POLITICAL ECOLOGY OF MINING IN COLOMBIA

The Expansion of Neoliberal Coal and Gold Mining

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Mirko Lukas Knisel

Student Number: 20161620

Characters: 121.688

Abstract

The increasing demand for raw materials for the capitalist core has been a central key to Marxist ecology alongside its assumptions about the metabolic rift, and the implication of the political economy of extractivism has brought about. After the debt crisis of Latin America in the 1980 and 1990s, a set of neoliberal adjustments were suggested in return for credits. These policies aimed at privatizing and deregulating industries in those nations and were a tool to include these countries in the global capitalist order and expansion.

With the commodity consensus in Latin America, the main driver for national development was the extraction of natural resources. Colombia, in 2001, opened the country for foreign direct investment and multinational companies to extract the existing coal and gold in the country. Many policy and regulatory changes accompanied the new mining code that has also changed the balance of profits, as taxes and royalties were lowered, in order to increase the attraction of Colombia as a mining destination for foreign capital.

Despite the long-standing democracy, many historical issues that have been unresolved, as well as social tensions between communities and the government, were not addressed, thus increasing the social tensions within the new areas of extraction. The government sought to use the new extractive sector as mean for development. However, tensions have grown due to the increasing accumulative strategies that foreign companies have been using as a mean to gain titles for mining areas. While the production and power of the extractive elites grew, these historical conflicts are being exacerbated.

While the production and exports rose significantly until commodity prices leveled as of 2013, within the rural communities the impacts did not bring the promised development. On the contrary, the historically marginalized groups were forced to leave their lands due to various regions — a wave of accumulation strategies by the extractive companies in-sighted violence and social unrest throughout the country. Employment levels in the sector have been stagnant despite its intensification, and many lost their means of production due to a plethora of issues, mostly of socio-environmental nature.

Especially the socio-environmental impacts of the large-scale mining throughout the country forced communities to leave or have resisted the expansion by protesting against the coercive

methods used by the companies and its proponents within the government as well as the ensuing degradation of the delicate environment that hold coal and gold reserves of the country.

The country has gone into a cycle of violence and mobilization of forces, both from the elites as well as the environmental and communal opposition. The development model through extractivism, especially with the alliance with foreign capital, has turned into an unsustainable model that has deepened the tension and increased the inequality within the rural mining areas.

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1 Introduction

With its origins in the late 1800s, the industrial revolution had sparked unprecedented growth, coupled with a ever-rising demand resources to meet the needs of the expanding production. However, it was the post-World War II era that saw a global rise in production, that by the 2000s, had reached almost the most remote places of the earth- on the surface, the air as well as the subsoil. Despite most of these industries having been in existence beforehand, an era of large-scale activities was rung in. Between 1945 and around 1975, it is estimated that humanity had produced more in the timespan before 1945. (Brand *et al.*, 2016)

With increasing demand for minerals, fossil fuels and many other materials necessary for global production, capital and almost simultaneously for exploration, extraction, and transportation had become cheaper. Technological advancements made drastic changes as distance, location, as well as the number of potential buyers (national and private sector), grew rapidly. With the end of the Cold War as well as Chinas increasing economic importance during the last decade of the 20th century, increased the demand evermore. (Borras, Franco, *et al.*, 2012)

Politicians, as well as large parts of academics and scientists, most specifically those who found economic growth as central to prosperity, welcomed these developments. The question of resource depletion and alongside the impacts that the capitalist expansion had were side-lined for decades. Whilst the core industrial countries (United States, United Kingdom, Germany, and France to name a few) grew exponentially economically, those in the periphery, in other words the underdeveloped, often formerly colonized countries sought to gain from the technological advancements and to becoming economically stable countries, as many of those, historically had suffered massive crises in the past. (Borras, Kay, *et al.*, 2012) The opportunity many of the governing entities (governments, military dictatorships alike) grasped at was the to use its, in many cases adopted through colonization, role as a supplier of its abundant natural resources for the growing increasing global demand of these. (Galeano, 2018)

Playing a central role in these past developments are most Latin American countries. The continent, besides its vast cultural heritage, has been widely known for its abundance of untapped natural resources. Unsurprisingly countries such as Brazil (timber, uranium, and gold amongst others) and Venezuela (oil and natural gas) are listed among the wealthiest countries, if not the richest concerning certain countries.(Boumphrey, no date)

From 1990 to 1997, while global investment in mining exploration increased by 90 percent, in Latin America it increased by 400 percent, and in Peru, it increased by a remarkable 2000 percent (Banco Mundial 2005). Between 1990 and 2000, the region's share of overall global mining investment increased from 12 to 33 percent. (Bebbington and Bury, 2013, p. 15)

Colombia has had a past that historically and temporarily been targeted for corporations for its untapped resources. After the commodity price spike as of at the turn of the century, elite s from business and politics increasingly proposed using the resource wealth in order to finance the development objectives of the administrations. As of that point, this paper will analyze from a political ecology perspective, what the impacts of this resource-driven development plan have been. How has Colombia developed economically, socially as well as politically? Due to the nature of extractive industries, the paper will also analyze the question what the social-ecological impacts have been in areas with increasing activities.

The following problem formulation will be used to guide this paper:

From the perspective of political ecology, what has been the impact of resource-driven development within Colombia since 2001 been, including those in political, economic, social and environmental terms?

How has political influence and the capitalist elites influenced the policy decisions from 2001 and onward and what have the impacts been?

The next section will highlight some of Colombia's history concerning extractivism and class struggle. This will help understand the contemporary setting as well as should the issues that arise through the resource development.

2 Colombia's History from Colonialism to the Commodity Consensus

As for many Latin American countries, it is essential to understand some of the key historical developments the geographic location that encompasses the nation of Colombia today. As known throughout the continent, the history of the continent has been filled with various episodes that included violence, dispossession, and repression, that until today is still deeply embedded within many societies and indigenous groups throughout Latin America. (Galeano, 2018) According to Jasmin Hristov, as she states in her book *Paramilitarism and*

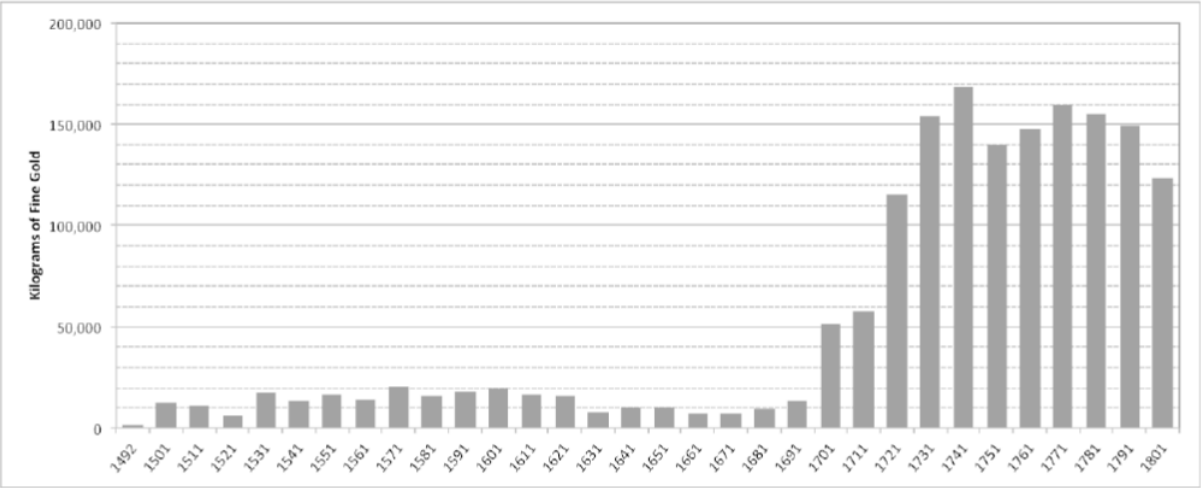
Neoliberalism, "violence has been an important and often decisive social process in the structuring of Colombian society."(Hristov, 2015, p. 2)

While the conflicts did not start with its colonization in and was present amongst the different tribes and civilizations inhabiting the continent including contemporary Colombia, this section starts with the colonization, or also known as the Spanish conquest for the "New World" which took place in the early 1500s. For the Spanish colonizers, the territory of modern-day Colombia was of special interest, not only because of the fruitful land but since it held the richest gold-fields. (Brown and Johnson, 2012) The purpose of the subsequent sections is to give an overview of how Colombian society evolved, with a primary focus on how its wealth of natural resources shaped it and is deeply intertwined in the nation until this day. (Hristov, 2015)

2.1 Colonialism and Origins of Class Formation in Colombia

As Hristov also points out, that the different periods that Colombia had gone through in the past, each "represents a formation of new social forces" alongside the "increase[ing] importance of violence and repression."(Hristov, 2015, p. 61) The first period that this section will highlight is that of the colonial era, as mentioned afore, from the 1500s up until 1810. This period in Colombia's history is filled with violence, the conquest of indigenous lands and the imposition of Spanish rule throughout the area. Whilst not going into too much detail, the focus is on how the natural resources formed today's state as well as how this period shaped today's class composition within the country. Figure 1 shows alone the gold production from the "New World," with the majority originating from Neuva Granada.

Figure 1: "New World" Gold Output from 1492 to 1810



Source: (Brown and Johnson, 2012, p. 56)

Some of the central themes during the colonization was the control over the resources (gold and other minerals as well as agricultural land) using violence and suppression. This suppression came in form, similarly witnessed in various other Latin American countries under colonization, the forces redistribution efforts by the Spanish crown, that lead to numerous indigenous and poor stripped of their lands. This social control imposed by the Spanish Crown was marked by inequality, exploitation, and exclusion. The abundance of resources configured the productive forces the extract as much as possible in order to gain the wealth. Individual, loyal to the crown, received large land titles. However, the large *haciendas*[1]required a larger labor force. Simultaneously, the minerals needed to be mined. This heavy reliance on laborers had grave impacts on the indigenous population at the time.

