. (...) We had people on site to collect information and I was very busy. The press came from all over the world, arrived at the disaster site, there was no accommodation anymore, I had to call to the local priest and ask him to host journalists. Journalists came who didn't speak Portuguese, so I had to find someone to assist them with translation. My life was pure madness, but then we understood we had a very clear role in being a source to the press. Especially to the international press. And that is when we started to realize we needed to make our complaints at the international level.** Interviewee#11

	the issues we would like to include in the draft bill. Interviewee#10 Activists interpret the national politics scenario as tending to be more conservative and pro-mining. Hence, the anti-mining campaigns are failing to be echoed at the Congress. **We need to transform the local struggles into national ones, focused on mining. But above all we need to create moments in the national struggle so that we can limit the corporate power and the mineral capital, but also spark transformations in Brazilian law. That is the role and historical task for the national anti-mining movement. (...) We are not a movement for one decade, but we can be a movement for several decades, till we can politicize mining issues in society, impose limits on the capital logic, impose limits to laws that allow this fast-forwarding plunder, and above all, build alternatives to mining.** Interviewee#3 The activists plan to grow at the national level aiming at becoming more offensive towards mining companies and to become stronger players in mining discussions, able not only to set rules for companies but also to influence mining national legislation.	The activists advanced the initial strategy not only by having members in the disaster site but especially by being a source for the international press. The Coalition then started to influence and shape discourses also at the international level.

Implementation of actions: truth disputes	**The draft bill discussions started with an 'emergency stamp', fast-forwarding the discussion stage to also speed up the voting process. The emergency feature fell partly due to popular pressure and corporate pressure. The coalition reacted by mobilizing locals in different regions and showing the draft bill commission that there was the need to listen to these actors. Public hearings were thus organized in states where mining exploration was happening. (...) One coalition member was supposed to sit at the table in each public hearing, but it demanded a huge effort from us to guarantee that this agreement would be put into practice. (...) At many times, when the public hearing organizers were trying to prevent the coalition members to sit at the table, the activists had to put pressure by shouting and booing so that the organizers would then follow what was previously agreed. (...) And we won. In the discourse we won. All pro-mining congresspersons and other industry representatives left the meetings. Once they know they will lose, they leave. That was an important moment.** Interviewee#6 To follow their agenda and advance their plans, the activists engage in clashes with more powerful actors, such as industry representatives and public authorities. These disputes revolve between extremes ('right' or 'wrong'; 'winner' or 'loser') and the outcome of such disputes is open to interpretation—or even further dispute.	**We held a meeting in December, in Mariana, a bit more than a month after the tragedy. We gave priority to bringing people from other regions and lived closer to the tailings dam because they could [in the future] face a similar situation to the Mariana case. There we dropped the focus in the draft bill. It was too small, and the draft bill alone would not be able to solve anything. Because we could never insert all the safeguards we needed. (...) We understood we needed to go beyond, we needed to debate the mineral patterns [in Brazil], and we needed to bring this debate to regional levels. The coalition could not only be at the national level.** Interviewee#11 Following their strategies, activists started also to implement actions aiming to influence the local and regional levels, to shape and spread their discourse about mining and its consequences for communities living by mining sites across the country. **Because we have three roles in the mining history: to mobilize politically speaking and insert [ourselves] in Congress, and (...)political training, especially [carried out by] the social movement. A guy is not fighting alone against mining in a small city in Minas Gerais, he is together with all of us, he has the same knowledge level. The third point is the communication. We understood we needed to discuss the pattern of mining. (...) And if we**

	We saw the relevance of several different actors, from different sectors, to understand the need to slow down the draft bill debate. (...) Back then we decided it was time to build up a coalition with political power to influence the discussion. (...) In May we launched the coalition at the national bar association headquarters. We were 72 organizations by then. A fusion was made. It was not easy to shape unity with so many organizations, each one with their own agenda. Interviewee#10 The activists perceived the need to unite different organizations under the same understanding to fight for some space in the draft bill discussion. The process of creating a coalition encompassed several negotiations and constant shaping and realignment of objectives and discourses.	**want to discuss it, we cannot discuss it among ourselves, among the ones fighting against mining, being affected by mining [operations]. If we want to discuss the pattern of mining, we need then to discuss with the whole civil society. Thus, we got the funding and made an exhibition a priori only about Mariana, but we created cool things so that people could understand it—the hydraulic system in Mariana before the dam failure, at the time of the failure and so on. Then, several schools visited the exhibition and we needed to get someone to teach these visitors. It was very interesting to see that it is not that the society is not worried about mining, society does not know what happens in the mining [industry]. (...) After the first exhibition, it travelled to several cities impacted by mining. We understood and we discuss mining in a very deep and technical way. People are interested once you can be simple about it. Then we created informal talks, movies exhibitions, public lectures, mailing lists...** Interviewee#11 The activist explains how the movement is putting their actions into practice and pushing forward their discourse and ideas inside Congress, to people affected by mining, but also to the wider civil society by adapting the language and format of how they share information and knowledge about mining and its consequences.

The following sub-sections will illustrate how the activists' strategies and actions worked as responses in the selected cases of the mining draft bill and the Fundão dam failure aftermath. It will help to understand the anti-mining movement as a phenomenon which was highly episodic and infrequent (until then) (Eisenhardt and Graebner, 2007).

The public debate on the mining code draft bill (Articles 1-2)

The public debate on the mining code draft bill (PL5.807/2013) took place in the Brazilian National Congress in 2013 and was approved by a provisional decree (MP790/2017) in 2017. It was started as a way to update the original mining framework, a law decree dated from 1967. During the course of the draft bill discussions, several rounds of meetings and consultations took place in the Congress. **Table 3** in Chapter 3 illustrated the main meetings and happenings during the discussions.

One of the MP790/2017 provisional decree's main changes was the substitution of the former National Department of Mineral Production, a federal level autarchy, by a new regulatory agency, the National Mining Agency. In addition, a taxation on mineral activities was instituted, together with the mine owners' obligation to ensure that areas environmentally damaged by mining impacts would recover, to instigate mine closure plans and follow the national policy on dam safety. Finally, the provisional measure also changed some taxation rules on mineral royalties. The industry considered that the changes advanced, and interlinked matters associated with mineral and environmental laws (FIESP, 2017).

The anti-mining activists, on the other hand, responded to the draft bill installment by creating a coalition and training activists to be active during the draft bill discussions. The findings of this thesis indicate that these actions were envisaged in three strategies. First, the activists vocalized opposition and misrecognition of local communities in mining discussions and decisions (see Urkidi and Walter, 2011). Second, they brought up the sentiment of plunder and historical struggle associated with mining activities (see Mollet, 2016; Conde, 2016). This in other words involved the idea that national decisions about mining development had contributed to taking away natural resources

in a severe and immoral way. Finally, the activists proposed alternative ways to carry on mining (see Escobar, 2010; Urkidi 2010; Hollender, 2015), expressed in seven social and environmental safeguards suggested by the activists.

Efforts to vocalize the opposition and misrecognition of communities were interpreted through an environmental justice perspective on recognition rights and participatory claims. The environmental justice approach encompasses procedural, distributive, and recognition perspectives (Schlosberg 2004; Urkidi and Walter, 2011), and is often considered a response to perceived injustice of marginalized social groups (Walker and Bulkeley, 2006).

The absence of recognition of local communities' rights, including their right to participation in decision making in accordance with the rule of law, was especially evident in connection with the granting of environmental licenses for mining operations. The results show the strategy of targeting the draft bill installment was driven by two assumptions. First, the activists assumed the draft bill special commission had a very pro-mining inclination. Then, they speculated on how this inclination would facilitate mining expansion without properly controlling and monitoring the granting of licenses. They were worried especially with respect to social and environmental justice and safeguards.

The interviewees reported how communities were not being heard and, concurrently, locals had a limited capacity to absorb and comment on technical information about extractive projects. Thus, according to the activists, local resistance was barely echoed at all in local politics or environmental agencies in charge of the licensing processes. Interviewee #1, for example, indicated the lack of participation and effective resistance to projects was in the end due to the public hearing inefficiency. During an environmental license process, such hearings would be incapable of preventing mining projects from going ahead and, in turn, grant licenses to projects clearly impacting **quilombola** (former slaves) communities, agrarian reform, and indigenous peoples' lands.

Anti-mining activists also attempted to push local struggles into national-level discussions. By leveraging the struggle, as Interviewee#3 explained, that on the one hand the Coalition aimed to find ways to influence and provoke changes in the Brazilian State law. On the other hand, the strategy was to slowly make mining a policy an issue in society. Activists believed the mining

issues were not much discussed in Brazil, whether by locals or by civil society in general.

The idea of generating more opportunities and giving room to discussions about the mining industry and its impacts was associated with the activists' second strategy. By bringing up the sentiment of plunder and historical struggles associated with mining, the Coalition wanted to "**impose limits to the capital logic, impose limits to the laws that would allow this plunder and spoliation in such an accelerated way**" (Interviewee #4). The claim of slowing down the rapid expansion of the mining industry and reversing the 'plunder' sentiment is common among Latin American activists and their reasons for joining a resistance movement (Urkidi and Walter, 2011).

Interviewee#4 suggested the Coalition perceives the current Brazilian development agenda to be gradually eliminating rural communities without consulting whether these communities wish to have their lives transformed in such a way. In their opinion, if mining generates jobs, it also means, at the same time wiping out the existing rural workers' jobs. Interviewee#3 complements this line of thinking with the following:

> **In the last ten years there has been a change in the actors who are pushing rural communities off their lands. It is miners who are becoming the main actors. The main terms they are using are: Indians are seen as backward and if this [branch of] humankind disappears, it makes no difference at all; the overall objective of a society like Brazil is to modernize, and it has to be above the individual interests of indigenous people, and radical environmentalists.** (Interviewee #3).

To defeat this issue, activists promoted political training in local communities impacted by mining. By holding meetings and exchanging experiences, the activists stated that they could find common frames, promote, and scale-up their actions (see Urkidi, 2011). These training sessions teach potential new members about historical struggle associated with mining, land, and rural struggles, and frame the logic of capitalism at the epicenter of the matter.

Finally, a data analysis from the interviews and internal documents from the anti-mining movement and Coalition illuminated the third strategy of the Coalition, which is illustrated by the seven environmental and social safeguards they have proposed for inclusion in the new mining code:

- Democracy and transparency safeguards in policy creation and implementation;
- Ensure the right to consultation, consent, and veto power of local communities;
- Respect of democratically predefined exploration rates and frequency;
- Delimitation of (and compliance with) areas free of mining activities;
- Enforce environmental damage controls and mining closure plans with contingency measures;
- Respect and protect workers' rights;
- All mineral extraction on indigenous peoples' lands to be subject to the ILO 169 Convention and the national Indigenous Peoples Statute, respecting the rights to consultation, consent, and veto power of those peoples.

To get into this final format, the Coalition had to go through a long process of consensus building (**Article 2**, p.7). The process of working together within the Coalition involved intergroup learning about oppression structures from different perspectives. As illustrated in **Table 5**, not only oppressed people take part in the Coalition. It also includes an 'elite' or privileged sub-group comprising academics, NGO members and Church representatives. This sub-group has a rights-based perspective (see Rios 2000) and observe mining conflicts through a more theoretical lens. Since they are not directly impacted by mining activities, Interviewee#1 suggested that their motivation relies on solidarity with local communities' struggles in recognizing the great power imbalance present in those conflicts and disputes.

The other sub-group, comprising those directly impacted by mining, include unionists, peasant farmers, small-scale miners, rural landless workers, militants, and indigenous communities. The relationship between these sub-groups is marked by internal conflicts and disagreements that are temporarily put aside in order to pursue the Coalition's objectives. Like

any other network, some members participate dynamically while others are only loosely connected to the Coalition. As active participants, the Coalition steering committee is responsible for making central decisions. These decisions are taken without consulting all of the Coalition participants, including the majority of those directly affected by mining. The same logic applies to deciding who can speak or represent the Coalition at meetings, interviews, and other 'official' engagements. As an interviewee put it, "**Let us say that there are certain elements and important actors who are deliberately not consulted to avoid any internal splits in the coalition**" (Interviewee#1).

Many participants are, thus, unable to speak in the name of the Coalition due to the risk of stirring discord. This leaves the main Coalition discourse to be forged and conducted by the steering committee. The committee does so by making Coalition decisions on strategies and actions together with representatives from both sub-groups.