The introduction of *encomienda*, a policy, which formally enslaved indigenous people, forcing them to work in mines. This became the start of the decimation of the indigenous populations throughout the country. Through the forced disintegration of the communities, birth-rates dropped. Additionally, various small wars and uprisings, as well as European diseases, further took its toll on the population. This had not gone unnoticed by the crown as they stopped this policy and abolishing indigenous slavery. In order to protect the labor force, indigenous were allowed to engage in independent subsistent farming on *resguardo*. However, the powerful local elites, the Spanish-Americans, administer[ed] resguardos independently from the Spanish crown by lumping the population from several resguardos." This forced many to work on the

[1] Spanish word for large estates

larger haciendas, in slave-like conditions as the land designated was too scarce. (Galeano, 2018)

While this curbed the diminution of the indigenous population, the elites faced labor shortages. This shortage leads to another significant development for Latin America and Colombia. The introduction of African slaves was to solve the chronic shortage of laborers for the mines and plantations that had emerged throughout the region in order to cover the labor shortage. The 16th and 18th century brought about a consolidation power and land-accumulation by the elites, mostly Criollos which were of Spanish descent but born in Nueva Granada with highly capitalist tendencies. This elite, still relevant throughout the continent but also in today's Colombia, is known as the *Latifundio.* The relevance of today is the still present structure of the *latifundio-minifundio* structure.(Brown and Johnson, 2012; Hristov, 2015)

The *minifundio* group, composed of rather small-scale artisanal or peasant farmers, consisted of *mulattoes* (individuals of African-European ancestry) and *mestizos* (indigenous and European ancestry), the latter being commonly plantation workers, whilst the African slaves were forced to work as miners as well as other related activities for the extraction, transport, and handling of raw materials destined for Spain. (West, 1952) This time period represents the first accumulation phase of land and resources, mostly through the appropriation of originally indigenous lands within Colombia alongside the foundations of the class structure that is still evident within the country today, as this part of its history shows "patterns of class formation, conflict, and the evolution of the state."(Hristov, 2015, p. 61)

2.2 Independence, *La Violencia* to the Integration into the World Capitalist Economy

This section will contextualize some important developments of Colombia from its independence towards the first fundamental steps towards the integration into the world capitalist economy, through an intensifying model of development through the extraction of natural resources. Additionally, it will highlight the beginnings of another sector within mining, namely coal. Within this time frame, the theme of the power struggle over land, resources and political as well as violent suppression and repression will highlight another step into the modern-day Colombian mining practices, framework, and power-structures in place.

Colombia, under the leadership of Simon Bolívar, gained independence in 1819 after a fierce war that had lasted almost a whole decade. It was then, in Colombia's capital of Bogota, where the Republic of Gran Colombia (encompassing Colombia, Venezuela, Ecuador, and Panama)

was proclaimed. Given the vastness of the area and the different movements within Gran Colombia, the Republic shortly after separated, namely Venezuela and Ecuador. Shortly after in 1830, Gran Colombia dissolved which then shaped Colombia's contemporary borders. Nueva Granada, the colonial name of Colombia, was turned into the United States if Colombia.(Aviles, 2006; Hristov, 2015)

More importantly, however, were the internal mechanism that arose with Colombia during that period. While mining was still being undertaken, mainly for gold and silver, the elites consolidated their power within the political arena within Colombia. At the time, these elites mostly were involved in agricultural activities. Therefore, the aim of the elites, predominantly those that formed under the colonial era, seeking to expand their control of land for their estates, not only aiming to increase their wealth through increasing production but also this resulted in increasing amounts of peasants being deprived of their lands. While the positive effect for the landlords was increasing the availability of laborers, the number of peasants not finding work on the estates increased, increasing the movement of landlessness within Colombia.(Aviles, 2006; Hristov, 2015)

This development was underlined through the growing capitalist movement; the pushed the ideas of neoclassical economic ideology. This push meant that land that were formerly reserved for the indigenous, which were given to them by the colonizers in the form of *resguardos.* In 1873 the protection of these lands was protected and legalized. This resembled "Marx's description of how in eighteenth-century England legislation was a key instrument for the conversion of land into a merely commercial commodity, extending the area of large-scale agricultural production, and increasing the supply of free and rightless proletarians."(Hristov, 2015, p. 66)

These developments were the first signs of the capitalist system being introduced to Colombia, in which production, its increase, and effectiveness, were central. Indigenous, using the lands to sustain their tribes merely, were regarded as ineffective in the eyes of the emerging capitalist class. While many were displaced from their lands, they migrated to virgin lands all over Colombia, mostly within vastly forested areas, which shows how historically, the destruction of nature came to a push factor mainly caused by the capitalist elites. This clearing of land also was seen by the capitalist class as increasing its value, rather than diminishing it through the loss of its biodiversity. Also, during those decades, landless that had migrated to the aforementioned virgin lands did not gain ownership or the titles but instead were sharecroppers.

The ownership right mainly was gained by the existing elites as well as incoming immigrants, mostly Europeans. The landless peasants and *minifundistas* remained in precarious positions. This also underlines the commodification of nature within Colombia, as mostly crops, so-called cash crops were planted and destined for exports to the capitalist core which during that epoch was mostly the found in Europe.(Brown and Johnson, 2012; Hristov, 2015)

The decades after independence were rife with internal conflicts even civil wars, that closely were related to the volatility of demands in the agriculture good that were exported. Despite these instabilities and attempts by oppressed classes in rural areas to counter the rule of the elites, the authority never seized, and during the time the consolidation of the elite classes continued to progress throughout Colombia. This era within Colombia's history can also be described by the when the foundation for the capitalist mode of production was laid, as the agricultural sector primarily, became even more concentrated and mechanized. As noted before, this also enforced more control of the land, displacing most of the rural populations into remote areas in the land.(Brown and Johnson, 2012)

While the Colombian government cemented its stability over the next decades, the introduction into the global capitalist system was further pushed at the turn of the century. Under the conservative government, the agricultural sector was developed in order to become more relevant for the export market and to encourage foreign investment. As in many countries, the mechanization and introduction of large-scale farming with the aim to export to the core-capitalist countries were increasing during that time. Also, up until the 1950s, the capitalist elite did grow in size as in diversified into the various sector. This sets the scene for increasing inequality within the country, as missing subsidization for small-scale farmers and other sectors, including the artisanal gold miners, caused these parts of the economy to get into drastic problems.(Hristov, 2015)

2.3 Neoliberal Reforms to the Commodity Consensus

The first important aspect that began in the 1980s was another formation of a capitalist class. While in the past decades, as mentioned above new formations of classes grew through the primitive accumulation phases. What ensued then, was the introduction of the narco-capitalist elite, that would become infamous for Colombia’s history but also had major impacts on the economic sectors at the time. With the ensuing conflict between the state, cartels as well as growing number of rebel groups as a form of resistance within the same timeframe. Not only

was the conflict apparent, but in order to move from illegal business, large amounts of money was pumped into the legal economy, ranging from land, mining, as well as industry. This heaved many of those linked with the cartels into key political positions. This also created a synergy of economy and violence within the country at the time.(Bury and Bebbington, 2013)

Additionally, from the 1980s onwards, Latin America tumbled into a fierce debt cycle. Throughout the continent, the government failed to answer the crippling effects of the high debts that the nations were facing. The former strategy of import substitution industrialization (ISI) had failed in most of the nations, including Colombia. The aim to generate wealth and have the famous trickle-down effect within the country had failed. (O'connor *et al.*, 2010) This section will outline the processes that will lead up to the point of the analysis, the 'commodity consensus.'(Svampa, 2015)

After failures to counter the debt cycle, developing nations, a lot that held the much-needed resources to fuel the economies of the capitalist core, were offered a set of policies which in return would give them access to credits. This was mainly undertaken by the International Monetary Fund. These policies aimed consolidated the neoliberal ideology. For Colombia, this meant opening up the country to foreign capital. Privatization of state-run companies, mostly those active in extractive industries, reforming law and codes, such as the mining code, were amongst those policies. Furthermore, restrictions for foreign capital were lifted, and access to natural resources was given to the multinational companies. (O'connor *et al.*, 2010)

At the same time, the government promised economic upheaval through the proposed policies. This has been observed in many cases which have shown the positive effect on the economic growth figures. However, the other aspect that was brought up was that mining through multinational companies (MNCs) showed the appropriation of the profits "by firms and national governments while workers and communities bear the cost."(O'connor *et al.*, 2010, p. 88) Furthermore, through the increasing capital intensification in the sector through "globalized mining and technological innovations are associated with job loss, the intensification of work-tasks, reliance on migrant labour, and social and family disruption" as well as an increase in "political violence and displacement […] the deterioration of health through pollution and waste spills."(O'connor *et al.*, 2010, p. 88)

Despite some cases known, Latin American countries turned to their natural resource wealth in the wake of international price spike of raw materials and simultaneous increasing demand

for consumer goods in both core-capitalist countries as well as emerging economies such as China and inclusion of the former Soviet states after the collapse of the communist regimes. Alongside the newly imposed neoliberal strategies that were being implemented due to the loans that many Latin American countries received, a wave of resource led development swept the country, which had become to be known as the "commodity consensus." According to Maristella Svampa, this consensus was "the incorporation of Latin America into a new economic and political-ideological order," primarily based on "the international boom in prices of raw materials" and the increasing demand for goods in the core countries.(Svampa, 2015)

For Colombia, had several impacts in the 1990s. As the consolidation of the elites and the evolving formations throughout its past, as pointed out in the past chapter, a new wave of capital and class tensions would go through the country that was still amidst various internal armed conflicts. These decisions, specifically for mining, in the changes in the mining legislation, or mining code, that would spark an increase in capital and extractive activities, from which the governments promised prosperity and development.(Hristov, 2015)

The next section will discuss the methodological approach to this paper, followed by the theoretical framework for the paper.