Although the steering committee is viewed as a front of consensus by the Coalition members, as inferred in **Article 2**, by making decisions and drawing strategies without consulting all members, the Coalition also face the risk of reinforcing the same kind of privileged versus oppressed dynamics that they condemn. Aiming to change the way mining is carried out, the Coalition has overstepped in balancing oppression and privilege (**Article 2**, p.8). That is, the more powerful actors are leveraging their privilege to gain ground and credibility inside the Coalition while others are not having their position taken into consideration at all. In struggling to challenge the existing power structure, the Coalition has, however, itself reproduced a similar power imbalance to that which it strives to criticize. This risk is inherent in any anti-capitalist movement (Doyle, 2005), in which the majority of activists identify themselves with Marxist ideology.

The Fundão dam aftermath (Article 3)

On November 5, 2015, in the historical Brazilian city of Mariana, Minas Gerais state, the Fundão tailings dam burst. A tailings dam consists of a storage structure for the byproducts of mining exploration. When this structure

fails, a mixture of water and byproducts are released in the environment. This mixture, when invading the cities and the environment, has been often described as a 'sea of mud' by lay people; the technical word for it is slurry. In the Fundão case, approximately 40M.m3 of iron ore tailings were released into the environment, reaching the Doce River and finally the Atlantic Ocean. It has polluted over 600 km of watercourses. Nineteen people were killed. Fauna (especially fish and other aquatic creatures) and flora were damaged, and it is difficult to estimate how many years it will take for these to recover. The Fundão dam failure has been considered the worst environmental disaster that has ever happened in Brazil. The panel that investigated the reasons why the dam failed concluded it was a consequence of a chain of events and conditions. The chain of events is described by the panel as follows:

> **A change in design brought about an increase in saturation which introduced the potential for liquefaction. As a result of various developments, soft slimes encroached into unintended areas on the left abutment of the dam and the embankment alignment was set back from its originally-planned location. As a result of this setback, slimes existed beneath the embankment and were subjected to the loading its raising imposed. This initiated a mechanism of extrusion of the slimes and pulling apart of the sands as the embankment height increased. With only a small additional increment of loading produced by the earthquakes, the triggering of liquefaction was accelerated and the flow slide initiated** (Morgenstern et al., 2016, iii).

The Fundão tailings dam is part of an iron ore mine pit that is operated by Samarco. Their shareholders are Vale and BHP Billiton. Samarco has been operating since 1977 in Brazil, essentially as an exporter of iron ore pellets. Minas Gerais is a state that is historically connected to mineral extraction, being responsible for more than 40% of all national mineral production (DNPM, 2015). Espírito Santo state has been the main door for the export of minerals extracted in Minas Gerais. Along the slurry trajectory, several communities, especially in Espírito Santo, had no experience or previous

contact with mining companies or their activities. These communities were impacted by the effects of the extractive industry disaster without being considered by the company or the state as potential impacted areas if a disaster like this were to happen.

The **Article 3** investigates the activists' responses to the Fundão dam failure aftermath in 2015. Such responses are organized here in terms of evidence on a) multi-level activism (see Urkidi, 2011); b) online and offline wave of protests (see Hanna et al., 2016); and c) activism targeting politicians (see Arce, 2016).

The Fundão dam failure aftermath is an appropriate case to illustrate how a local mining disaster quickly escalated to national and global levels. In the Fundão dam case, the data analysis indicates the first UN position came from a special rapporteur on human rights who said, "**the government and companies should be doing everything within their power to prevent further harm, including exposure to heavy metals and other toxic chemicals**" (UNOHCHR, 2015). The national and international media spread the news, saying that UN specialists confirmed the mud was toxic. Given the multi-level exposure, Samarco issued an official statement in response declaring the company respected the UN right to freedom of speech, and reinforced that the tailings did present harm to human health. Usually, the UN positions itself as a defender of human and environmental rights when mining activities have resulted in harm to people and the environment.

At the national level, based on an analysis made after recreating a historical timeline of the aftermath, **Article 3** shows that one of the first efforts orchestrated by activists were the responses on whether the slurry was toxic or not. Conflicting information about the toxicity levels produced by government authorities and the companies involved in the disaster gained national attention via media and led to increased insecurity at local levels regarding whether the water was safe for consumption. As an outcome, several academics decided to visit the disaster site and local communities along the river to collect water samples and provide an independent analysis of the water quality. Independent analysis made by scientific teams from the University of Brasilia and São Carlos Federal University, in São Paulo obtained results indicating high levels of arsenic, manganese, and lead. These

two universities are part of the Environmental Impact Analysis Independent Group formed to assess the impacts of Fundão dam failure. Environmental risks and threats are heavily contested and disputed by different actors nowadays (Carolan & Bell, 2003; Wakefield et al., 2006). The lack of reliable information usually sparks discontent in communities impacted by a disaster (Mitchell, 1996). Local communities living near the dam and along the Doce River had the right to timely access to resources needed to guarantee their safety and integrity (Graetz & Franks, 2013; Ruggie, 2011)—and such rights were not given.

Activists from several parts of Brazil have travelled to the disaster site in order to frame the dam failure as an 'announced tragedy'. Evidence points to the fact that the disaster was preventable (in their perspective), and hence anti-mining activists started producing materials about the disaster to clearly state their view on its impacts at the local level.

Likewise, the activists' responses were multi-level and focused on fighting for more justice for the disaster's victims. For example, they informed the national and international press with information about the victims collected at the disaster site. In many disaster cases, the victims are not able to get the justice they deserve, or compensation comes after a very long negotiation process (see Shrivastava, 1996). In Global South countries, victims have a structural position within society that puts them at a special disadvantage and makes access to instruments of justice or political power much less likely (see Shrivastava, 1996).

Article 3 shows that as a result of invitations coming from social movements and NGOs, the UN has positioned itself again on the case and had a group visit the disaster site. The UN special rapporteur on human rights to safe drinking water and sanitation Léo Heller asked the Brazilian Government to guarantee not only the coordinated access to water and other remedies for the victims, but also access to information. Léo Heller also commented that some of the water analysis results indicated the presence of heavy metals beyond acceptable levels. Human rights activists have also put efforts into the disaster aftermath. This can be illustrated by a document introduced by the Brazilian delegation during the 158th session at the Inter-American Commission on Human Rights, linking the case to highlight that

communities in Brazil tend to accept mining activities because of poverty and social inequality. Additionally, on the 19th of November 2015, Greenpeace and GetUp activists called for justice for the Fundão dam victims in Perth, Australia. The protest happened outside the building where a BHP Billiton shareholder annual meeting was happening. The Greenpeace activist Nikola Casule questioned the BHP board during the meeting about the reasons why Samarco had continued its operations even though they knew about the failure risks.

Activists carried out waves of protests online and offline. Online, on social media platforms such as Twitter, Instagram and Facebook hashtags, ad-busts, and avatars connected to the disaster and blaming the mining companies involved were growing. Offline, several other actions took place on the streets, and in front of the company's headquarters in Rio de Janeiro and in Vitória. These 'real-life' actions involved chants, signs, and banners reproducing some of the online images and hashtags. Some violence, building depredation, and mud throwing on the company's buildings were registered by the local media in Vitória. One symbol that integrated online and offline protests, was the use of banners and hashtags to say that what happened 'was not an accident'. **Figure 11** illustrates how it was used in protests and **Figure 12** shows how it was displayed online. Contentious actions and framing processes are common in such circumstances. Activist dynamics include interpreting and constructing reality via challenging other frames and by creating new ones (Benford and Snow, 2000).

Figure 11. Protest in Vitória, Espirito Santo, November 2015. Photographer: Brunella Franca.

Figure 12. Ad-busts used for activists online.

As introduced in **Article 3**, supported by the analysis of a recreated historical timeline of the aftermath, local communities also mobilized and protested as the slurry reached their homelands. Communities along the riverside and the ocean tried to organize themselves to alleviate the impact of mud on the water and also to complain about the companies' behavior in the aftermath of the disaster. The local media showed banners and signs from fishermen, indigenous tribes blocked the railway where Vale transports its iron ore, and the mayor of Baixo Guandú also blocked the railway to get the companies' attention and negotiate access to drinkable water.

Samarco's CSR program concerned the directly impacted areas where underground pipelines were built to transport the iron ore pellets from the mine to the port. According to the Samarco's Forth Pellet Plant Project this comprised the municipalities of Anchieta, Ubu, Piúma, Guarapari, Mariana, Ouro Preto, Catas Altas, and Santa Bárbara. Because of that, when the slurry reached the Doce river course, some of the communities along the riverside and coastal area (such as Governador Valadares, Aimorés, Baixo Guandú, Colatina, Linhares) were not part of corporate social responsibility and company-community relations programs and efforts. Thus, those victims were out of the boundary of what companies usually call the 'area of influence' or 'mapped stakeholders' and had little knowledge about the mining operation and the company itself.

As introduced in **Article 3** and supported by the analysis of the historical timeline of the aftermath, together with the wave of protests the national and international media started to also cover topics connected to the imbalance of power between the victims and the companies during the aftermath. This can be evidenced when Mariana's prosecutor said in an interview to the Estado de Minas newspaper on 13th of December of 2015 that the government authorities at the national level had taken no effective measures on the matter and he felt he was fighting alone against the economic power of large mining companies. The national and local media also reported Samarco's refusal to sign an agreement to ensure urgent support for the victims, and when the company suspended water distribution in some cities, even with all the chaos and suspicion surrounding the issue.

The anti-mining activists and their strong political interests in the mineral debate took advantage of the buzz to denounce close collaborations between the mining industry and politicians. An article was made public on the BBC Brasil on 7th of December of 2015 to denounce the mining draft bill document being edited from computers inside a firm of lawyers representing Vale and BHP. Besides that, and a bit earlier, on the 14th of November of 2015, the UOL online platform published an article highlighting the fact that some of the politicians responsible for assessing the consequences of the Fundão dam failure had received R$ 2.6 mi from Vale during the past election campaign. The article continued by saying that Vale had donated a total of R$ 80 million in the period, benefitting three president candidates, 18 governor candidates, 19 senate candidates, 261 federal congresspersons and 599 parliamentarians at the state level.

This evidence touched upon potential cases of bribery, uncovering a powerful structure involving alliances between mining stakeholders and local and national levels politicians that was also presented in the data collected during the interviews with the anti-mining activists.

The next section will discuss and detail the contributions of activism to mining in terms of efficacy of mobilization and collective action; advancing environmental issues; and shedding light on social and economic inequalities.

4.3. HOW ACTIVISM INFLUENCES THE MINING INDUSTRY (RQ3)

This subsection aims to interpret the influence of activism in supporting or advancing matters of relevance to mining and society topics, which is especially salient in the societal context of Brazil. It starts by discussing the anti-mining success at mobilizing members and taking collective action. Then, it points out how anti-mining activism has advanced environmental justice issues. Finally, some inferences are drawn in terms of how the anti-mining activism has shed light on social and economic inequalities.

The efficacy of mobilization and collective action (Articles 1-3)

Social movement outcomes usually have to be analyzed by looking at long periods back in time and it has been a challenge to measure a given movement's effectiveness (Taylor & Dyke, 2004). This doctoral thesis analyzed the draft bill case actions that took place in 2013 and 2014 during April-July 2015 and then the Fundão dam aftermath that took place initially in late 2015 and in 2016 in February-April 2017. The influence of activism on mining will hence be here analyzed in terms of the efficacy of the mobilization and collective actions as part of the anti-mining movement outcomes (see categorization of movement outcomes suggested by Staggenborg, 1995).

The success of the anti-mining movement in mobilizing members and carrying out collective action can be inferred based on the following. First, the movement has learned the modus operandi of previous struggles and carries out actions displaying similar features, such as political training in territories affected by mining activities (as introduced in the **Article 1**). Second, the fact that activists are building capacity at the local level is gradually generating members who are skillful in the anti-mining discourse, leveraging the understandings of mining developments and its impacts in Brazil. During the first period of data collection, only two training courses happened. However, the interviewees recurrently mentioned that the political training was a priority issue on their agenda and the plan was to do as much as they could at the local, regional, and national levels. In the second period of data collection, the activists reported that at the beginning of 2017 a 45-day course has been given with youth as the main audience. From the anti-mining movement website, it was possible to retrieve information showing that in 2017 from May to November 100 municipalities have received political training. The activists have produced a preparatory booklet for those taking the training course and it is available for download from their website.

The mobilization achievement has also made it possible for some activists to represent the movement nationally during the mining code draft debates (as introduced in the **Article 2**). The results of this study demonstrate how the activists interpreted their consensus-building dynamics to be a positive result of the anti-mining movement. By putting together several different kinds

of actors and creating consensus directives around the mining code draft, several other actions were made possible. According to Inteviewee#1 and Interviewee#4, by having academic and NGO activists in mineral debates and discussions, the anti-mining movements gained more legitimacy and build a better rhetoric. The framing of participation in the anti-mining movement was illustrated in **Table 5** earlier in this chapter and is also part of the results presented in **Article 2**.

Finally, the impact of the mobilization and collective actions can be evidenced in conflictual mining situations, such as the Fundão dam disaster aftermath. This orchestration of collective actions is also present on smaller scales in local conflicts. Activists have carried out protests, produced reports and have established contact with media and international organizations. The slow response from companies and authorities opened up the window of opportunity for different political actors to join the arena in the aftermath, and this demands counter actions from companies to alter their courses of action. Academics, the national and international media, social movement activists, independent journalists, NGO members, and others have published a substantial amount of information on the disaster causes and consequences for the victims and the environment. This data was analyzed and discussed in detail in **Article 3**. By making these reports and articles available, the activists have provoked debate and incited further disputes. It is hard to grasp whether the activism affected the results in the aftermath, and if so, to what extent. However, it is clear that the activists have changed the political dynamics of the aftermath (**Article 3**, p.901). This was due to the activists' astuteness of finding the shortcomings of powerful actors and using them to put forward the goals of the anti-mining movement. Thus, the activists have acted on corporate performance gaps which have demanded counteractions from the companies (Hanna et al., 2016). These dynamics of action and reaction thus changed companies' strategies and courses of action during the aftermath. Such moments are illustrated, for instance, by evidencing the controversies of the presence of heavy metals in the Doce river (already discussed earlier in this chapter).

By creating alternative discourses or 'truths' around controversial or not yet fully investigated issues during the aftermath, the anti-mining activists

successfully joined the political arena influencing discussions and decisions, contesting and disputing trust and truths (see Carolan and Bell, 2003).

The influence of such actions is hard to be measure, but the results discussed earlier in this chapter infer that the activists have spread the word in several different discussions (online, debates, workshops, reports etc.) widening the overall knowledge of mining and its implications to their audience. The increase of knowledge and awareness about the mining industry has societal value in general, but in addition, social movement organizations have worked on capacity building in local communities living near mining operations or in the path of logistics operations by giving a voice to locals, mobilizing them at the local level and, to some extent, representing them when it was needed. It can be inferred that this mechanism also works to challenge and alter the dynamics of politics in the extractive industry by pushing and shaping the mineral debate. These knowledge-producing and meaning-making processes (Eyerman and Jaminson, 1991) are framed according to the anti-mining movement's agenda and are aligned with the ideology and core strategies of other movements such as the MST and the anti-dam movement (as discussed in **Article 1**).

The cross-influence of movements has become a focus point of social movement theory scholars and empirical evidence showing mutual influence of movements is abundant (see Meyer and Whittier, 1994; Rojas and Heaney, 2008; Navrátil, 2010; Hadden, 2014; Funke, 2014; Terriquez, 2015). Movement-movement influence, or the spillover theory theoretically explains the influence and effects of one social movement on another. From this perspective, not only the success of the anti-mining movement can be interpreted, but also the influence of MST on subsequent movements such as the anti-dam and anti-mining movements.

Advancing environmental justice issues (Articles 2-4)

Several empirical results of previous studies have focused on mining conflicts and mining activism in Brazil and Latin America (Walter, 2014; Zhouri, 2014; da Silva et al., 2014; Maher, 2014; Santos and Milanez, 2015; Malerba et al, 2017). A few of them have used environmental justice and environmental

movement studies to touch upon the strategies and actions performed by activists struggling for more justice in the contexts of mining activities (see, for example, Walter, 2014; Urkidi and Walter, 2014).

This thesis has used environmental justice as part of the theoretical framework. As evidenced earlier in this chapter and in **Article 2**, part of the anti-mining movement is composed by NGOs and academics whose objective is to put forward the environmental justice agenda in issues involving mining conflicts. Thus, the objective of this subsection is to interpret the anti-mining movement through the environmental justice lenses. **Article 2** presented findings revolving around strategies and actions taken by the anti-mining activists aiming at pushing mining discussions and decisions in terms of recognition and participatory rights, and distribution of the risks and benefits (see Scholosberg, 2004).

In terms of rights recognition, the data analysis for **Article 2** indicates that the Coalition has taken a stand against the misrecognition of social inequality and its connection to environmental issues. This can be illustrated when anti-mining activists pushed in to take part in public hearings, to insert their social and environmental safeguards suggestions in the mining draft bill and even when they went to local communities affected by mining to promote their political training courses. Additionally, Interviewee#3, Interviwee#6, Interviewee#10 and Interviwee#11 reported the anti-mining movement claims for slowing down the rapid expansion of the mining industry and reversing the 'plunder' sentiment, as earlier discussed in this thesis. According to the interviewees and internal documents from the anti-mining movement, the claims for more participatory rights are linked to the interpretation that political and legislative changes are needed to impose some limits on capitalism and on laws that are allowing nature resources extraction in a rhythm that is considered accelerated by the activists.

Furthermore, according to the interviewees #1, #2 and #4 (and earlier discussed in this chapter), one of the biggest issues involving mining in Brazil, and the root of its resistance, is the country's resettlement track record. Resettlements are typically met with high resistance and followed by land disputes. The activists' view of the process frames it as violent, turbulent, lacking transparency, and as a violation of fundamental human rights. As

already discussed earlier in this thesis, due to the historical process of land occupation in Brazil, many citizens, particularly in remote areas, do not officially have property rights but have been living in a certain territory for several years or generations. When a decision is made to implement a new mining project in a remote area, many families are simply issued with a notice on their home stating that a pipeline or new road for 'mineral logistics' is to be developed through their plot. The activists' perception of the resettlement process is strongly connected with findings on the activists' overall perception of the current development agenda in Brazil. As evidenced by Interviwee#3 and Interviewee#4, and already discussed in this chapter, the anti-mining movement's perception is that rural communities are being eliminated, making room for natural resource extraction and development projects, without properly consulting or involving these communities in the transformation process.

When it comes to distributional concerns, as indicated in **Table 5** earlier in this chapter, the anti-mining activists have voiced clear concerns regarding the allocation of risks and benefits of mining operations. After the tailings dam failure, anti-mining and human rights activists attempted to find ways to better protect the disaster victims. By involving international bodies, the activists made efforts to vocalize the victims' grievances at the international level. The data analysis provided in **Table 6** earlier in this chapter and extensively discussed in **Article 3** show that several national and national actors, such as media and NGOs framed the authorities and companies' responses as slow and not able to protect and guarantee rights of the victims during the aftermath.

The anti-mining movement considers 2015 to be the year in which Brazilian society became aware of the harm associated with mining activities. The anti-dam movement, nevertheless, was largely involved and led the grievance mechanisms and action plans on site during the aftermath of the Fundão Dam disaster. As suggested by Interviewee#11 (and in **Table 6**), the anti-dam activism as a national movement had more history, legitimacy, and experience than the anti-mining movement to deal with the dam failure aftermath.

According to Interviwee#12, the anti-dam activists mobilized themselves on day one to the disaster site, and there established short-, medium- and

long-term action plans to help the victims. To act for better risk compensation and alleviation, the activists pushed forward grievance mechanisms to guarantee the victims the right to bury the family members lost due to the disaster, to have access to a new place to live and immediate financial compensation. Some of these issues have escalated and have become unsolved medium and long-term issues, such as access to drinkable water, the construction of a new neighborhood for the victims and the overall indemnification process.

Because of this, the activists and other allies have put together a draft bill installment to create a national policy to guarantee the rights of people affected by dams. This was an important step on an issue that had been discussed by the activists for many years already: a pattern of rights violations in dam constructions in Brazil (MAB, 2020).

The Fundão collapse has opened up a deeper problem in Brazil. It is being seen by scholars (for example, Fernandes et al., 2016) as a hard lesson that is bringing about a combination of extreme risks and uncertainties associated with over-reliance on inconsistent impact assessments. The media have underscored how unsafe and how poorly licensed and monitored tailing dams are in the country. Immediately, as a response to that, evidence indicates that the government authorities have commissioned new investigations and data collection exercises on the matter to double-check safety issues and avoid future potential disasters.

Shedding light on social and economic inequalities/injustices (Articles 1-4)

Patterns of environmental inequity persist for poor and marginalized peoples, as results of the research indicate. The marginalized groups are the most impacted by environmental risks and injustices originating from industrial systems. The extractive industries are thus creating persistent structural inequities for the communities hosting them.

Articles 1 and **4** suggest how the history of marginalized communities in the rural areas, where poverty and spatial isolation are also found, have contributed to and exacerbated protests or movements such as the anti-mining movement in Brazil. As discussed in **Article 2**, shedding light on the

power disparities between industry players, public authorities and local communities has sparked resistance, pushing for more participation and an alternative agenda in mineral debates and development decisions.

In countries like Brazil, where the social inequality and vulnerability permeate life in rural and urban areas, communities hosting extractive operations are subjected to over adaptation to the extractive industry (Freudenburg 1992) and are pushed to accept constant re-investments in the industry (Perry, 2012) even when social and environmental harm has happened in the past. The consequences or costs of this over adaption are translated into constant risks, injustice, death, disease, permanent transformation in the rural lifestyle, and more and more resistance.

Following the Fundão disaster in 2015 in Brazil, several other incidents have happened together with the risks of subsequent disasters. This new scenario of mining in Brazil has caught the attention of scholars, activists, and public authorities and includes disasters such as: the Hydro Alunorte tailings leaks in 2018, another severe dam burst in Brumadinho in 2019, and the risk of burst in several other tailings dam, such as the case of the Barão de Cocais' community. In this last case, the community is facing the distress of having their paved roads orange-painted, simulating the path the slurry would take to reach the village in the case of a dam failure (Grant, 2019). The dam owner has announced the burst risk and the community is living with this danger daily without concrete alternatives to prevent this potential harm from happening.

Another important implication coming from the Fundão dam failure is to understand in which context disasters and crises have actually happened and which specific features connected to those contexts have accentuated the consequences of a disaster or for it to even have happened in the first place. In other words, what are the aspects from the local, national, and global contexts associated with the Fundão dam failure that could have potentially influenced the reasons for the disaster and its consequences? If the safeguards suggested by the activists would have been incorporated into the mining code draft bill, and if the activism had been more successful in pressuring the authorities to enforce the law in Brazil, could Fundão and other dam disasters been prevented?

Inferences could be drawn on potentially dangerous associations in the societal context where tailings dams are or will be located. First, communities with a high economic and political dependence on the extractive industry are more socially and economically vulnerable and thus more likely to slowly recover from a disaster. Then, countries with a history of weak natural resource governance, which have difficulties enforcing the rule of law, and which have indications of flaws in the checks and balances carried out in the country (corruption) are more likely to encounter disasters, followed by severe recovery challenges (see Newell, 2005).

The research results presented in **Article 3** also drew comparisons between the Brazilian and other mining disaster contexts. Similarities were found in terms of: 1) the companies' first responses denying their responsibility for the disaster in order to protect their reputation and usually ascribing the disaster to 'natural' circumstances; 2) the UN's involvement in pressuring companies and the government to take more efficient actions; 3) long processes during the aftermath, taking usually years to be completed and full of corporate power demonstrations (and counteractions from activists/ victims); 4) the disaster reasons and consequences usually associated with insufficient regulation and/or monitoring processes; 5) criticism from stakeholders about how preventable the incident actually was; and 6) the learning curve coming from those engaged in such disasters.

The awareness and knowledge of the mining industry and its consequences thus expand to a wider group of stakeholders after a mining disaster. In that sense, the successful exposure by the activists of inequalities correlated with rural struggles promotes this kind of knowledge to larger audiences. Ideally, drawing on the results, the access to these correlations will demand changes and adaptation policies from the authorities in order to better balance the role of mining projects in reinforcing historical inequalities in societal contexts such as Brazil.

5 CONCLUSIONS

This thesis has focused on anti-mining activism research to explain how activism against mining in Brazil between 2013-2017 was established and how it developed in terms of actions and strategies vis-à-vis mining events that happened during the same period. The results were presented in terms of **context, response** and **influence** and enabled deep comprehension of national activism against mining in Brazil. The thesis revolves around the argument that anti-mining activism has been established on top of historical roots from previous struggles not only related to natural resource use decisions, but also inherent to persistent social and economic inequalities which are present in Brazil.

The findings detailed the historical context of rural conflicts and land struggle in Brazil, showing how rural activism and the context of natural resources conflicts connects to the anti-mining movement. It was then complemented by a description of the actors who are taking part in the anti-mining movement and how they can be categorized.