3 Methodology

3.1 Research Strategy

The research in this paper will be conducted by using a deductive method. The assumptions that are proposed by Political Ecology used in this paper will guide the inquiry through a materialist approach. These assumptions include assumptions based on Marxist ecology, which include social, and environmental factors, alongside those of the political economy perspective. In order to allow a more valid and accurate perspective on the impacts of Mining activities in Colombia, both qualitative and quantitative empirical data will be utilized. By using the triangulation method, a degree of credibility to the research included in the paper can be achieved.

Due to the long and complicated activities, due to changes over time, the paper will be narrowed down by focusing on the post-Commodity Consensus time frame, 2000 to most recent available data at the time of collection, as well as examining the fields of gold-mining activities and coal mining, two of the most significant fields of debate in Colombia. In some instances, data before the data as mentioned above may be employed to visualize trends in order to compare specific data, if necessary.

The theoretical framework will allow assessing the development over the past decades in Colombia, thus allowing to prove or disprove the assumptions included in this paper. By using fundamental assumptions proposed by various authors from the academic field, the paper will look at political, social, economic as well as environmental factors that are related the mining development of Colombia.

Lastly, as mentioned above, all theoretical assumptions used in the framework have been obtained by academic literature. No new theory has been constructed based on the data.

3.2 Research Design

As mentioned in the section before, a wide range of both qualitative and quantitative sources from various databases will be used. The databases include numerous academic articles and research papers, books, governmental and non-governmental sources, publications, news articles. Data is primarily obtained from official local Colombian governmental as well as intergovernmental sources (OECD, CEPAL). Alongside those, data from non-governmental

sources, social movements websites, as well as data publicized by the various organization are included. Finally, both primary and secondary sources will be used.

3.3 Limitations of Data

This paper uses a plethora of resources, mainly English and German. Despite this, the scope is limited as a lot of data and information has not been translated to the Spanish language. The language barrier restricts the scope of analysis and the available data. To counter this, data from various sources were used to compensate the missing data if relevant.

Furthermore, difficulty is the availability of the most up-to-date data for various points of analysis. The included either missing data (not being recorded at the time for example) or data not yet published. The lack of data includes specific data on environmental issues such as land-use change or mining titles. Additionally, some of the data were incomplete, such as employment data. This also is one of the issues for social indicators, especially in rural settings, where data collection may not be as reliable or lacking at best. Due to secluded nature and vast geographical setting of Colombia, data samples from individual studies have been taken to showcase some of the impacts analyzed in this paper. This includes quantitative as well as qualitative data.

In the case of environmental indicators which are often still relatively new and mostly dependent on the governance and oversight, which in Colombia's case is seen as one of the critical issues. This also includes many of the illegal activities within the extractive sector, such as data on land grabbing and forced displacement. Various sources state estimates. By using several sources that analyze similar things, an attempt to create a wholesome and credible analysis of the issues.

3.4 Research Outline

In order to asses the political ecology of mining in Colombia, the analysis section will set off from the integration of Colombia in the transnational neoliberal order, specifically with the 2001 mining code, followed by critical changes that are relevant to the socio-environmental issues occurring through the expansion of mining activities. Therefore, the sections will firstly look and the economic and political arena of mining in Colombia. The section will focus on the political decision that has been undertaken under the umbrella of the resource-based development of the country. Alongside the assumption of primitive accumulation and market

dependence, it will also analyze the role that different actors, political on the international and national stage have had in the process. Lastly, a look at the assumptions knows as the metabolic right and treadmill of production will be assessed by looking at existing data.

Following will be the social impacts related to the expansion of mining activities. Within this section, two case studies will be used to highlight different aspects of marginalization, violence, exclusion, and conflict. This will be used to gain a picture of some of the cases, and there are many within the country. The section will also highlight the resistance come from the local communities and actors. It will look closely at the struggle that various communities are undergoing due to the inclusion of transnational capital and MNCs within the country.

Lastly, a look at the environmental degradation that is taking place through the mining expansion will be assessed. The assumption of political ecology will be adequately assessed when it comes to the environmental issue that has been created through the mining activities throughout Colombia. This will also include the assumption of the commodification of nature within the country.

This design is to assess, whether the development model imposed by the Colombia government can be regarded as a sustainable model or whether externalities and costs of the mining activities are transferred on to the local communities.

3.5 Contextual Limitations

The paper includes some of the policies and regulations surrounding mining. However, not all regulations are included such as some environmental policies that are in place. They are not discussed in detail in this paper.

Furthermore, the involvement of international organizations and their influence on international mining and the legal framework of international mining are not included in this paper.

Lastly, the current peace process with rebel-militias and their impacts in the last two years are not thoroughly examined due to the lack of data on those regions. Therefore, some changes in policy due to the new situation in the country are not accounted for.

4 Political Ecology

This chapter will discuss the origins and composition of the discipline of political ecology as well as discuss the assumptions that various academics and contributors, ranging from various disciplines have made. Furthermore, the assumptions that will be utilized for the thesis, along with their dynamics will be discussed.

Since Political Ecology encompasses a vast number of branches and disciplines within the existing literature and is adding on, for this paper a Marxist ecology approach will be used which will be examined and explained in the following section. At the core of Marxist ecology lies the class relation and its intersection with how political power is used and how specific classes seek to influence it. This is combined with how resources are used and how the policies that are created, namely in the context of a resource development strategy, and who will benefit from these. Also, the question which bears the of corporate externalities (will be introduced more in-depth in the coming section) or costs that occur but are not accounted for. Lastly, the next section will begin with how the interaction between human activities and nature have become an interest to Marx and evolved in political ecology.

4.1 Capitalism and Nature

Between the 1970s and 1980s concerns about the state of the environment in light of increasing industrial activities in large parts of the world brought about movements in different parts of the world. Simultaneously, questions about how capitalism and the ensuing industrialization have been and will be affecting the environment saw the re-emergence of works that were, at the time of creation, disregarded or deemed as not relevant to the context as most works looked primarily at economic development and how to benefit from the industrializing production modes and globalization of capital.

The origins in the relations of capitalism and nature, dating back to 1866, deemed an era in which this relationship was given little attention. Despite this, it was Karl Marx who "introduced the notion of 'social metabolism' (or socio-ecological metabolism)," a metabolism that described labor as a metabolic relation between humans and nature."(Foster and Burkett, 2016, 1) However, both Marx's and Friedrich Engels were rather seen as critiques of capitalism, primarily the uneven accumulation of wealth and the labor-production relations.(Foster and Burkett, 2016) What caught the eye of many academics was that both

Marx and Engels did not explicitly see capitalisms nature regarding social relations and the formation of wealth, but also the nexus between capitalism and nature. In a correspondence between Engels and Marx, the former wrote:

> The working individual is not only a stabilizer of the present but also, and to a far greater extent, a squanderer of past, solar heat. As to what we have done in the way of squandering our reserves of energy, our coal, ore, forests, etc. you are better informed than I am. (Foster and Burkett, 2016, 1)

It was not only the quotes as mentioned above that showed the interest of the two authors in the how capitalism impacts the environment, but also other renowned authors and scholars. Namely Rosa Luxemburg, in her analysis of Marx's works, pointed out the importance but also the immeasurable field of application that went beyond what socialism and its movement stood for.(Moore, 2011)

Additionally, Luxemburg predicted these assumptions would resurface at "later stages, as the historical contradictions of the capitalist system matured."(Foster and Burkett, 201, 1) In additions to the lack of attention these relationship received at the time was the wide-spread theories of social sciences and how these systems between nature and humans-systems played out, which will be summarized in the next section.

4.2 Roots and Emergence of Political Ecology

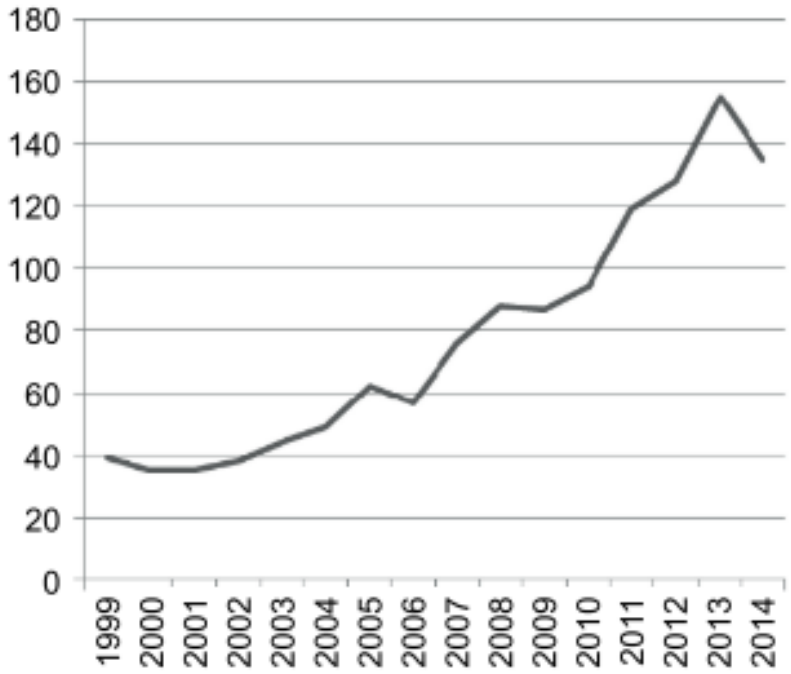
To assess and understand the discipline of political ecology, the roots that would form the contemporary understanding of political ecology have to analyse. As mentioned in the section above, the impact of capital and its general drive to dominate nature to reap profits of from nature and would start causing damage to the ecosystems was shelved at the time due to the lack of understanding of the impact of industrialization on nature. However, at the time of the correspondents above between Marx and Engels, prevailed the notion of a superior race, namely that of the Euro-American race. At the time, the normative approach to the study of geography and anthropology "were tools of social and political control [that] reproduce[ed] the political order…" which decades on would be "challenge[d] and undermine[d]" by a more "critical human-environment" approach. (Robbins, 2012, 26) These approaches almost unanimously assumed in general that "nature [is] a determinant, fixed, and unidirectional influence" while the "complex influences of humanity upon non-human systems were lost altogether."(Robbins, 2012, 27)