Activism as a response to events connected to mining in Brazil were then analyzed through the mining code draft discussions and Fundão dam failure aftermath cases. The evidence demonstrated, supported by social movement and environmental justice studies, how strategies and actions were taken by the activists as response to these two events.

Finally, the results about the influence of activism on mining industry were presented detailing collective actions that valuably served to increase or support relevant mining and society topics within the societal context of Brazil. The activists' influence was broken down into the efficacy of mobilization and collective action; their influence in advancing environmental issues connected to mining; and the effect of shedding light on social and economic inequalities and injustices.

This thesis contributes to understanding a period in Brazil accompanied by great rise in mineral production, and some consequences and adaptations connected to it. With the increase in the global mineral demand, and with the

Brazilian economy also growing in an accelerated way, there has arisen the need for structural adjustments on the rules and mineral regulation reforms.

As explained in this thesis, these changes and adaptations were also followed by professional groups, such as the scholarly community and activists. One of the immediate consequences was the intensification of the 'controversy' surrounding mineral extraction (Bebbington et al., 2008; Zhouri, 2014; Svampa, 2019). That controversy is exemplified in terms of the uneven distribution of risks and benefits at the local level, local land use versus the use of land for the expansion of multinational projects, and the remaining question of whether it is possible to consider mining exploration a sustainable and equitable activity.

This thesis has detailed the links between the anti-mining activists and other activists struggling with rural and land issues. These different movements in Brazil do not only influence each other, but also mobilize and carry out collective actions in partnerships with academics and NGOS. Therefore, these coalition efforts are contributing to successful outcomes, and intensifying exchanges and ingroup learning among the participants. For example, these interactions have allowed collective actions to vocalize their opposition and to highlight the misrecognition of local community rights. Additionally, it made it possible to advance discourses on the plunder sentiment and historical struggles connected to mining. Finally, activists and allies put effort into political training for potential new members and building consensus around alternatives to mining. As detailed in the results chapter, the seven environmental and social safeguards suggested by the activists illustrate how the movement is pushing their agenda in political arenas, such as the mineral framework draft discussions.

As the movement's legitimacy and power are likely to grow in the near future, one implication that can be drawn is the need for activists, companies, and authorities to work more closely together. Considering that part of the anti-mining Coalition believes that justice improvements to alleviate environmental injustice can be achieved via 'official' channels, the rise of participation in institutional arenas will come along with the need for more activists this sort of profile. Activists with knowledge and skills connected

to environmental justice and working along with grassroots activists will be needed more and more.

Drawing from the results, as already mentioned, it is likely that mining resistance will continue to grow in Brazil. If anti-mining activism continues to partner with academic and NGO allies, it is likely to assume that both the class-struggle-based and the rights-based groups will need to constantly adapt and reshape their discourse. Through constant refining and polishing processes, more exchanges and ingroup learning may happen, potentially leading to advancing the interpretation of mining issues as issues of environmental justice. This change does not mean the class-struggle based group will lose power or influence in the Coalition, but they will need cross-fertilization of knowledge and skills to have greater influence and better outcomes in institutional and political arenas such as draft bill discussions and corporate policy decision making.

Furthermore, this thesis contributes to the social movement literature by highlighting the power of narratives and mobilization strategies displayed by the anti-mining movement in Brazil during 2013–2017. The omission from the state in cases such as the Fundão dam failure in Brazil underscored that the victims were not protected in the aftermath and how conflicting information about safety has opened several disputes around trust and truth, especially when it comes to trust in Governmental actions. This thesis has demonstrated how activists are challenging mainstream narratives provided by Governmental authorities and companies by counter-narratives.

The push by activists of mining issues onto the national agenda, framing mining issues as social and environmental violations, and underscoring the need for more participation and recognition and rights has some implications. It opens up avenues to consider the relevance of activism in mining discussions and decisions, and, especially, to consider the quality of public participation in mining industry-related processes.

The issue of public participation in policy and decision-making processes also raise questions about how democracy has been employed in practice. When it comes to public participation related to mining, scholars have generally touched upon the acceptance of mining for communities and broad civil society, and more effective participation during the environmental license

processes. Mining companies often promote participation processes as part of the scope of their relationship with stakeholders and local communities. The capacity of an activist narrative to influence the political arenas, however, is still inconclusive.

Environmental justice scholars are calling for more research linking environmental justice and participatory rights to the relations between the extractive industries and affected communities. In Brazil, the massive presence of social inequality in communities close to mining sites is pushing society to mobilize. As this thesis has demonstrated, activism does not only show the need to advocate for more participatory and recognition rights for these communities, but concomitantly denounce governmental actions in cases where justice is needed.

The online and offline demonstrations during the Fundão dam aftermath, for example, were heavily framed by the activists implying the disaster was an 'announced tragedy', and not an accident. This supposition also carries several others, revealing connections between the extractive industry and inequality. This includes: denouncements of bribery and corruption, the claim of the progressive elimination of rural areas due to resettlement processes, and the intense and long need to fight for justice for disaster victims. Altogether, these furthermore implicate an intrinsic link enveloping the extractive industry, between inequality, and environmental justice activism.

The fact the anti-dam movement was so present in the aftermath of a mining disaster, highlights the interconnection of rural struggles in Brazil and the interchangeable influence between the movements. This unity can be understood because rural communities, in general, have the need to defend their land and the environment, regardless of the industry or project taking place in those territories. This need is at the core of the environmentalism of the poor concept (Anguelovski and Martinez-Alier, 2014).

Moreover, as activists expose the inequalities correlated with rural struggles and promote this kind of knowledge to larger audiences, mining disasters and other corporate shortcomings in Brazil are revealing the damage which can occur due to mining project risks and the societal context interlinks. Communities with a high dependence on the extractive industries, as well as weak governance and corruption are contexts in which disasters are more

likely to occur, and also where communities will face more challenges to recover from them (see Newell, 2005).

When mining projects occur in places where local communities face economic vulnerabilities, poverty, and other inequalities, two problems can arise. First, it can generate an over adaption to that particular industry and create a strong dependence of local communities on it. Second, it can also maintain those inequalities indefinitely instead of promoting development. Especially in the case of the Fundão dam disaster, the results of this study clarify the consequences for the local community surrounding a mining project when things go wrong and the victims are in a vulnerable position. The main implication for theory and policy is that relevant contextual features are increasing the risks for the communities surrounding mining operations. High local community vulnerability can lead to a slow recovery if a mining disaster happens.

Likewise, the struggle with the mining industry as a continuation of past struggles is something that should be further investigated and scrutinized in some contexts. As the findings from this thesis suggest, anti-mining activism is a front shedding light on the quality of democracy in Brazil and the lack of political will and/or capacity to regulate industry.

Although the re-establishment of democracy Brazil in the 1980s has allowed more involvement of civil society in policy and decision-making processes, the quality of democracy in Brazil is still weak, with several groups demanding more participation and rights, especially in the existing dichotomy between rural and indigenous peoples' lifestyles and industrial change (see, for instance, Rothman and Oliver, 1999; Rosa, 2007; Hanna and Vanclay, 2013). How to accommodate and understand these different lifestyles remains a problem in our global society. Such problematics have been studied by, for example, the Portuguese scholar Boaventura de Sousa Santos. He lists a series of dichotomies in our global society that coexist but still are subjected to a sort of hierarchy. These dichotomies include: men/woman, culture/nature, civilized/primitive, white/black, North/South and so on (Santos, 2002). The hierarchy produces an abbreviated vision of the world which is founded in a very extreme reduced part of the everything else that is happening simultaneously with it. As consequence, we as a society

have developed a monoculture of knowledge and of linear time, a logics of social classification, dominant scales, and productivism. To overcome the abbreviated vision and these logics, Boaventura suggests a pluralistic approach—an ecology of knowledge, temporality, recognition, trans-scales, and productivity. (Santos 2002)

Concerning mining issues, the inability to promote justice in conflicts or disaster cases, demonstrates the power imbalance between the industry, communities, and government. Finally, drawing from the results it is clear that the activists are aiming to slow the rapid expansion of the industry, among other reasons, because of reported violence during resettlement and other cases of environmental conflict. Perhaps, for the activists a slowdown in the expansion of the mining industry in Brazil will lead to a better and more ecologic (following Santos' concept) accommodation and recognition of other actors, such as indigenous peoples and rural workers.

Another contribution stemming from this thesis is the relevance of the context when investigating mining and society relations. In countries where the rule of law and the overall governance is weak, as is the case in Brazil, the efficiency of soft laws tends to follow the same tendency. Mining companies operating in the iron ore business are following most of the international standards suggested by industry-led organizations such as the ICMM or international bodies like the UN.

Nevertheless, given that companies in Brazil do not have a good track record even when it comes to following the hard law, the efficiency of soft laws can be also severely questioned. Especially because the tools available are very corporate-oriented, interpreting the absence of protests as a positive outcome, instead of deeply investigating community needs and issues. Moreover, such international standards focus on risks to the business, and not on risks to communities, when mining activities have a real potential to cause harm to the surrounding communities (see Kemp and Owen, 2018).

The Brazilian context showed great fragility when it comes to recognizing rights and allowing the participation of local communities and other members of society in mineral debates, decisions, and other institutional/legal processes. More attention needs to be paid to the environmental impact assessment (EIA) processes in terms of how they have been prepared by business and

reviewed and monitored by the authorities. The state's lack of capacity and/or political will to regulate the industry potentially triggers mining conflicts. On top of that, the findings of this thesis combined with evidence from recent events in Brazil show that human rights are being violated and communities remain unprotected. Hence, more attention should be paid to the role of activism in those spaces, even when their voices are contrary to the interests of industry.

Since activists and communities cannot find an institutional channel efficient enough to include their claims, these groups are seeking and taking advantage of non-official channels such as social media, mainstream media, the publication of reports and books, workshops and talks, protests on the streets and other means to push their narratives through. The matter of participation and the claim for rights are, therefore, legitimate to some extent, and on the other hand, politically inclined. It is not only about the mining impacts or mining acceptance, it lies at the very core of natural resource politics, finding innovative ways to join the mineral debate, claim rights and justice, and push for more collaborative spaces in terms of discussions on natural resource governance.

By pushing to put community safety first, with better considerations of community rights and voices in the political arena, the future of mining in Brazil must give communities' protection and prevent more violent conflicts and disasters from happening. A more cohesive and politically organized society can only be built via more knowledge and awareness of mining impacts and consequences.

If we, as scholars, want to promote social sciences and business study approaches for mining research, then I suggest the use of terms such as 'sustainable' and 'responsible' mining should also come along with the term 'environmental justice'. This is especially relevant in countries with histories of weak governance, populism, corruption, dictatorship, authoritarianism, and social and environmental rights violations, as it is the case of Brazil.

The inclusion of more elements of environmental justice in the mining & society research agenda, will be relevant to understand the effects of further activism in policy and decision-making, instead of neglecting or underestimating these groups. Besides their ideologies, the activists' agenda

concerns pushing for more environmental and social safeguards. In Brazil, activists' influence has potentially prevented powerful actors to 'freely' exert their power without considering the consequences. In addition to that, and also very relevant, the current corporate shortcomings (for example, mining disasters) are bringing more legitimacy to what these groups stand for. Consequently, activists and academics are jointly producing substantial academic and non-academic information about the social and environmental consequences associated with mining. This could potentially enhance civil society awareness of these matters.

Future research efforts should pay attention to how activism in different contexts has resulted (or not) in policy and decision-making changes, especially with the promotion and inclusion of environmental and social safeguards. If natural resource governance implies dealing with environmental and social consequences of industrial operations, then it is relevant to acknowledge the need to include and promote the capacity and participation of civil society representatives.

5.1. FINAL WORDS

On August 5th, 2020, the Global Industry Standard on Tailings Management was launched. The standard aims to improve the safety of tailings facilities in the mining industry. It was developed through an independent process and historical partnership between the United Nations Environment Programme (UNEP), Principles for Responsible Investment (PRI) and International Council on Mining and Metals (ICMM). The partners explicitly relate the beginning of their activities as a necessity following Brumadinho tailing dams collapse in Brazil, on 25 January 2019 (Morgenstern et al.,2016). It has the ambition of zero harm to people and the environment, strengthening the integration of social, environmental, local economic and technical considerations.

During the launch of the standard one activist and representative from Brumadinho community was present and had the opportunity to voice her perspective. Recent events in Brazil involving a sequence of incidents in the mining industry are underscoring a dangerous reality when it comes

to the state's capacity to protect local communities and prevent social and environmental rights violations. Examples, besides Brumadinho, include the failure of the iconic Fundão dam (owned by Samarco) in 2015, and the Hydro Alunorte tailings leak in 2018.