Based on primarily but not solely on the assumptions made by Marx and Engels, the discipline of political ecology emerged. Although the idea of analyzing how social forms and human organization impact and interact with the human environment, it was in 1957, namely Bertrand de Jouvenel that coined the term 'political ecology' (formerly in French *Écologie politique*), later used in its English formulation by Eric R. Wolf in 1972. Due to the complexity and different streams within the field, however, it is essential to recognize the different disciplines that further elaborated on the subject. The interest of how societies, government and human organization (i.e., agriculturally based societies, MNCs) interact with the environmental setting has caught the attention of academia from various fields. This ranges from anthropology, forestry, development studies, environmental sociology, environmental history, and geography as well as other fields. (Robbins, 2012)

Due to political ecology being a discipline that brought about many different strands, one of the most important pieces of literature, according to many contributors of PE, was *Land Degradation and Society*, written by Piers Blaikie and Harold Brookfield in 1987. The author's defined political ecology as a combination of "concerns of ecology and a broadly defined political economy." This combination allowed to encompass "constantly shifting dialectic between society and land-based resources, and also within classes and groups in society itself." (Blaikie and Brookfield, 1987, p. 17)

The interest in Political Ecology has risen significantly in recent years not only but significantly due to the increasing awareness of climate sciences and new knowledge on the issues surrounding the environmental changes and the subsequent impacts. Figure 2 shows the growing interest in various journals. It must be noted, that the statistic does not include all journals.

Figure 2: Articles Published with the key word "Political Ecology"



Source: (Batterbury, 2015)

The increasing interest has brought out much literature in the field, therefore, with the above mentioned, definition, the next section will look at the different assumption and theories that will be analyzed in Colombia's context and its mining sector.

4.3 The Capitalist Mode of Production

One of the significant social metabolisms that Marx situated in ecology was the capitalist mode of production. Therefore, using the critique of capitalism, namely the strand of political economy is essential in the analysis. Capitalism itself is a system that grounds upon the notion of an ongoing and expanding accumulation of capital. Historically this had taken place within industrialized countries themselves but was outsourced into countries across the globe in order to fuel the endless demand for growth.

Marx characterized this process as one in which "money capital is transformed into a commodity (via production), which then has to be sold for more money, realizing the original value plus an added or surplus value." However, not only is the constant "motor force" of accumulation of capital but in effect, it is intensified by increasing competition of actors within the system alongside a centralization of capital. The forces thus heighten the demand for

resources which are extracted from what nature gives, as it fuels industries as well as produces the commodities for markets.(Castree, 2015)

This but deploying the criticisms of the capitalist system within PE, a more wholesome picture can be made by the effects of development objectives and how these are realized. Michael M'Gonigle (1999) explicates this as "Classical economic analysis is based on 'objective' monetary valuations, primarily taking into the account the basic supply and demand paradigm."(Michael M'Gonigle, 1999, p. 12) Additionally, it can be used as an analysis of valuation and wealth creation. This rather technical analysis disregards the ecological degradation and pollution, while the exploitation of natural resources increasingly threatens "to undermine natural cycles and processes that aid in the regeneration of ecosystems."(Clark and Foster, 2010, p. 145) In essence, M'Gonigle adds that within neo-classical economics "the range of false assumption is extensive." These range "from the market's philosophical foundation in limited assumptions of individualism" as well as the behaviour of self-interest, as well as lacking information on the behaviour of markets, which includes the "inability to internalize environmental costs and other negative externalities."(Michael M'Gonigle, 1999, p. 13)

These "other externalities" will be further discussed in the following sections, which will give the ability to make a nuanced approach into how the forces are impacting global, regional and national as well as local forces at play. Firstly, the commodification of nature will be discussed alongside market dependence as these two were crucial elements that Marx saw vital processes that lead to ecological crises as well as the social relations they produce.

4.3.1 Commodification of Nature

One basic premise that exemplifies the relation between nature and capitalism is that of the commodification of nature. The process of commodification means that human takes control over nature and disregarding the systemic character of it, meaning that it is seen as a means of production rather than an ecosystemic entity.(Bermejo, 2014) The redefining of nature is the core of mercantile logic of profit maximization. This logic, however, can be seen as a contradiction, as within economy, a "good is an asset produced for being sold," which in nature case does not happen, as it was not produced by human but rather natural resources, at first were created over millions of years.(Bermejo, 2014, p. 23)

The impact that this process has is extensive, depending on the extent to which the producer or landowner is linked within the capitalist markets. As commodities and the prices for them became directly related to economic fluctuation alongside the increasing production and subsequent competition, many small and formerly sustainable landowner were forced to increase output – through various methods such as fertilizers, monocultures or GM-crops – and subsequently maximize the exploitation of their land, a process that is called the "simple reproduction squeeze."(Peet, Robbins and Watts, 2011, p. 25)

Economists argue that due to restraints implemented by environmental organizations, state regulations and unions are the cause of the environmental destruction and that without them, the market would regenerate nature through new technologies and inputs within agriculture. Ecologists, however, have not seen the markets ability to protect the environments but rather seen the commodification of nature as a contradiction to environmental protection.(Peet, Robbins and Watts, 2011)

The concept of commodification is used to highlight the "political dimensions of the processes through which physical landscapes are carved up and allocated to different uses, as well as the legal and financial structures that support these processes."(Paulson, Gezon and Watts, 2003, p. 213)

4.3.2 Market Dependence and Primitive Accumulation

One of the key elements of the capitalist systems which has an important and significant impact on the is that of the dependence on markets. This concept can be defined as all economic actors within the system and that they are subject to competition. This dependence, as above-mentioned leads to producers forced to producing a surplus to keep their means of production as the process also involves the dispossession of the peasantry of their land, "thus enforcing the sale of labour power to capital."(Tilzey, 2018, p. 30) This spiral of accumulation in order to produce a surplus and for the expropriator of land usually in set through the competition of other capitalist agents. For those disposssesed, the loss of the means of production meant that in the end, the sale of their labor for capital is the last means of survival.(Peet, Robbins and Watts, 2011) The process described show the expansionary and destructive dynamic that capital and the ensuing competition that the market forces create has for the peasantry and the environment. As Tilzey describes market dependence and the ensuing accumulation:

> It is this condition for survival, founded on these historically specific social-property relations, which creates the drive to maximize profit, to accumulate, to compete with other capitalists, and to keep social and environmental costs to a minimum (i.e., to 'externalize' these costs)(Tilzey, 2018, p. 30)

This process of accumulation of land, thus creating an increasing the concentration of land substantially, is a process that has been accelerating in the global South, as many face the loss of access to the means by which they supported their livelihoods. Once landless, many are forced to become wage-laborers, hence intensifying proletarianization. This has been deemed by many academics as the new imperialism in the global South and a force that can be deemed as the new form of colonization, through MNCs.(Robbins, 2012)

4.3.3 Metabolic Rift and the Treadmill of Production

One of the major foundations of ecology is found with within the 'metabolic rift' which under Marx was the known to be the "separation of social production from its natural biological base."(McMichael, 2009, 255) Furthermore, this separation is regarded as the basis for the international division of labour and simultaneously is further expanded through the accumulation by the agricultural capitalism and its development model.(McMichael, 2009; Tilzey, 2018) The `metabolic rift` is best understood through the process of capital accumulation and the subsequent "destruction of the human and natural conditions of production on which its economic advancement [….] is predicated."(Tilzey, 2018, 33) As a result of the advancement model, the resulting degradation (of soil, water and other pollutants) as well as destruction (natural resources, forest etc.) creates a 'crack' in the interaction (metabolism) between the society and nature, which "ultimately sever[s] [the] basic processes of (socio-) natural reproduction.(Tilzey, 2018, 33) Foster and Burkett (2017, 7) describe this 'rift,' intensified the expansionist-character of capitalism as the "…. alienation of nature."(Forsyth, 2003)

As a key element of Political Ecology, the paradigm was adopted by Marx as found that capitalism robbed the earth for profit while the costs of degradation and destruction were externalized, lastly burdening society and nature with the costs as these were "rendered socially invisible" due to the fact that these were outside of the accounting model of economic growth. (Foster and Burkett, 2016, 7) Additional to the costs of the accumulation process was that the fertility of the soil is being decreased by the intensive agricultural practices that further depleted the ground of its nutrients. This has increased over the decades, for one with the expansion of

the capitalist system but also due to increasing urban areas, in which fibers from agriculture were made to waste but not used to revitalize the ground. This subsequently led to increasing uses of fertilizers which however did not mend the metabolic rift, but rather caused other damages such as inducing toxins into nearby water sources. These tendencies especially were introduced in the global south, specifically Latin America and Asia, where vast ecosystems were and still are being depleted of their resources in order to gain resources such as lumber but to clear vast tracts of land to increase land availability for crops demanded by the capitalist centers. (Clark and Foster, 2010; Tilzey, 2018)