These events give legitimacy to environmental and social justice struggles. The aftermath of these disasters was surrounded by human rights violations and a lack of governmental promptness to protect the victims, underscoring several weak points in the Brazilian rule of law. The processes for enforcing environmental fines and punishment of the responsible companies have failed, and shortcomings in the environmental license granting and monitoring processes, especially in terms of local safety and preventive measures around mining operations, have been exposed.

At the same time, the recently elected president Jair Bolsonaro and the Environmental Minister Ricardo Salles have been proposing governmental measures such as reviewing all the conservation area data across the country aiming to reassess their extent or even no longer considering some of them to fall under such criteria. Another polemic decision coming from the Environmental Ministry has been to ignore some technical decisions coming from environmental agencies and announce the right to oil exploration close to the Abrolhos Archipelago National Park.

These and other procedures have provoked some counteractions. For instance, eight former environmental ministers have combined their influence to jointly position themselves against Mr. Salles' decisions—what they have framed as something malevolent and destructive, reverting all the progress achieved in the environmental area in the past decades (Gortázar and Betim, 2019). Concurrently, parliamentarians, and environmentalists have also criticized Mr. Bolsonaro's current environmental politics (Senado Notícias, 2019). Issues such as possibilities for approving mining projects on indigenous lands and bending regulations on environmental license processes have been some of the criticisms of the current Brazilian Government.

It is important to shed light on the fact that the recent sequence of mining disasters in Brazil, combined with the backward inclination of environmental politics in Bolsonaro's government reinforces the probability of continuous violations of social and environmental rights. Thus, some of the

denouncements and claims coming from activists and NGOs resonate with the reality of current Brazilian environmental politics. Notwithstanding their main motivations, the activists' efforts to dispute and contest narratives to shape and push the environmental and mineral debates, if successful, could result in more environmental and social safeguards in the Brazilian policy and decision-making processes.

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ARTICLES

ARTICLE I

Lyra, M. (2016). The beginnings of the anti-mining movement in Brazil. Peace Review, 28(1), 38-45.

ARTICLE II

Lyra, M. G. (2019). Pursuing a voice in the extractivism debate in Brazil. Environmental Sociology, 5(2), 207-218.

ARTICLE III

Lyra, M. G. (2019). Challenging extractivism: Activism over the aftermath of the Fundão disaster. The Extractive Industries and Society, 6(3), 897-905.

ARTICLE IV

Malin, S. A., Ryder, S., & Lyra, M. G. (2019). Environmental justice and natural resource extraction: intersections of power, equity, and access.

SUMMARY OF ARTICLES

1. LYRA, M. (2016). THE BEGINNINGS OF THE ANTI-MINING MOVEMENT IN BRAZIL. PEACE REVIEW, 28(1), 38-45.

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The Ph.D. candidate is the sole author of this manuscript. The article has no open access.

1.1. Background

Brazil is a country that has been and still is fighting for democracy and procedural justice in practice. This paper goes back to the history of social movements and their struggles, linking those activists from the past and their allies to current struggles and coalitions, with a special focus on activism around the extractive industry that sparkled in 2013.

1.2. Aims

This paper aims to explore how the current national anti-mining struggle is linked to the history of other social movements in Brazil. By reconstructing the history of activism, it comes to the surface an entangled network of institutions that are behind collective actions, it becomes clearer how they are connected to each other, and how the struggle to establish and maintain democracy lay behind activists' motives to mobilize people and perform actions, together with the rejection of the current development model for Brazil.

1.3. Methods

The article takes a historical sociological approach to the Brazilian history of land struggle and social movement studies. These are brought together to show how past and current struggles are connected by fundamental anti-neoliberal and anti-capitalist sentiments.

1.4. Results

The article evidences the anti-mining movement as a response to the current neoliberal agenda in Brazil, with anti-capitalist roots. It becomes clear that social movements are fighting across time for social justice and have a strong political connotation behind their claims, very much connected to the opposition to current development decisions in Brazil.

While there was a historical growth of civil society participation in decision-making processes in Brazil, the anti-mining movement represents a continuation of fighting for rights and promoting political training to reinforce the movement's agenda. The activists' main strategies and actions are related to finding opportunities to consolidate their anti-neoliberal discourse, by showing the negative consequences of mining activity, for instance.

1.5. Conclusions

The paper introduces the Brazilian anti-mining movement and its motivations, showing how it adds up to the historical struggle around the land, commonly present in Brazil and some other Latin American countries.

These motivations are present in the historical land issue in Brazil, which has been tailored by actors like Church representatives and social movement organizations working together with rural and other traditional communities (i.e. former slaves - quilombolas., and indigenous peoples). The resemblance among these movements also highlights the potential for future research pointing to the similarities of treatment the Government is giving to those marginalized societies.

Among the social movements present in Brazilian history there is one point in common. In the institutional arena where industry, government, and civil society interact usually there is an inherent question about how legitimate those movements and their claims are. Although the political connotation of those movements is contesting current development decisions, it is also true that the recent events in Brazil are underscoring Governmental fragilities towards certain groups of the society and to some extent validating the need to fight for social and environmental rights.

2. LYRA, M. G. (2019). PURSUING A VOICE IN THE EXTRACTIVISM DEBATE IN BRAZIL. ENVIRONMENTAL SOCIOLOGY, 5(2), 207-218.

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2.1. Background

This paper analyzes the coalition against mining in Brazil vis-à-vis the environmental justice movement. It also brings about specific features of that coalition members and explores concepts beyond the environmental justice literature.

This article introduces and analyses the National Committee of Defense of Territories affected by Mining (NCDTM), which is a coalition aiming to influence debates on the mineral framework and the consequences of mining industry activities in Brazil.

There is a strong correlation between environmental justice movements in Latin America and other struggles or 'injustices' present in the region. Previous studies suggest there is a recurrent social component when activists are fighting for environmental justice. This social component can be translated in practice as human rights violations and deep social inequalities, justifying the need for fighting for social justice.

2.2. Aims

The research questions for the article are: what environmental justice movements features can be found in the anti-mining coalition? What other features could be found among the coalition members? Can they be grouped based on similarities and differences? Are these features going beyond the EJM literature?

2.3. Methods

The article is framed as an empirical paper, with a qualitative research approach, using the case study methods. For data collection, the following techniques were used: in-depth interviews, participant observation, and document analysis.

Fieldwork activities were carried out in Brazil from April to July in 2015 in several cities in the states of Minas Gerais, Rio de Janeiro, São Paulo, and Goiás. I conducted ten consented interviews lasting 90 minutes on average guided by the inductive process. I collected 43 hours of participant observation data. The interviews were conducted, recorded, and then fully transcribed. I performed a content analysis of the interview transcripts followed by cluster analysis to correlate the findings with the primary literature reviewed. The data preparation for analysis involved entering the responses into an electronic file and then checking, coding, and analyzing it using spreadsheet programming. Categories of comments and cross-references to specific quotes were created to summarize and interpret the qualitative data.

2.4. Results

Findings were organized according to three categories of environmental justice strategies and actions observed in the NCDTM: (1) Recognition of rights, distributional concerns, and participatory demands, (2) Strategies regarding social inequality and alternatives to mining, and (3) Dynamics of power in the consensus-building process.

The absence of recognition of local communities' rights, including their right to participation in decision-making by the rule of law, is especially evident in connection with the granting of environmental licenses for mining operations.

There is a perception among NCDTM participants that communities are not being heard and that they have a limited capacity to absorb technical information about extractive projects. The local resistance is barely echoed at all in local politics or the environmental agencies in charge of the license processes. Evidence shows that opposition to mining projects has been confronted with violence in Brazil. Activists reported that licenses are being granted to mining projects that impact quilombola communities, agrarian reform, and indigenous peoples' lands. Evidence indicates that NCDTM

participants consider public hearings during the environmental license process to be inefficient and incapable of preventing mining projects from going ahead.

The NCDTM is seeking to fundamentally change the way mineral exploration is conducted. Its activists frame the mineral activity as being pursued at an accelerating pace. They aim to establish communal sovereignty over natural resource use.

Although the steering committee is viewed as a front of consensus by the coalition participants, by taking decisions and drawing strategies without consulting all members, the coalition also faced the risk of reinforcing the same kind of privileged versus oppressed dynamics that they condemn.

2.5. Conclusions

This paper focused on a coalition working as a consensus front to participate in the mineral debate and decision-making arenas in Brazil. The results show how the NCDTM draws up strategies and actions related to environmental justice, and how its participants deal internally with differences when trying to balance power and make decisions.

When fighting for social and environmental justice, the NCDTM makes use of the flexibility enabled by, and solidarity among, its members, who represent different axes of oppression. This approach can be considered to draw on intersectionality since such practices enable greater possibilities to promote social change.

In addition to the NCDTM's broad struggle against capitalism, neoliberalism, and neo-extractivism, it was also clear that many of its participants came from earlier struggles aligned with these same broad political and ideological objectives. A significant conclusion to be drawn from this broad focus of opposition to capitalism is that, ultimately, the NCDTM's objectives are not fundamentally centered on the mining industry and its impacts. Neither are they centered on typical EJM demands, such as distributional and participation rights. Although these demands are addressed by the coalition to a degree, my findings suggest that the main thrust of the coalition's efforts is geared towards achieving broader ideological and political goals regarding the consequences of the current national development agenda in Brazil.

3. LYRA, M. G. (2019). CHALLENGING EXTRACTIVISM: ACTIVISM OVER THE AFTERMATH OF THE FUNDÃO DISASTER. THE EXTRACTIVE INDUSTRIES AND SOCIETY, 6(3), 897-905.

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3.1. Background

Fundão tailings dam burst in Minas Gerais state, Brazil in November, 2015. The disaster has caused several deaths and an enormous environmental impact on rivers, fauna, flora, and the Atlantic Ocean. The way corporations and Governmental authorities responded to it has caused an uprising in the anti-mining sentiment while also mobilized several different kinds of activists to fight for rights and justice in the disaster aftermath.

Mining disasters raise questions about how communities and other relevant stakeholders are learning to deal with the negative consequences of the extractive industry based on their and other people's previous experiences. Some inputs are also related to how companies and the industry are responding to such disasters as they are happening. Although reports are being produced to educate mining companies on how to prevent new disasters from occurring, reality shows that tailing dam failures are increasing over time As a consequence, recent environmental disasters involving the extractive industry have led to increasing levels of suspicion and negative perceptions regarding the controversies that are always associated with mineral extraction.

3.2. Aims

The paper uses case study methods to analyze how local communities and activists have participated in the Fundão dam disaster aftermath vis-à-vis

how the companies and authorities involved have performed in terms of remedial and recovery efforts in the first 60 days after the burst.

3.3. Methods

This article is an empirical paper, using the case study method. The study is based on document analysis of 230 reports, documents, and news and website posts published in the first 60 days after the Fundão dam failure.

The analysis considered key issues and associated responses from key stakeholders. The key stakeholders considered are civil society actors (i.e., victims and activists), and the responsible companies. However, other stakeholders such as the United Nations (UN) and the Brazilian authorities were also included in the analysis, since they had a critical part to play in the dynamics of the aftermath. Access to drinkable water, remedies, and safety compounded the set of issues analyzed in the study together with the capacity that activism had to influence the aftermath of the disaster.

3.4. Results

Resonating with previous studies, evidence points out the lack of trust of the victims due to the lack of reliable information in the aftermath. Because of that, another phenomenon that is becoming common started to spread. The controversies around the water toxicity level, for instance, allowed the beginning of a dispute and contest of truth and trust by different actors, like the media, academics, activists, government representatives, and the companies responsible for the disaster.

Thus, these actors engaged the political arena of the aftermath with 'new' information and frames, raising mistrust in 'official' information and also the insecurity not only among the victims, other potential ones (communities nearby other tailings dam sites).

Evidence also resonates with previous research on environmental justice and extractive industries and mining disasters aftermath in developing countries showing how the power imbalance between the victims and the companies vis-à-vis with the available mechanisms for immediate remediation were not sufficient to promote justice for the victims.

Because the State failed to protect the victims and the environment, several protests sparked in the cities affected by the disaster, and activists started to spread also denouncements about potential bribery and corruption cases, associating the mining industry to politicians. That is evidence that independent actions from activists have changed the aftermath political dynamics by pushing and shaping the mineral debate, not only via online and social media but especially via traditional media like newspapers.

3.5. Conclusions

This article has analyzed the influence of the local communities and activists in the aftermath of the Fundão dam disaster vis-à-vis how companies and authorities have performed activities connected to remedial and recovery efforts in the first 60 days after the burst. The results have evidenced the different kinds of responses, positions, and actions that took place.

One of the implications of this study is contributing to underscore how unsafe and poorly monitoring processes around tailings dams are in Brazil.

The case has also allowed comparisons with other disasters and to grasp some relevant features present in a context connected to tailings dam risks. Policymakers, authorities, and business executives should pay careful attention when these features are combined: communities with high economic and political dependence on the extractive industry, since they are more vulnerable and most likely to have a slow recovery from a potential disaster; underrepresented poor communities or represented by intermediaries, what can fuel national and international engagement in the political aftermath, raising its complexity; weak natural resource governance history.

4. MALIN, S. A., RYDER, S., & LYRA, M. G. (2019). ENVIRONMENTAL JUSTICE AND NATURAL RESOURCE EXTRACTION: INTERSECTIONS OF POWER, EQUITY, AND ACCESS.

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The Ph.D. candidate is the third co-author of this manuscript. The first co-author had the leading role and organized the paper structure and content. All the co-authors have contributed to the literature review, writing, editing, and discussion. Open access.

4.1. Background

This piece is the Editorial for a Special Issue focusing on power in the context of environmental justice at sites of extraction. There has been relatively little conceptual or empirical cross-pollination between analyses of natural resource dependence and environmental justice. Although there is evidence pointing that extractive industries can create inequities and that the associated environmental risks, harms, and costs tend to impend on more vulnerable and socially marginalized communities, there are still some gaps to bridge. Those gaps remain especially in understanding the relationships between resource dependence and intersecting forms of injustice and in informing the ones engaged in natural resources policy and governance processes.

4.2. Aims

This editorial paper calls for the need for more systematic research in the context of interactions between extractive industries and host communities, specifically focusing on the ways environmental justice and procedural equity play out in those contexts.

4.3. Methods

The article uses literature review as a research method. It is fundamentally based on the literature review of environmental justice and natural resource

extraction studies. We have deepened our research on those studies by integrating them and proposing new relationships among constructs. That is also demonstrated in some research gaps that still need to be covered by environmental sociology scholars.

4.4. Results

The article builds on critical and intersectional environmental justice research, incorporating power issues through a critical environmental justice lens. It touches upon the lack of inclusion of marginalized voices in the extractive decisions and debates, issues across borders and their geopolitical tensions, intersections of privilege, and oppression for the ones impacted by mining, like workers, rural farmers, and local community members, for example.

4.5. Conclusions

This special issue builds on important work on critical and intersectional environmental justice research to incorporate a broadened scope of conceptualizing and studying power through a critical environmental justice lens. There is a gap on studies linking research about the environmental justice impacts of extractive industries and the research on natural resource dependent communities. The few studies conducted so far emphasize the important ways in which environmental injustices can be ignored in the context of significant corporate or industrial power and influence - and how procedural injustices can be especially acute.

By examining the spaces for and gaps in meaningful public participation in these contexts, the special issue illuminates important power dynamics and imbalances embedded within the structural inequities of natural resource dependence. By linking structural aspects of natural resource dependence and extraction with observations about environmental injustice, we advance the literature in ways reviewed in this editorial. Despite numerous barriers to procedural equity in an era of extractivism, this special issue highlights some concrete strategies for successfully challenging environmental injustices in extractive contexts. We hope that it helps to serve as a road map for coalition-building strategies that challenge consolidated power and achieve more just processes and outcomes in resource extraction decisions. Recent efforts to

ARTICLE III

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Original article

Challenging extractivism: Activism over the aftermath of the Fundão disaster

Mariana Galvão Lyra

Department of Geographical and Historical Studies, University of Eastern Finland, Joensuu Campus PO Box 111, FI-80101 Joensuu, Finland

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ABSTRACT

Tailings dam failures represent one of the highest risks associated with the mining industry. When such a disaster happens, it usually has enormous social and environmental consequences. The literature commonly suggests that dam failure events happen after periods of increased mineral demand. During high demand peaks, more waste material is generated, and during recession, financial cutbacks can lead to unpredicted effects on safety, especially in operations where the domestic authorities have less capacity to monitor and reinforce the rule of law. Based on document analysis from data collected during the first 60 days after the Fundão dam failure in Brazil, results highlight the capacity of companies and authorities to deal with disaster remediation, which have enabled multilevel activism. It shows how collective actions are relevant to support local claims/campaigns connected to rights and the service of justice in the disaster aftermath.

1. Introduction

Between two and five major tailings dam failures happen per annum, according to estimates (Davies, 2001), and many of them remain under- or unreported, which has seriously hindered the development of appropriate safety regulations (Azam and Li, 2010; Rico et al., 2008). Moreover, scholars studying tailings dam failures have investigated the available data related to the number of failure events in terms of temporal and spatial distribution, cause, and impact (Azam and Li, 2010; ICOLD, 2001; Rico et al., 2008). The literature is scarce, though, when it comes to understanding the role of civil society and its capacity to respond when a disaster like this happens. However, mineral extraction and waste disposal structures stimulate debate in civil society about mining (non) acceptance and development-inclined agendas, and they are also gaining relevance and controversy in politics (Beer and Chaisson, 2019).

Interdisciplinarity plays a relevant role when experts work toward preventing or containing the effects of tailings dam failure (Kossoff et al., 2014). Mining disasters offer important opportunities to learn about the interconnections and adaptations between society, technology, and the environment when unexpected events occur (Mitchell, 1996).

Once local communities are contaminated they become stuck, suffering the impacts and consequences associated with a mining disaster. Apprehension and fear are recurrent, aggravated by disagreements over the definition of the situation, with multiple interpretations in the broader political context intensifying the conflict (Couch, 1996). Thus, activists must learn lessons from previous corporate and government responses in similar conflict cases (Kirsch, 2002). It is common for companies to use tactics to weaken activists' coalition efforts (Kirsch, 2002; Kraemer et al., 2013; Arce, 2016). This is especially common in cases where victims have limited capacity to participate in the aftermath of the disaster and therefore need to fight for their rights, such as in countries where the rule of law is 'weak' and democracy is fragile in practice.

Mining disasters raise questions about how communities and other relevant stakeholders are learning to deal with the negative consequences of the extractive industry based on their and other people's previous experiences. Some inputs are also related to how companies and the industry are responding to such disasters as they are happening. Although reports are being produced in order to educate mining companies on how to prevent new disasters from occurring, reality shows that tailing dam failures are increasing over time (Cf. Azam and Li, 2010). As a consequence, recent environmental disasters involving the extractive industry have led to increasing levels of suspicion and negative perceptions regarding the controversies that are always associated with mineral extraction.

Major environmental disasters and associated responses can be framed in terms of prompt reactions from locals (victims) and authorities; public participation and public participation mechanisms; access to information; and access to justice (Skanavis et al., 2005). When authorities cannot protect communities by rule of law, local people feel

E-mail address: mariana.lyra@uef.fi.

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desperate and activists often go abroad seeking international actors who could potentially exert some influence over companies' actions (Coumans and Kirsch, 2011; Keck & Sikkink, 1998). Concurrently, activists have seen mining conflicts and disaster situations as opportunities to influence policy and politics in Latin America, for example (Arce, 2014).

Given the recent rise in tailings dam failures and mining disasters (Azam and Li, 2010) and the record of poor actions linked to remedial and recovery efforts when a disaster happens in a developing country (WRI, 2018; Shrivastava, 1996), we ask whether local communities' and activists' efforts are capable of influencing the aftermath of a disaster. To answer this, this paper will analyze how local communities and activists have participated in the Fundão dam disaster aftermath vis-à-vis how the companies and authorities involved have performed in terms of remedial and recovery efforts in the first 60 days after the burst.

2. Environmental disasters in the mining industry

The mining industry has seen several significant failures and disasters in recent years (Rico et al., 2008; Azam and Li, 2010; Sairinen et al., 2017; Quastel, 2017) with severe environmental and social consequences. Tailings management is considered the most critical aspect of reducing environmental disasters associated with mining operations (Schoenberger, 2016; de Freitas et al., 2016), accounting for about three-quarters of all major mining-related environmental disasters (MMSD Project, 2002).

There are some international efforts that are aimed at preventing and remediating future environmental disasters, such as the publications from the United Nations Environmental Programme (UNEP) (UNEP, 2001; ICOLD, 2001; Roche et al., 2017). Many of the tailings dam failures that have occurred could have been prevented (ICOLD, 2001), and while the potential for a mining disaster to happen should drive the industry to be more careful, economic pressure often prevents this from happening (Chambers and Higman, 2011). In 1996, a tailings spill at the Marcopper mine in the Philippines reached the Boac River (Lindon et al., 2014). A UN investigative team visited the disaster site and denounced the lack of environmental concern when it came to Marcopper's operations, arguing that it would have been possible to prevent the spill from happening (Social Watch, 2002).

There is historical evidence indicating that high rates of tailings dam failures usually occur two or three years after periods of increased demand (Davies and Martin, 2009). The mining industry's global production networks usually follow boom-bust cycles, with rapid increases in demand and production followed by recessions that impact the industry significantly in financial terms, thus also having harmful effects on safety (Shrivastava 1996). As the global demand for minerals increased in the 2000s, so did the volume of waste material.

The environmental and human impacts of tailings dam failures can be split into immediate, medium- and longer-term impacts. While the immediate human impacts are usually death due to drowning and suffocation, longer-term effects include death resulting from toxicity, but these are much harder to link to dam failure (Kossoff et al., 2014). There are environmental impacts on fauna, flora, water, wind (as a transport mechanism) and soil contamination, and there is an immediate concern at the local level about toxicity and exposure to heavy metals and other forms of contamination (Kossoff et al., 2014; Kirsch, 2002). There is a need for more empirical research on recovery from industrial disasters, including the identification of alternatives when existing means are inadequate (Mitchell, 1996).

As per the safety of tailings dams, recent discussions following the Fundão failure have considered multi-stakeholder commitments toward a zero-failure objective, and independent assessments of different attributes (such as economic and safety aspects), putting environmental and human safety as determining factors ahead of financial costs (Roche et al., 2017).

2.1. Corporate accountability mechanisms and capacity to deal with the environmental and social consequences of their business

Globalization has intensified the presence of mining corporations operating in developing countries. This has come about along with the need for those companies to behave responsibly, since some scholars associate economic power with the potential political power those companies could exert in the countries they decide to operate in (Ward, 2000). Corporate social responsibility (CSR) has become important for companies seeking to report on their social and environmental performances, particularly in areas close to their operations. Since there are no global regulations to hold such companies to account for the consequences of their business, CSR has emerged and has been maintained as a voluntary self-monitoring tool, also working as an alternative accountability mechanism (Coumans and Kirsch, 2011). However, limited attention has been paid to the political struggles and power dynamics involving CSR implementation in local contexts, especially with respect to human rights issues (Haalboom, 2012).

For instance, risk management concerns with diminishing uncertainty in the aftermath of a disaster can lead to weaknesses in dealing with the actual management of risks (Button, 1995), potentially excluding the views and voices of the people exposed to risk. Indeed, there are controversies related to the CSR agenda and guidelines from other corporate departments. For example, while there is a drive for CSR to make companies become more and more transparent and open when reporting impacts, legal risk executives may suggest that silence is the safest option (Ward, 2000). In the Philippines, people from Marinduque faced a 30-year future of tailings pollution that severely compromised marine life and food security of nearby fishing villages. In 1993, a two-year-old tailings dam burst, completely flooding local villages. The company involved was the Canadian firm Place Domer. Their then manager's initial response was to deny any connection to the disaster, attributing the incident to unusual rainfall levels (Social Watch, 2002).

CSR sometimes faces strong resistance at a local level. Demands are related to the needs of increased regulation and better access to legal mechanisms for affected communities (Coumans and Kirsch, 2011), especially when something goes wrong, as is the case in an industrial disaster. The Mount Polley tailings dam disaster in Canada impacted nearby communities, including First Nations. Almost one year later, Imperial Metals won a conditional permit from the Canadian government to reactivate operations (Quastel, 2017) and the right to discharge water directly into Quesnel Lake. Despite several investigations conducted by the government, the company returned to operations and has never paid compensation to the victims. The Mount Polley disaster was regarded as lacking accountability from the corporate side, according to activists (Bowman, 2018). The cleanup solutions have raised controversy and the dam failure has prevented local access to water and fishing. Activists consider that more investigations into companies and government authorities are required.