Of importance to the metabolic rift, regarding increasing its "rift," is the known as the treadmill of production. According to Tilzey, the "treadmill of production describes capitalism as an unstoppable and accelerating treadmill that constantly seeks to increase the scale of throughput of energy, food, and raw materials." (Tilzey, 2018, 33) This treadmill is a result of increasing competitive nature of capitalism to increase profits and the means of production through accumulation, which "exert[s] an ever-enahnced pressure on the earth's generative and absorptive capacities," thus leading to an ecological crisis.(Tilzey, 2018, 33)

Furthermore, in terms of treadmill of production, the technological advances in various extractive industry as well as other sectors, are intensifying their production thus increasing the degradative impacts on the environment. Alongside this development is the "uneven" burden of costs through this intensification on the working class, in terms of externalities that include social costs (labour, employment along with others) and environmental ones. In the social costs, be seen in terms of skilled labour, as investments look to replace the human labour, thus hampering the investment into training labour despite increasing profits. Julie Guthman describes, notably based on agriculture but applicable to mining activities, the role of the treadmill of production unfolds as follows:

> Another approach, referred to as intensification, involves improving the productivity of and/or value reaped from land already in production. Intensification has generally meant farmers' adoption of various yield-enhancing technologies such as higher-yielding varietals, heavy fertility inputs, pesticides to reduce crop loss, and labor-saving technologies such as tractors and combines.(Peet, Robbins and Watts, 2011, p. 53)

4.4 Degradation and Marginalisation

One of the key arguments that political ecologists make is that of degradation and marginalisation that is created through the forces within in the global capitalist system, and especially within the neo-liberal agricultural regime. Agricultural production in many cases often were a means of self-sustaining and at most, selling surplus to surrounding local markets and populations. However, through the increasing integration of local producers and products into regional and global markets, as predicated by Marx, a transition of these production systems in to the overexploitation of natural resource are the consequence. Often, and especially in countries depend on extractivist-based economies (i.e., most of Latin America), this usually takes place through state development or state intervention within local communities and the producers.(Peet, Robbins and Watts, 2011)

Therefore, sustainable and less exploitative practices become unsustainable due to the intervention, not only by the state, but increasingly through regional and multinational corporations. The unsustainability of these practices not only is found within the overexploitation of natural resources but also impacts the local economies, as poverty increases within those local communities. Furthermore, interventions, often times modernist development efforts that promise to improve productions systems (GM-seeds and technology) often lead to decreasing sustainability of practices as well as a decrease "in the equity of resource distribution." The above-explained thesis or degradation and marginalization is linked to two assumptions; the reversibility of degradation and producer margins under conditions of accumulation.(Robbins, 2012)

The first assumption, the reversibility of degradation emphasizes that destruction that takes place can only be repaired with a lot or even more energy and investment than initially put in once a certain threshold is reached. However, this analysis within political ecology is not uncontroversial. Due to the global changes in environments and naturally occurring extreme weather events, it is often difficult to section-out the environmental degradation through human-induced impacts. Therefore the following definition of land degradation will be applied, as it characterises "the substantial decrease in either or both of an area's biological productivity or usefulness due to human interference."(John and Lewis, 1995, 2 cited in Robbins, 2012, 107)

Based on the above definition the following measurement will be analysed in order to investigate whether degradation is taking place:

- Natural productivity of the land
- State of the biodiversity in the region
- Assessing the usefulness
- Creating or shifting risk ecology

The first of those listed above is best described through decreasing soil nutrients, changing salinity levels as well as the loss of surface biomass. This is complimented by the analysis of biodiversity, or rather the loss of it, due to human-interaction. The importance of biodiversity are the various ecological services it provides to regions that may have been subject to human interaction. However, declining diversity is central to long-term and serious sustained damages to land and the productivity of it. The third in the list, assessing the useful of land, can be more difficult due to measure. This also integrates economic and social measurement as well, as it tries to examine whether the land is managed in a way that societies are gaining from the purposes of what it is used for. This can then be summarized in to either creating of shifting the ecological risks. If taking the three above mentioned measurement (productivity, biodiversity, usefulness) together, the question arises whether the changes that have taken led to increasing vulnerability of the humans living within the areas impacted. In other words, "has the "level or location of risk [been] shifted onto vulnerable or disempowered populations."(Robbins, 2012, 110)

The above described degradation leads to social marginalisation. (Paulson et al. 2003). This marginalisation is additionally heightened through the expansion of MNCs who for the majority apply GM technologies, as "shifting political-economic power (or market share) toward a small number of large agro-food firms, the expansion of GM technologies will adversely affect the livelihoods of marginal farmers."(Peet, Robbins and Watts, 2011, 415) Through the extreme competition that marginal farmers face, in light of the increasing implementation of techonologies and GM crops, farmers are pushed either completely away from their lands or as Pier Blaikie, describes that:

> …. socio-political and economic marginality produces eco-demographic marginality, i.e., marginal people are, through the process of social allocation in the neo-colony, quite literally pushed into marginal places. (Wisner, 1976 cited in Blaike, 1985, 125)

Alternatively, extractivism, through accumulation by dispossession, renders the expropriated work force surplus to requirements from capital's perspective. Neoliberalizing extractive sectors, including mining, forestry, agriculture, has, through its symbiotic relationship with the disarticulated alliance, favoured and reinforced strongly skewed patterns of land distribution and production in much of the global South, particularly in Latin America and Asia, whereby agri-industrial producers, as a small minority, occupy much of the land and produce the bulk of export crops through the socio- naturally alienating techniques of market productivism (Kay 2006; Tilzey 2006; Weis 2007). As an outcome of such skewed land tenure structures, however, the majority of the rural population occupies insufficient land to meet its own food needs (the semi-proletarians) or has no access to land at all (the proletarians).(Tilzey, 2018)

4.5 Environmental Conflict & Exclusion

As land is accumulated and local farmers are disposed of their lands, communities and indigenous groups are faced with the question on how to survive and secure their basic needs without their lands. The dispossession of these lands and the arising situations for rural communities often face adverse opponents as the process of accumulation is undertaken through authorities, private corporation or elites within the giving country. This often leads to a struggle or even violent conflicts between the two interest groups.

These conflicts often emerge through the different development policy choices made with the aim of development. However, the access and responsibility over natural resources often stems on complex social systems with historical roots that are additionally characterised through division of labour and power. Additionally, the conflicts that emerge or that have been on-going for decades often draw upon the assumptions of class race and gender, which often generate the historical backdrop of development process, that in many cases has led to uneven development outcomes and increasing inequality for the vulnerable population.

Robbins explains that for an analysis of the social structure in regard to the access and responsibility, the examination of the following is necessary

> environmentally oriented development activities or conservation efforts necessarily includes a careful census of (a) who controls what, (b) who is allowed to decide about what, and (c) who is expected to do what tasks.(Robbins, 2012)

Through this analysis, the outcomes and how this outcome impacts different groups of interest within the resource in question is analysed. These decisions and how the groups are impacted often create or intensify the conflicts. Within this context of the decision made, also lies the question of how specific policies may be benefiting one side whilst disenfranchising the other, and furthermore, how those with access and responsibility over natural resources are held accountable for the hidden costs, coming from degradation for example.(Reid *et al.*, 2015)

The above-mentioned accountability come with the complexity of ownership, as these have "influence over trajectories and types of social/ecological change." This complexity can be partly understood by either who possess, uses, manages, controls the income and/or capital value of the land or resource. This differs according to the title of land, i.e., public, private, shared land (i.e., sharecropping).(Forsyth, 2003) However, the complete privatisation of land often has led to conflicts, production losses, and increasing inequality. This complete privatisation, promoted for increased efficiency and reducing transactions, as a result, marginalises the majority of communities within the areas as they are cut-off from their mean of production and subsistence. This conflict potential often arises from different types of user (i.e., small farmer vs. agri-business) or ideologies (economic developmentalist vs. rural communities). These are then intensified through policy decision that are made without the consideration of those politically marginal, as these often tend to be invisible to those making these decisions. Robbins also points out that there is "a tendency for regional or global environmental management efforts to become enmeshed in local struggles, especially when outside authorities change the condition in which people make a living."(Robbins, 2012, 203) These regional or global environmental management efforts are often countered by groups that emerge within these conflicts and struggles, who's role will be discussed in the next section.

4.6 Environmental Subjects and Identities

Many of the rural communities that are impacted through the forces of capitalism (accumulation by dispossession and degradation in this case) has brought about groupings that act as collective identities within the political resistance. This resistance, often emerging through the lack of land and the marginalisation of communities or groups, form in joint call for action and justice as well as political representation. These groups arise from the common ground, in which the way they create their livelihoods (i.e., farming) unites them and mobilizes them to counter the elites, political institutions, and MNCs. But not only does the loss of land or a change in livelihood systems bring emergence, often times the ensuing exploitation of

labour of those disposed or deemed landless bring together actors.(Peet, Robbins and Watts, 2011; Robbins, 2012)

These actors, giving their power and extent to which, they can oppose often depends of the network of hegemony that is found within the arena they are found. This hegemony dictates the development practices that are put in place and the "define what is normal."(Robbins, 2012) Robbins adds that:

> Hegemony is a condition of that normalcy, in which these expectations come to coincide with the interest of powerful actors ad agents. To whom value and benefits flow from thing the way they are (Gramsci 1973). In this way, power precedes knowledge, and the two are together conditions for truth (Focault 1980). (Robbins, 2012, 219)

Within the above explicated paradigm of what is truth lies another aspect that the resistance faces. As the latter hold a certain ideology and a collective identity, the hegemony, in other words, those that hold power and the mandate to it, often times attempt to redefine the complex nature into simple notions, in order to simply the governance of it, which in turns causes struggles and conflict against those that live within the complex systems.(Peet, Robbins and Watts, 2011) These simplifications are internalised by the people and actors within the institutions, the, in turn, enforce the scripts of the state down to the local populations. This often creates a difference of the state's goals with the local priorities.(Robbins, 2012)

4.7 Political Object and Actors

The capitalist system has brought an emergence of new types of classes in comparison to the feudal era, which has shifted a lot of the decision making and for one, redistributed power, however not equally over all classes, ethnicities, and genders. This, not being unnatural and existing within the ecosystem, has brought about alliances encompassing people, institutions, communities as well as groups of nations, with the intend to leverage power and influence as networks over certain issues, such as development policies and laws. With the expansion of the capitalist system and the emergence and increasing intensification of agrarian capitalism, a hegemony has developed in form of "institutions and individuals (i.e., MNCs, public officials), that have summoned great amounts of power and influence of specific areas that relate to the human-nature nexus. This power to influence policy decision as well as transformations of specific structures has lead to consequences and impacts of various degrees.(Robbins, 2012)

Such networks engage in pushing or opposing specific ideas, which Peet et al. describe as:

> "Regimes of global governance – that is to say states, community institutions, civil society groups, social movements, firms, and multilateral organizations – must be understood as products of particular sorts of capitalist social orders. At this moment in history global nature confronts an assertive neoliberal capitalism which is simultaneously destroying (existing) and creating (new) commons through complex processes of dispossession, annihilation and creative destruction (Harvey 2005)"(Peet, Robbins and Watts, 2011, 11)

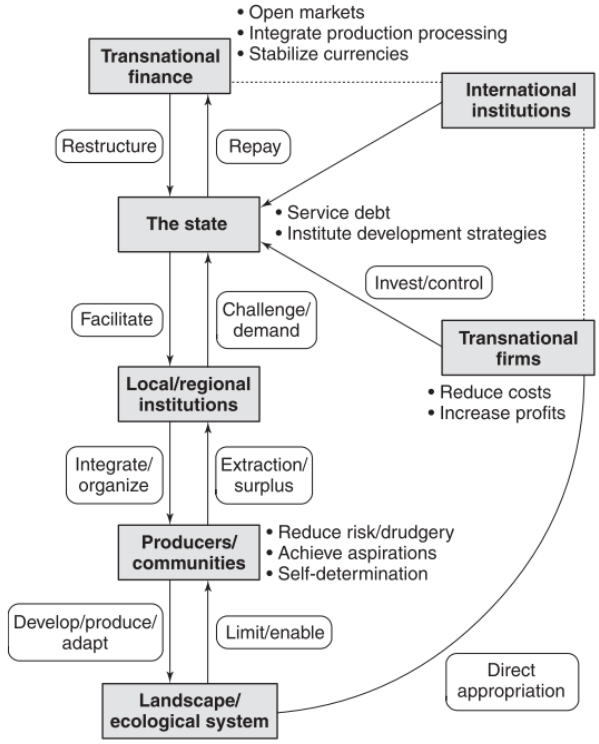
The rising interest in the political subject in political ecology has been matched by a parallel interest in objects, which represents a third new arena of recent expansion in political, ecological theory. This expansion is underpinned by the fact that capital does not act on its own just by a certain dynamic but through agents. These agents of capital, arising within different institutions or entities, often work in a form of structured agency, in which the given structure they find themselves in constitutes the network they work within, thus forming the decision or interest they advance.(Tilzey, 2018)

The next section will organise the assumptions above into a framework that will translate into the structure of this paper.

4.8 Framework for Political Ecology

Due to the vast amount of literature and components that can be added, this paper will focus on the following structure. While the interlinkages between all the factors, actors as well as variables that can be analysed, Robbins has created a chain of explanation that gives structure to the narrative to the complex relationship presented above. Figure 3 shows the different aspects that can be analysed within a context from the perspective of political ecology.

Figure 3: Chain of Explanation for Political Ecology



Source 1: (Robbins, 2012, p. 89)

For this paper, the first part will look shortly at the interaction between the state and transnational finance. This, due to the origins of neoliberal reforms, will briefly show the international institutions role. But mainly the analysis will move from the state and their facilitation of capitalist expansion in the extractive sector in Colombia through its interaction with MNCs. As Robbins shows, the next step, local and regional institutions are of course an important part, however for this paper and due to the focus of class struggle, will mainly go down into producers and communities impacted through the extraction. Lastly, the ecological system and landscape will be analysed in terms of impacts through degradation.(Robbins, 2012)

The top part of the framework, namely the state, transnational finance as well as transnational finance will analyse the assumption brought up by the political economy assumption describe above. In it, the commodification of nature, metabolic rift, market dependence, primitive accumulation as well as the treadmill of production will be carefully analysed with regards to the mining development of Colombia. Within this, also the class struggle between political objects and actors will be included.

When analysing the communities and the more local setting, the political ecology perspective on environmental conflict and exclusion alongside the subsequent impacts such as marginalisation will be utilized. The environmental conflict will also look at the interaction of environmental subjects and identities within the Colombian context. Lastly, the degradation will round of the analysis according to the framework put forward by Robbins.

5 Analysis

In 2001, the Colombian government changed the mining code allowing for increased foreign direct investment into the country, thus privatising the sector for various MNCs. Simultaneously the state-owned coal mining company was sold. This decision that was part of the commodity consensus was primarily based on the opportunity that the government identified by the increases in prices for commodities world-wide. For Colombia, alongside its important trading of oil, the key minerals that were being mined started increasing significantly at the time. The price for gold increased by more than four times and the price for coal doubled at that time.

This, with the backdrop of the neoliberal policies that were adopted in the 1990s, spurred not only the interest of U.S. companies but also that of large Canadian mining corporations, who had signalled interest. Internally, alongside the neoliberal policies that had been adopted by consultation of the World Bank, International Monetary Fund and other international organisations, this mean that the privatisation and the increasing extraction of the minerals became of "public interest", in other world, the "locomotive for development".(Petras and Veltmeyer, 2014; Villar, Perez-Montes and Schaeffer, 2017) In effect, taxes for the companies and also restrictions that banned exploration and extraction were softened or lifted in many cases.

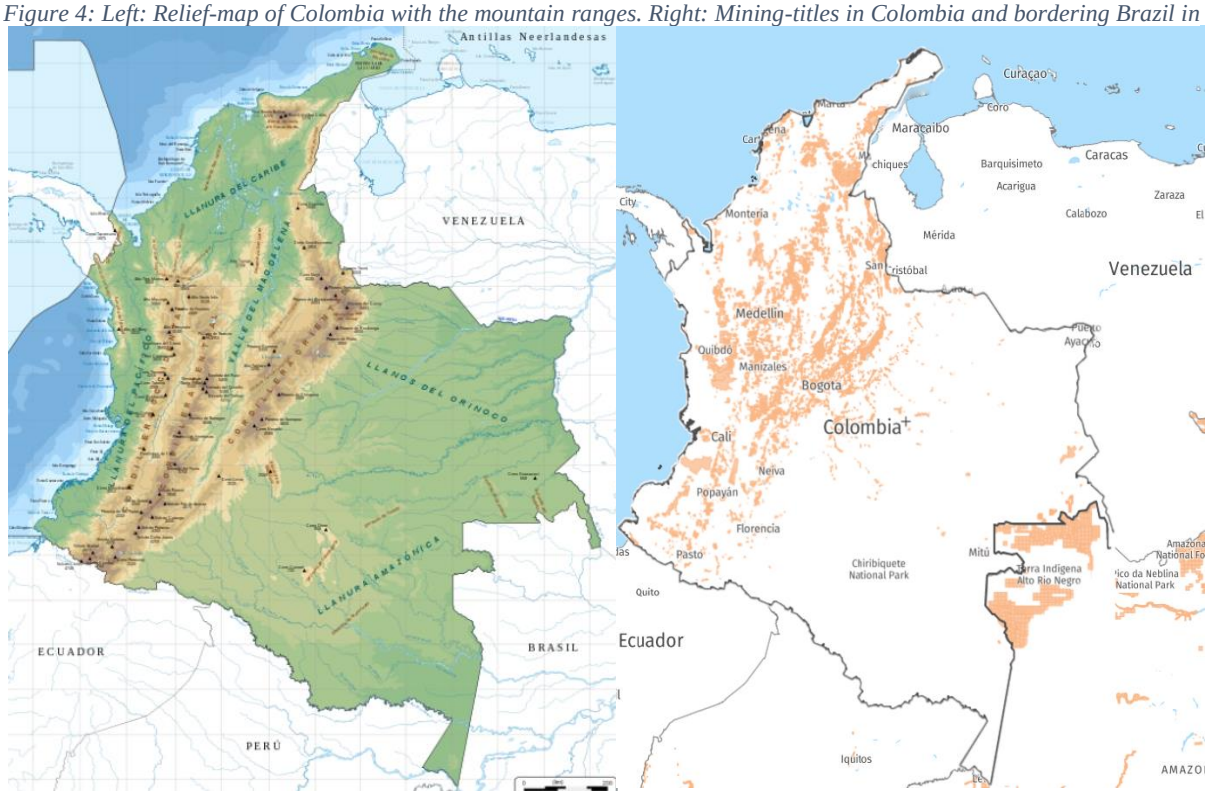
Taking the changes mentioned above into account, this section will, through the lens of political ecology and its assumptions mentioned in chapter 4 above, analyse the developments of mining sector as a national development strategy, propagated by the government. As a starting point of the analysis will be the change in the mining code.