Given that the interests in CSR tools and the corporate way of dealing with the aftermath of disasters are often in conflict with those people and groups impacted by mining activities, environmental movements are growing locally and at the national level with a focus on the debate about the consequences of mineral extraction (Wurfel, 2006; Lyra, 2016), especially in Latin America. The region is facing environmental and human rights abuses and since 2000 the situation has become epidemic (Gordon and Webber, 2016). Human rights and environmental transgressions are usually associated with a lack of political will to regulate companies or to provide the proper conditions for legal reparation (Coumans and Kirsch, 2011).

2.2. Local community capacity to participate in the aftermath of a disaster and have access to rights

The extractive industry has always had a social and environmental

impact on neighbouring communities and nature. Studies on mining conflicts usually suggest that a good deal of pressure from civil society was needed to make companies take more responsibility and action. Communities impacted by mining in countries with weak governance usually have little or no legal recourse to address the harmful consequences that are common in this industry (Coumans and Kirsch, 2011). In contrast to strong states, where there is wide acceptance of the rule of the law in the political culture, weak states simply ignore the pressures coming from society (Wurfel, 2006).

When debating with a mining company about its social and environmental responsibilities, there is a difference between a well-resourced and globally networked NGO and a poorer community without significant resources or access to global networks (Newell, 2005). Therefore, in Latin American countries, mobilizations, coalitions, and network efforts against the extractive industry are necessary, since conflicts at the local level that are developing systematically do not necessarily benefit from the presence of NGOs with their access to resources and international networking. Anti-mining movements are the most common type of mobilization in Peru, for instance (Arce, 2014).

Campaigns against extraction tend to be more successful when they are rights-based mobilizations at their core. They are more likely to have positive outcomes, with political consequences (Arce, 2016). The question around the quality of participation during environmental license processes is one of the key claims. Participatory mechanisms remain fundamental tools for expressing social demands. When they are not effective, there is a risk that those mechanisms end up reproducing social conflicts, forcing some local members to step aside from the participatory game. Consequently, more conflicts will emerge because the discussions proposed by activists and community members are not encompassed by current mechanisms of environmental governance (Merino, 2018). An innovative example of communities going beyond the environmental governance apparatus is the experience of community consultation in mining conflicts in Latin America. Countries like Ecuador, Peru, Guatemala, Argentina, and Colombia have had several local communities succeeding in hampering new mining projects (Urkidi and Walter, 2011).

Despite the examples above, it is still hard to understand the extent to which NGOs are able to influence environmental policy in weak states. On the one hand, it is easier to see effectiveness when looking at activists' strategies and actions over a substantial period of time. On the other hand, it is possible that mobilizations that have won some environmental gains in the short term do not usually translate into or sustain victory in the long run (Wurfel, 2006). The Ok Tedi Mine operations in Papua New Guinea have clearly raised questions about natural resource governance in developing countries. The company's public admission of responsibility came only 11 years after the first letter of complaint (WRI, 2018). This is considered a case in which there was a growth in the range of stakeholders involved in the mining industry at the national level (MMSD Project, 2002), along with a rise in the awareness coming from actors like NGOs, landowners, and academics (Kirsch, 2002). Although there was clearly a long struggle to win compensation, the settlement of OK Tedi suggests that political activism, legal pressure, and increased public scrutiny can be an effective combination (Kirsch, 2002).

3. Methods

This case study (Yin, 2001) understands that environmental issues are also tied to a social imperative (Beer and Chaison, 2019), and it is based on document analysis of 230 reports, documents, and news and website posts published on the first 60 days after the Fundão dam failure. The case is an appropriate example for this exercise because of its high visibility at national and international levels, providing, therefore, a great amount of material. The data was analyzed using content analysis (Bardin, 1977). The timeline focus of this analysis is based on what had happened from November 2015 (after the disaster occurred) to January 2016. However, relevant information from before and after this period are included when necessary.

The analysis considered key issues and associated responses from key stakeholders. The key stakeholders considered are civil society actors (i.e., victims and activists), and the responsible companies. However, other stakeholders such as the United Nations (UN) and the Brazilian authorities were also included in the analysis, since they had a critical part to play in the dynamics of the aftermath. Access to drinkable water, remedies, and safety compounded the set of issues analyzed in the study together with the capacity that activism had to influence the aftermath of the disaster.

4. Background to the Fundão dam failure case

On November 5, 2015, in the historical Brazilian city of Mariana, Minas Gerais state, the Fundão tailings dam burst. Nineteen people were killed. Damage to fauna and flora was huge, and it is difficult to estimate how many years it will take for these to recover. The Fundão dam failure has been considered the worst environmental disaster that has ever happened in Brazil.

The Fundão tailings dam is part of an iron ore mine pit that is operated by Samarco. Their shareholders are Vale and BHP Billiton. Samarco has been operating since 1977 in Brazil, essentially as an exporting company of iron ore pellets (Samarco, 2016a).

Minas Gerais is a state that is historically connected to mineral extraction, being responsible for more than 40% of all national mineral production (DNPM, 2015). Espírito Santo state has been the main door to export minerals extracted in Minas Gerais. Along the slurry trajectory, several communities, especially in Espírito Santo, had no experience or previous contact with mining companies or their activities. These communities were impacted by the effects of the extractive industry disaster without being considered by the company or the state as potential impacted areas if a disaster like this were to happen.

5. Results

5.1. Access to drinkable water

It is very common for there to be immediate local-level concerns about toxicity and other forms of contamination when a tailings dam failure occurs (Kossoff et al., 2014; Kirsch, 2002). The transparent and effective response from authorities and responsible companies in those situations could work to alleviate tension among community members. After the dam burst, the slurry reached the Doce River, impacting several nearby communities along its course. The main source for drinking water was then contaminated by the slurry and questions around whether it was toxic or not have arisen. While they were waiting to receive information about what to do in this situation, the price of bottled drinking water increased considerably.

Usually, the UN positions itself as a defender of human and environmental rights when mining activities have resulted in harm to people and the environment (see for instance Pernetta, 1988). However, the question of how effective UN initiatives on protecting or mitigating business impacts on human rights are remains (Harrison & Sekalala, 2015). The first UN position on the issue came from a special rapporteur on human rights who said, "the government and companies should be doing everything within their power to prevent further harm, including exposure to heavy metals and other toxic chemicals" (UNOHCHR, 2015). The national and international media spread the news, saying the UN specialists confirmed the mud was toxic. Therefore, an official statement from Samarco in response declared the company respected the UN right to freedom of speech, and "is continuously informing (…) the components coming from the dams do not present harm to human health" (Samarco, 2015).

The company had to build two spill containment dikes to hamper solid materials so that cleaner water could run out into the river flows.

Along with that, several other urgent decisions were taken together with local authorities to alleviate the impact of slurry on the river flow. When the government authorities started the process of water quality analysis, the first results came from different agencies with mismatching data on the increase of heavy metals in the river flow (Carolina and Damasceno, 2015). New samples were collected by the national water agency, indicating that the Doce River's water had no toxicity and the results obtained were similar to the data from 2010 (ANA, 2015). That conflicting information gained national attention via the media and increased insecurity at local levels regarding whether the water was safe for consumption. As a result, several academics decided to visit the disaster site and local communities along the river to collect water samples and provide an independent analysis of the water quality (Escobar, 2015). Some of them yielded results indicating high levels of arsenic, manganese, and lead.

Activism and grassroots activities enabled by the distrust in government are not rare in cases where people are fighting for justice (Freudenberg & Steinsapir, 1991), and environmental risks and threats are being heavily contested and disputed by different actors nowadays (Carolan & Bell, 2003; Wakefield et al., 2006). Thus, as the slurry reached downstream, more towns and cities were being impacted. There was one case in Baixo Guandú, Espírito Santo state, in which the mayor blocked the railway that forms part of Vale's logistics system, in order to get the company's attention and thus the opportunity to negotiate directly with them on how the local damage caused by the disaster could be handled in that city (G1 ES, 2015a).

Samarco and Vale only started to provide drinking water to the local population after the courts required them to (TJMG, 2015), but not before they had appealed to the court, declaring the water to be safe. Samarco stopped its provision after the legal enforcement period expired (Samarco, 2016b; Samarco, 2016c). The water distribution process happened in a chaotic way in several cities, with long queues and protests (Souza, 2015; G1 ES, 2015b; Brasil de Fato, 2015; Goncalves, 2015).

5.2. Access to remedies

The power imbalance between mining companies and local communities in the extractive industry has been constantly studied and acknowledged, and despite growing efforts to bring about change, the available mechanisms are still not sufficient to promote greater justice when a mining conflict or disaster occurs (Kemp et al., 2011; Owen & Kemp, 2013).

After the Fundão tailings dam failure, local communities living near the dam and along the Doce River had the right to timely access to resources needed to guarantee their safety and integrity (Graetz & Franks, 2013; Ruggie, 2011). One of the key aspects was the lack of reliable information and slow response coming from the companies and government authorities, leading to an increase in insecurity among those locals affected. For instance, inconsistent information was coming from inside Samarco. The CEO said that two tailings dams had burst rather than one (G1 MG, 2015).

Activists had prepared questions like "why was there no search for survivors on the ground, only by air?" (Manenti, 2015). They had traveled to the disaster site in order to frame the dam failure as an "announced tragedy", meaning the disaster was preventable in their perspective (MAB, 2015), and to clearly state their view on the impacts (Greenpeace, 2015a). The media was also trying to get closer to the victims and found resistance and barriers to reporting under which conditions victims were getting remedial actions by Samarco (CQC, 2015).

Three weeks after the dam burst, Samarco had not yet made the compensations requested by the state's prosecutor office for 296 families (Ribeiro, 2015). The UN positioned itself again on the case, announcing that a visit to the disaster site would happen as a result of invitations coming from social movements and NGOs (Borges and Maso, 2017).

After the UN representatives' visit to the disaster site, comments on the imbalance of power between victims and the companies regarding the aftermath of the disaster started to gain in strength, with denouncements that the government authorities would engage in great discourse but take virtually no effective measures on the matter (Kiefer, 2015). Evidence of this was seen when Samarco refused to sign an agreement to ensure urgent support for the victims (Estado de Minas, 2015), suspended water distribution in some cities, even with all the chaos and suspicion around the issue (Sá and Nossa, 2015), and the fact that two months after the dam burst, two people were still missing (Freitas, 2016).

5.3. Safety

One of the first fears that victims and locals living near the disaster site and alongside the river had was the risk of a new dam failure. As Mendonça (2015) explains "Samarco has admitted (…) that the Germano and Santarém dams, close to the Fundão dam, (…) show safety levels below the recommended and face the risk of bursting as well".

A UN special rapporteur on human rights has commented on the situation by saying "the steps taken by the Brazilian government, Vale, and BHP Billiton to prevent harm were clearly insufficient" (UNOHCHR, 2015). Civil society also resonates with that argument, criticizing tailings dam monitoring processes and the lack of commitment to dealing with the failure risks from the corporate side (Junior, 2015).

The idea that other tailing dams could burst raised great concern among the authorities. The National Department of Mineral Research declared that at least 16 other tailing dams were not safe (Geraque, 2015). This was followed by commissions and task force efforts to diagnose potential risks and monitoring processes regarding tailings dam safety in the country (Laboissière, 2015; Bocchini, 2015; CMA, 2015; Notícias, 2015).

Concurrently, the media informed the population that Samarco's emergency plan had no further details on how to alert the communities nearby if needed (i.e., by siren). The company has installed sirens in the region after the dam failure (Bertoni et al., 2015). Additionally, the information that Samarco's production capacity had grown by 37% a few years before the disaster, thus increasing the dam's failure potential, also increased the levels of mistrust over the company's credibility and commitment (Cherem, 2015). Around the same time, the firefighter force in Mariana identified a crack in the Germano dam and Samarco denied this information (Notícias de Mineracão, 2015).

Denouncements over previous warnings on the potential failure of the Fundão dam started to be covered by the press (Castro, 2015) together with the information that Vale was depositing part of its production waste in the dam that burst (Ferraz and Prado, 2015). While Vale was trying to explain how much of their waste was being dumped in Fundão and why it was happening without any license or formal agreement (Mendes, 2015), Samarco was having trouble meeting the deadlines to deliver the emergency plans to the prosecutor's office in case the Germano and Santarém dams also burst. The company failed to deliver such documents twice (Estado de Minas, 2016) and tried to alleviate the situation by announcing that Fundão would not return to operation (Bertoni and Leite, 2015). However, the pressure on the company remained high and was top of the agenda for the national media. All the buzz has worked to increase the fear and insecurity in communities impacted by nearby mining sites.