5.1 Reforming of Colombia's Mining Sector and Formation of Power Relations

During Andrés Pastrana legislature (1998-2002) the mining code changed in order to attract more foreign investments. Whilst barriers were lifted, it was later under Alvaro Uribe government (2002-2010) that adjusted it further. This these adjustments had significant impacts on the mining sector in general. From 2002 to 2012 vast tracts of land were opened up for mining. In spatial terms, the area declared for mining by 2013 encompassed 40 million hectares of its 114 million ha. In terms of titles, this number skyrocketed from 2965 in 2002 to 9426 in 2012.(Roa-García, 2017)This mainly was driven by the increasing world demand for coal as

well as prices rising. Through the increase of the mining titles and areas explored, the nature in those areas has been, through the lense of Political Ecology, commidified, as the nature itself has lost value to its resources found within the subsoil.

Figure 4: Left: Relief-map of Colombia with the mountain ranges. Right: Mining-titles in Colombia and bordering Brazil in



Source: Global Forest Watch, 2018

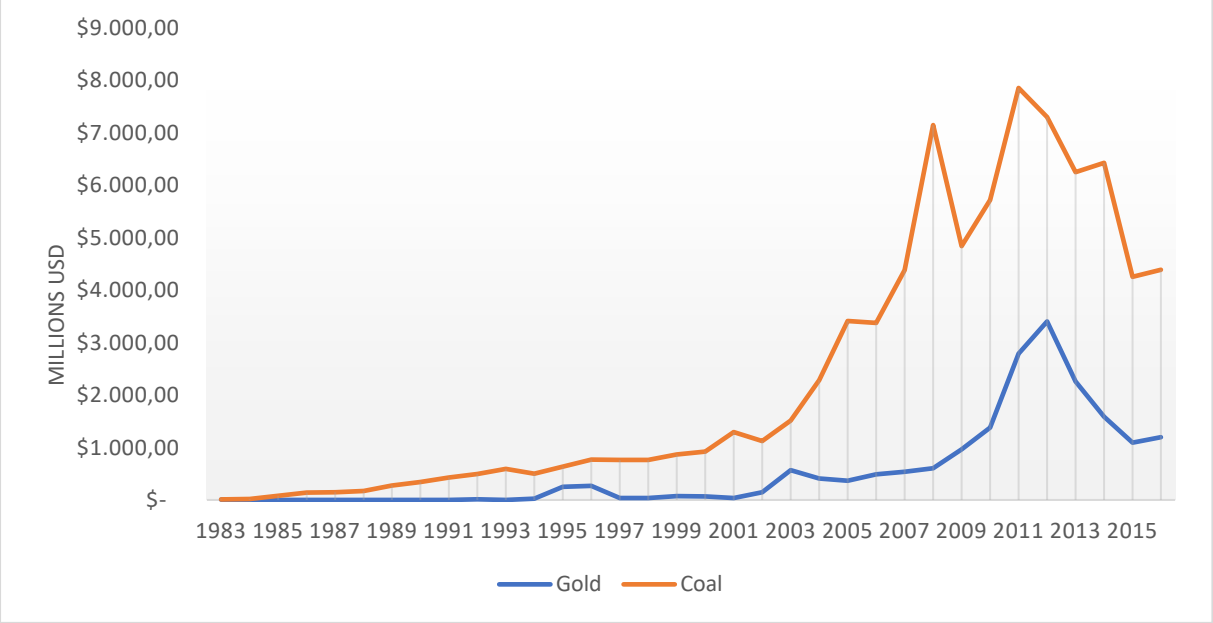
Note: The map includes all types of mining activities within Colombia, such as silver, copper and others

The data above came to a price for Colombia. With the fiscal debt still hampering development and the on-going conflicts created a favourable setting for the Uribe administration to adhere to recommendations made by international mining organisations. As being the fuel for development, the importance of revenue for the state from mining should be secured and reinvested in community programs. However, in 2005 the taxation and fiscal policies were adjusted, closely coinciding the recommendations of the mining actors call. While the change in the mining code allow more finance, in 2005 the changes gave larger tax breaks for mining companies on several levels. Deduction on fixed asset sales were raised, subsidies for fuel granted. Furthermore, the fixed royalties from hydrocarbons were loosened, giving company

representative the possibility to negotiate these. This has fee went from a fixed 20 percent down to around 8 percent with the addition that contracts had the amendment that these could not be renegotiated or raised for lengthy periods of time. With the amendments, adjustments according to costs occurring (environmental damages or social-costs such as poverty, for example) for the country could not be covered, leaving communities and the government at the mercy of expansion in order to profit more.(O'connor *et al.*, 2010)

These adjustments not only paved the way for foreign capital, which between 2002 and 2010 flooded the mining and energy sector from just 466 million to 4.5 billion USD. This translated to major increases of extractive sectors, with 80 in coal extraction. Whilst the gold price spike started a few years after, due to the crisis and the demand for gold as an investment and speculation commodity, increasing the production between 2006 and 2010 alone by 340 percent. It must be noted that within the gold mining sector, which in many cases are still informal due to concessions being held back and a complex system that connection paramilitary operations in gold as well as illegal mining of gold throughout the country. Reports claim that the increase of illegal gold mining has increased at the time as well.(Vélez-Torres, 2014) Figure 5 shows the exponential increase in exports for coal and gold over the past three decades. The graph also shows the second increase around 2005 whilst the conditions became increasingly favourable for the extractive companies.

Figure 5: Coal and Goal Exports from 1980 to 1987 in USD



Source: (OEC, 2018)

The development within the start of the mining boom and the increasingly favourable conditions are not surprising. With many of the elites, from landlords to actors connected to narco-capital, have favoured these conditions as well, increasing their investment possibilities for the land they had acquired both legally and illegally over the past centuries.(Hristov, 2015)

In the book *Global Capitalism, Democracy, and Civil-Military Relations in Colombia*, an analysis of political actors in place during the start of the mining showed the close relations that these had to extractive industries as well as international organisations such as the IMF or World Bank, which recommended these changes.(Aviles, 2006) Key positions such as ministers of the interior and national planning had close ties to MNCs as well as the aforementioned organisations. Furthermore, during these changes, Colombia had developed along with the US government *Plan Colombia* initiative aimed at the pacification of the countries, especially against the para-military groups and numerous resistance groups.(Aviles, 2006) The initiative also encompassed 7.5 billion USD. This initiative became much support by the extractive companies within the US, showing the capital expansionary program behind the initiative. Whilst at the time the oil lobby groups were heavily involved, that aim was to embed these in the plan for development and to increase extractive activities for the development of the country.

However, it was made clear that the interests of oil were closely intertwined with other mining activities. In 1999, the Secretary of Energy under Bill Clintons administration showed the way forward stating that:

> The United States and its allies will invest millions of dollars in two areas of the Colombian economy, in the areas of mining and energy, and to secure these investments we are tripling military aid to Colombia.(Aviles, 2006, p. 132)

This statement clearly indicated the how the capitalist elites and the neoliberal order clearly forced itself into the country in order to increase its activities within the country. With the close relations into the Colombian political sector and the influence of the elites, restriction along all fronts lowered barriers and created a framework that increasingly allowed for these activities to benefit that MNCs. The next section will look into which setting this framework was placed, as many laws are in place within Colombia, however, after years of conflict and instability

governance, an important aspect to protect and observe social and environmental laws and issues.(Villar, Perez-Montes and Schaeffer, 2017)

The next period of interest in Colombia national plan on developing through its resources began with the new administration under Uribe. The administration, alike the Uribe government, further pushed policy changes to attract mining despite the slowing down of prices for the resources between 2010 and 2016. The plan states that through extractivism, "prosperity for all, more employment, less poverty and more security."(Petras and Veltmeyer, 2014, p. 131) This was to be achieved through various policy decision, desired by the elites. These encompassed by increasing production even more and by protecting investors within the mining sector more.

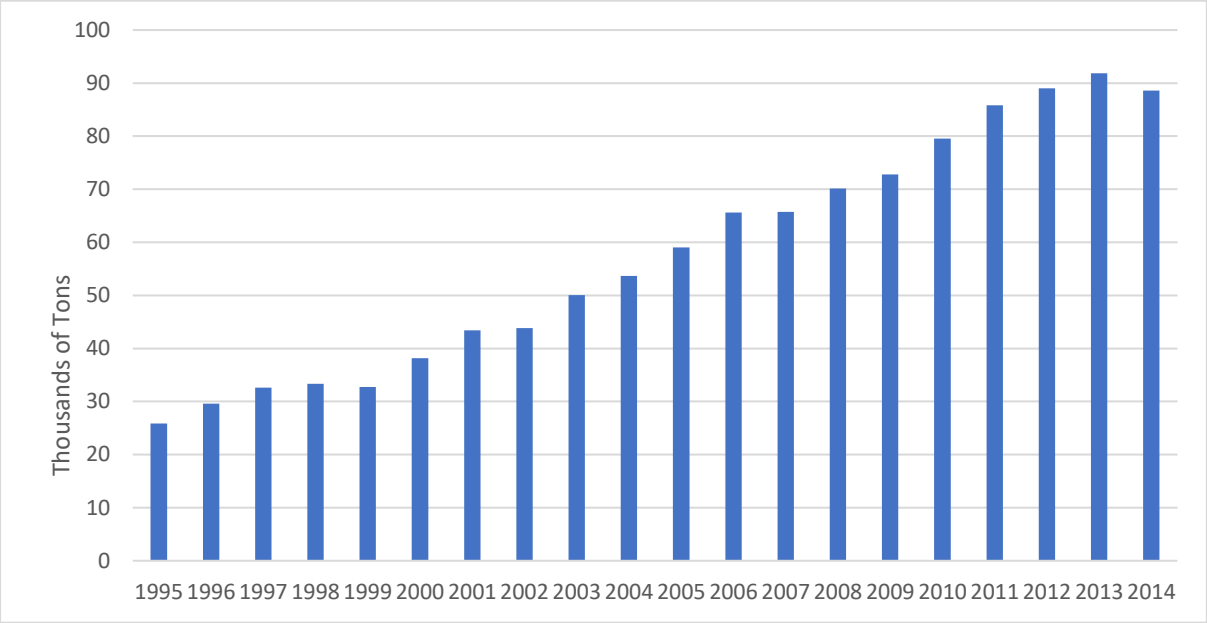
This also included cutting the revenue of the government through taxes which were lowered from 33 percent to 25 percent. This was accompanied by including another 20.5 million hectares of land into mining areas which were opened for extraction. This attracted even more MNCs. This decision was closely related to the tight connection between Uribe to transnational elite as well as investors. During the Santos administration the main focus was to consolidate his power amongst the elites and to create favourable conditions for them. The much-needed rural development and land reforms, demanded by many rural communities and the plentiful of landless and disposed population in Colombia. Instead, especially Canadian companies, started acquiring titles by acquiring titles by questionable means.(Petras and Veltmeyer, 2014)