The Fundão collapse has opened up a deeper problem in Brazil. It is being seen by scholars as a hard lesson that is bringing about a combination of extreme risks and uncertainties associated with over-reliance on inconsistent impact assessments (Fernandes et al., 2016). Several announcements to the media have shown how unsafe and how poorly licensed and monitored tailing dams were in the country. Immediately, the government authorities commissioned new

investigations and data collection exercises on the matter (Geraque, 2015; CEXBARRA, 2016; Sales, 2015) to double-check safety issues and avoid future potential disasters.

5.4. Activism challenging dynamics and capacity to influence the aftermath

When an industrial disaster happens, prior and subsequent events connected to it are interpreted differently by different stakeholder groups, for different reasons. Whether it is the promptness from corporations to protect their image and reputation, adopting a defensive posture; the authorities' attitudes, mediating corporate and local communities' interests; or NGO and activists leveraging these events to create disruptive waves of protest in a broader and political context, these responses tend to intensify rather than ameliorate the conflict. Many other issues tend to add to the complexity of disaster recovery.

While recovery and emergency matters are enacted by the authorities and companies involved, concerns about preventing the community from unraveling can be put aside, leaving activist groups to start questioning whose fault it was that the disaster occurred. Alongside that, mistrust of government, alienation, and post-traumatic stress disorder are also common (Couch, 1996).

One of the first hypotheses on the dam failure that the media spread concerned a number of earthquakes that had occurred in the region right before the disaster and had been detected by academics (Folhapress, 2015). Following the idea that the reasons for the dam failure were still unknown, a public authority representative from Minas Gerais said that "Samarco was a victim of the burst" (Tavares, 2015).

In the same vein, a Samarco representative said of the dam failure "it is not a case for apologizing" (Mendonça, 2015), fueling a lot of media attention and anger from civil society organizations and individuals. Usually, victims of disasters do not have enough power to push for access to remedies through normal political channels (Mitchell, 1996), seeking mass media and other innovative and disruptive ways of support. A representative of the International Articulation of those Affected by Vale said, "This was an announced tragedy. Another chapter in the unsustainable history of Vale and its affiliates" (Araripe, 2015). According to him, Vale and its companies oppress communities and workers, and the Articulation wants to shed light on what the mainstream media cannot or will not show.

Anti-mining groups criticized the companies' response in the aftermath and also acted in solidarity with the victims. That was reinforced in a subsequent note considering 2015 as the year in which Brazilian society became aware of the harm associated with mining activities (Em defesa dos territórios frente à mineracão, 2015).

It didn't take long for waves of protests to start in front of Vale's headquarters in the cities of Rio de Janeiro and Vitória, the capital city of Espírito Santo state, where several fishing communities were impacted by the disaster. Activists chanted and carried banners saying that what had happened "was not an accident". Violent protests took place in Vitória. Activists invaded and destroyed part of the entrance to Vale's offices (Gazeta, 2015). Contentious actions and framing processes are common in such circumstances. Activist dynamics include interpreting and constructing reality via challenging other frames and by creating new ones (Benford and Snow, 2000).

Citizens protested as the slurry reached their homelands. Communities along the riverside and the ocean tried to organize themselves to alleviate the impact of mud on the water (G1 ES, 2015a) and also to complain about the companies' behavior in the aftermath of the disaster (Coissi and Braga, 2015). Online, many internet users changed their avatars and shared images on social media associating the mud in the sea with Vale's logo.

The fact the companies involved in the tragedy never publicly claimed responsibility to it (Losekann, 2017) has raised a lot of anger and indignation not only among those affected but also among activists and other citizens, in general, who have started to use the hashtag #naofoiacidente ("it was not an accident"). It began appearing a few days after the disaster and continued to spread, especially at certain moments such as when the state governments involved in the area affected by the disaster reached an agreement with the companies without any public involvement and/or participation (Losekann, 2017). Another cause for suspicion among citizens was that in the meantime, Ricardo Vescovi, Samarco's president, was working on the granting of a preventive habeas corpus from the Justice Department, thus avoiding a potential jail sentence due to the disaster (G1 ES, 2015c).

Local authorities and the Brazilian president were criticized nationally and internationally by the media due to their slow response and lack of pressure for urgent actions on the matter. The Guardian framed the response as "slow-motion", and an opinion piece published in Bloomberg said "Brazil has no leader" (Douglas, 2015; Margolis, 2015). The UN's main leader on human rights, Zeid Ra'ad Al Hussein, pronounced on the case by saying that Samarco was not the only party responsible for the disaster and has asked for a deep and impartial investigation (Chade, 2015). He then reiterated that the government should take their responsibility by protecting the victims.

In countries where the authorities are not capable of protecting society, society has to find a way to protect itself. International bodies commonly get involved in such cases (Keck & Sikkink, 1998). Greenpeace and human rights activists have worked on giving a voice to victims from the local to the international level. For instance, Greenpeace called for justice for the Fundão dam victims in Perth, Australia, during a BHP Billiton shareholder meeting (Greenpeace, 2015b).

Human rights activists also sent a document to the Inter-American Commission on Human Rights, highlighting that communities in Brazil tend to accept mining activities because of poverty and social inequality patterns (Borges and Maso, 2017). In several disaster cases, victims are not able to get the justice they deserve, or compensation comes after a very long negotiation process. In developing countries, most victims have a structural position within society that puts them at a special disadvantage and makes access to instruments of justice or political power much less likely (Shrivastava, 1996).

The aftermath saw several denouncements of close collaboration between the mining industry and politicians. Those denouncements would touch upon potential cases of bribery (Amorim, 2015), uncovering a very powerful structure coming from alliances between industry and politicians. The links between mining companies, the authorities, and corruption have been questioned before in several studies, as developing countries are known targets, given their often weak enforcement of legislation and the presence of private interests in public domains (Hilson, 2012). The private interest in public and political matters have hampered the establishment of democracy in several nations (Johnston, 1997).

Due to the pressure on the alliance between the mining industry and politicians, the atmosphere inside government offices was harsh. One of the prosecutors involved in the case affirmed he would have "to fight against the mining companies' power" and pointed out that local authorities were responding slowly to taking practical measures (Miranda and Lacerda, 2015). He also said that Samarco would make use of all the available resources to avoid punishment, and they would likely use their political and economic power influence to do so.

6. Discussion and conclusion

This paper has analyzed the influence of the local communities and activists in the aftermath of the Fundão dam disaster vis-à-vis how companies and authorities have performed activities connected to remedial and recovery efforts in the first 60 days after the burst. The results have evidenced the different kinds of responses, positions, and actions that took place. The controversies related to water toxicity levels and its associated risks fueled several independent efforts from different civil society actors, not only to engage in disputes related to the precise amount of heavy metals in Doce River, but also to bring

academics, activists, authorities, and companies into debates concerning trust and truth (Carolan and Bell, 2003). The most fragile part of a disaster relies on the victims, since they have been exposed to continuous social and environmental risks while trying to identify whom to trust and what to do to achieve better outcomes in terms of justice.

The slow response from the authorities and companies in providing the victims with access to remedies and safety, combined with the 'authoritarian' way Samarco conducted their first remedial actions in the disaster, underscore how the state has failed to protect the local community and to guarantee that remediation measures were efficiently taking place. This power imbalance has opened up a window of opportunity for several different stakeholders to get involved in the political arena and dispute the reasons and outcomes for the disaster according to their interests and frameworks. That can potentially trigger realignments of power and participation in the environmental arena (Clark, 1998). Academics, the national and international media, social movement activists, independent journalists, NGO members, and others have published a substantial amount of information that has led to debates and has incited further disputes. It is hard to grasp whether activism affected the results in the aftermath, and if so, to what extent. However, it is clear that activists have changed the aftermath's political dynamics. That means that activists' actions have demanded counteractions from the companies (Hanna et al., 2016) and have thus changed their strategies and courses of action during the aftermath.

Besides that, activists' efforts have also worked to widen civil society's overall knowledge about the mining industry in Brazil and its implications. For instance, the reports and denouncements about corruption and bribery have exposed how fragile victims are when facing the power imbalance against companies, and also by implicating that mining companies and the government have similar interests and have been aligning them in potential corrupt ways. Indirectly, that action challenges the political dynamics, since it may also have prevented powerful actors to 'freely' exert their power without considering the consequences.

The increase of knowledge and awareness about the mining industry has societal value in general, but in addition, social movement organizations have worked on capacity building in local communities living near to mining operations and logistics by giving a voice to locals, mobilizing them at the local level and, to some extent, representing them when it was needed. This mechanism also works to challenge and alter the dynamics of politics in the extractive industry by pushing and shaping the mineral debate. The involvement of activists in the dispute indicates that their voices are no longer being ignored.

The research results allowed us to compare Brazilian and other mining disasters. Similarities were found in terms of: the companies' first responses to denying their responsibility to the disaster in order to protect their reputation and technical expertise, usually ascribing it to 'natural' circumstances; the UN's involvement in pressuring companies and the government to take more efficient actions; long processes during the aftermath, taking usually years to be completed and full of corporate power demonstrations (and counteractions from activists/victims); the disaster reasons and consequences usually associated with insufficient regulation and/or monitoring processes; critics from stakeholders about how preventable the incident actually was; and the learning curve coming from those engaged in such disasters. The awareness and knowledge about the mining industry and its consequences thus expand to a wider group of stakeholders after a mining disaster.

Some other implications can be drawn from the current case study. In line with other crises and disasters, the Fundão dam failure occurred after a period of increased mineral demand in the early 2000s. It could be considered part of a cycle present in some organizations that ecompasses expansion, contraction, and uncertainty, or boom, bust, and chaos. During the contraction phase, companies would cut back on financial costs, with potentially severe consequences for safety (Shrivastava 1996).

Combined with this is the whole socio-economic and political context in Brazil. Industrial crises evolve and change in form and content (Shrivastava, 1996). The Fundão dam failure started as a local issue, very quickly achieving global attention and proportions. It began as a social and environmental crisis, becoming a legal and corporate one, and ultimately also highlighting economic and political fronts.

The socio-political context is where community recovery and transformation takes place in the long-term post-disaster scenario. That is why implications connected to policy-making efforts can be useful for future research. The policy is usually underdeveloped and contradictory in many cases (Mitchell, 1996), and such disaster experiences could represent a great opportunity to encourage the exchange of experiences among individuals affected by such disasters. The outcome from those experiences could enhance policies, planning, monitoring, and governance processes.

Another important implication coming from the Fundão dam failure is to understand in which context disasters and crises have actually happened and which specific features connected to those contexts have accentuated opportunities for the consequences of a disaster or for it to even have happened in the first place. In other words, what are the aspects from local, national, and global contexts associated with the Fundão dam failure that could have potentially influenced the reasons for the disaster and its consequences?

Policy-makers should pay attention to the following relevant features when they are present or combined in a context connected to tailings dam risks and impacts: a) communities with high economic and political dependence on the extractive industry, therefore with high social and economic vulnerability and a propensity for slow recovery from a disaster; b) poor communities near to mineral exploration and logistics sites, since those are often underrepresented or are represented by intermediaries (i.e. NGOs and activists) in policy arenas and are most likely to be among the victims of irresponsible mining operations (Newell, 2005); c) countries with a history of weak natural resource governance, which have difficulties reinforcing the rule of law, and have indications of flaws in checks and balances (corruption), since this scenario could mean disasters are more likely to happen and impose several challenges to their recovery; d) open pit mining operations during bust phases, where financial restrictions have often led to threats to safety in the past.

Because of the Fundão disaster, different stakeholders connected to the mining industry decided to take action, such as reviewing tailings dam procedures, in order to improve their current operations and prevent future failures from happening. For instance, the International Council on Mineral and Metals (ICMM) announced a global tailings management review on "storage facilities standards and critical controls" (ICMM, 2015).

Managers and other business stakeholders should also start considering review CSR processes, as well as other tools to manage the social and environmental consequences of business that reflect uneven relationships of power (Haalboom, 2012). The history of recent industrial disasters shows us that in developing countries in particular, companies are failing to remedy the incidents they have caused.

Finally, disasters like the Fundão dam failure are making communities and activists more aware of the consequences of the extractive industry – environmentally, socially, and politically. Protests against the industry can enhance the quality of democracy (Arce, 2016). However, these bottom-up efforts are not sufficient in most cases to influence the policy-making and business decision arenas. That is where change must happen primarily, and where it will have a greater chance of effective transformation.

Declaration of interest

None.

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MARIANA GALVÃO LYRA

This book contributes to scientific discussions on mining and society by seeking conceptual bridges across political-ecologically oriented studies and the theory of social movements. It sheds light on the key challenges faced by groups fighting for more environmental justice in mining conflicts. It opens up avenues to consider the relevance of activism in mining discussions and decisions, and, especially, to consider the quality of public participation in mining industry-related processes.

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