In the course, the opposition was coerced and violently pushed down, through assassinations. The opposition to Santos plans were mostly small miners and peasant farmers that also opposed the destructive nature of the extractive expansion in Colombia. This will be more closely analysed later on.

5.1.1 Mining Productivity and Economic Impact

This section will look at the general trend in mining after the changes mentioned in the previous section. It will analyse what the government has gained through the increasing mining production in the last two decades. Within political ecology, the redistribution of costs is central as the costs for these activities are not evenly distributed amongst the different actors involved. These costs are usually brought in through rents, royalties and taxes.

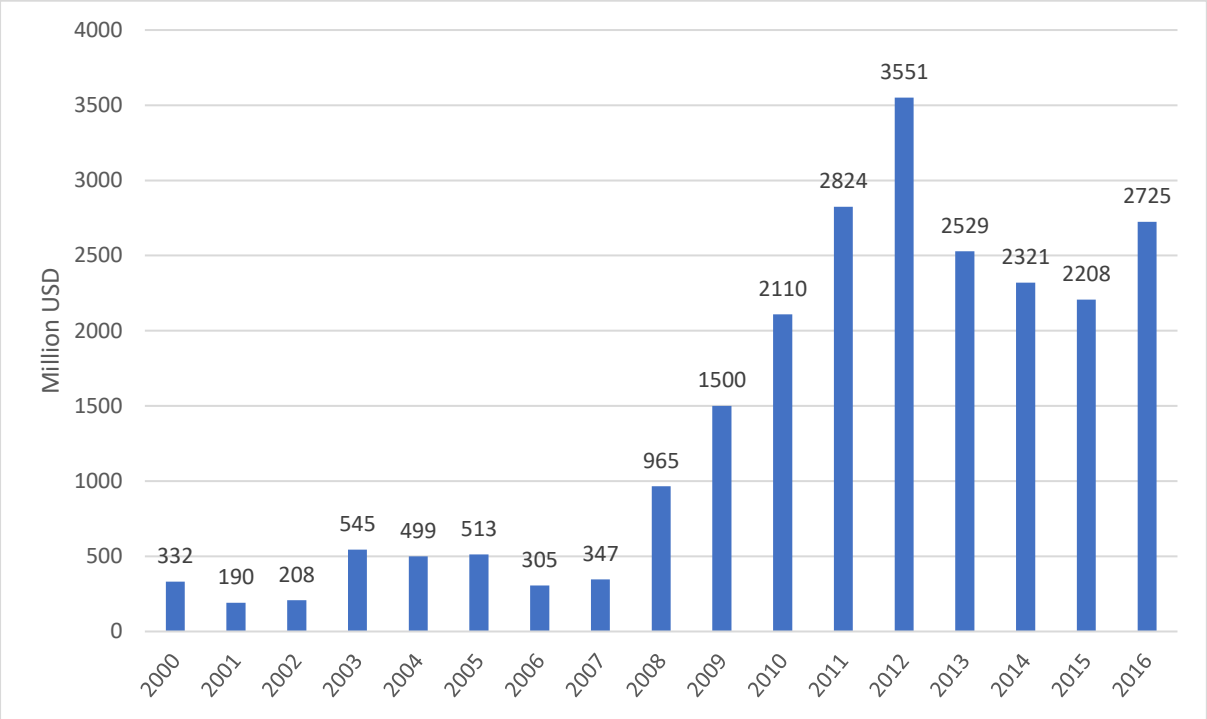
Figure 6: Coal Production in Colombia in Tons



Source: (CEPAL, 2018)

Figure 6 shows the increase of coal production, especially after the changes in the mining codes and the subsequent increase of FDI into the mining sector. With its motivation to increase production and thus improving the economic situation, the increase has been constant throughout the last 20 years. This is, of course, related to the increasing world-wide demand but also the increase in commodity prices. Not only has the increase in coal production been evident.

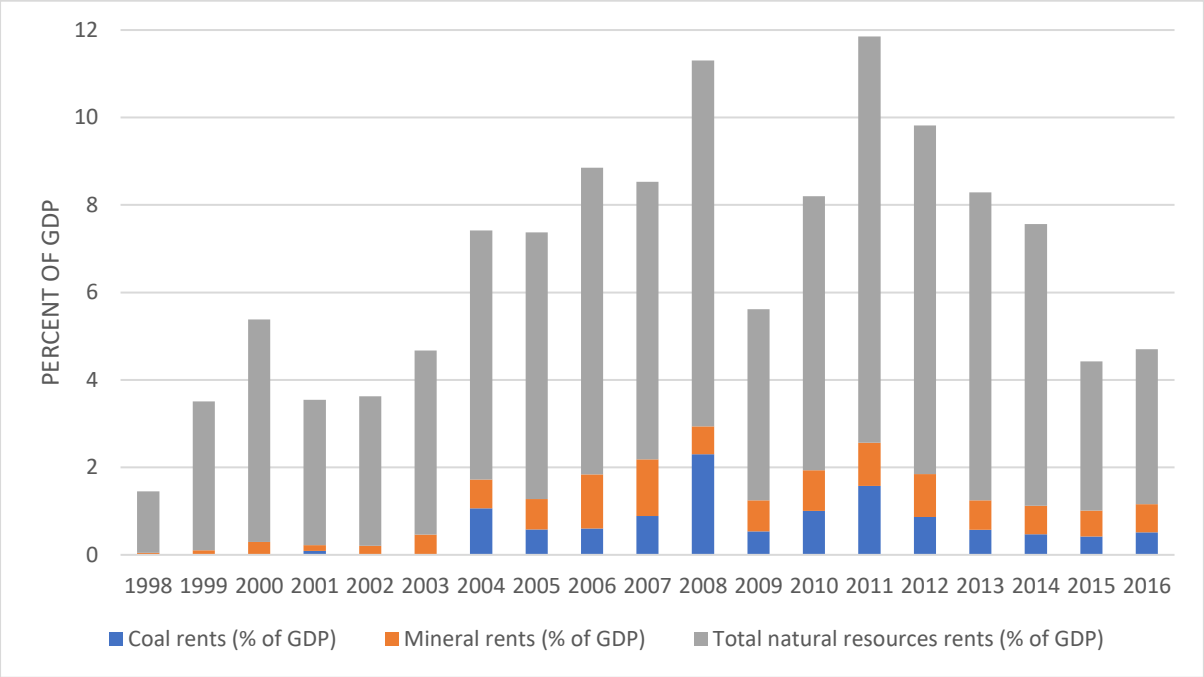
Figure 7: Value of Annual Gold Production in Colombia in USD



Source: (Massé and Le Billon, 2018)

Figure 7 shows the increase in gold production in Colombia from 2000 to 2016. Whilst the mining did attract investment, the increase in gold came at another time. After the world financial crises in 2007/08, the price of gold increased drastically due to the demand for investment commodities. Whilst only being used very minimally within manufacturing for electronics and other sectors, gold is primarily and investment commodity and for luxury items. Most of the gold extracted is destined for exports to core-capitalist countries.

Figure 8: Natural Resource Rents in Colombia as percentage of GDP



Source: World Bank, 2018

Considering the vast amount of gold and coal extracted over the past twenty years, due to the policy changes and deregulation of the mining sector, the impacts on the economy have been relatively insignificant. Figure 8 above shows the rents of coal as well as minerals, under which gold falls as well as the total natural resource rents, that is including oil as well as agricultural products. Event during the peak production the rents only showed a low increase compared to the vast amounts of land that which were privatized and thus commodified. Also considering the social impacts, which will be discussed in the next chapter (Section 5.2), the revenue achieved through mining for the population in total are meager. For the elites, transnational and national, however, the revenues of mining have been significant due to the lowered taxes and regulations.(Aviles, 2006)

For instance, the royalties that the state gathers from gold mining are at 4 percent. This came into place in the 1990s, as most of the mining was undertaken by small and artisanal miners. However, this has stayed at this level ever since. Studies undertaken have shown that the exemptions for large MNCs alongside the low royalty fees are far below the revenue generated by the businesses. Thus, the economic benefit does not serve the population. Alongside that, the low regulation and the tax evasion by MNCs are decreasing the profits by the state additionally.(Gutiérrez-Gómez, 2017)

One case of this tax evasion was undertaken by US conglomerate Drummond, that sold coal at under-market rates, thus reporting less revenue. This, of course, is illegal under the transfer-pricing standards and has not gone unnoticed. As an environmental minister pointed out:

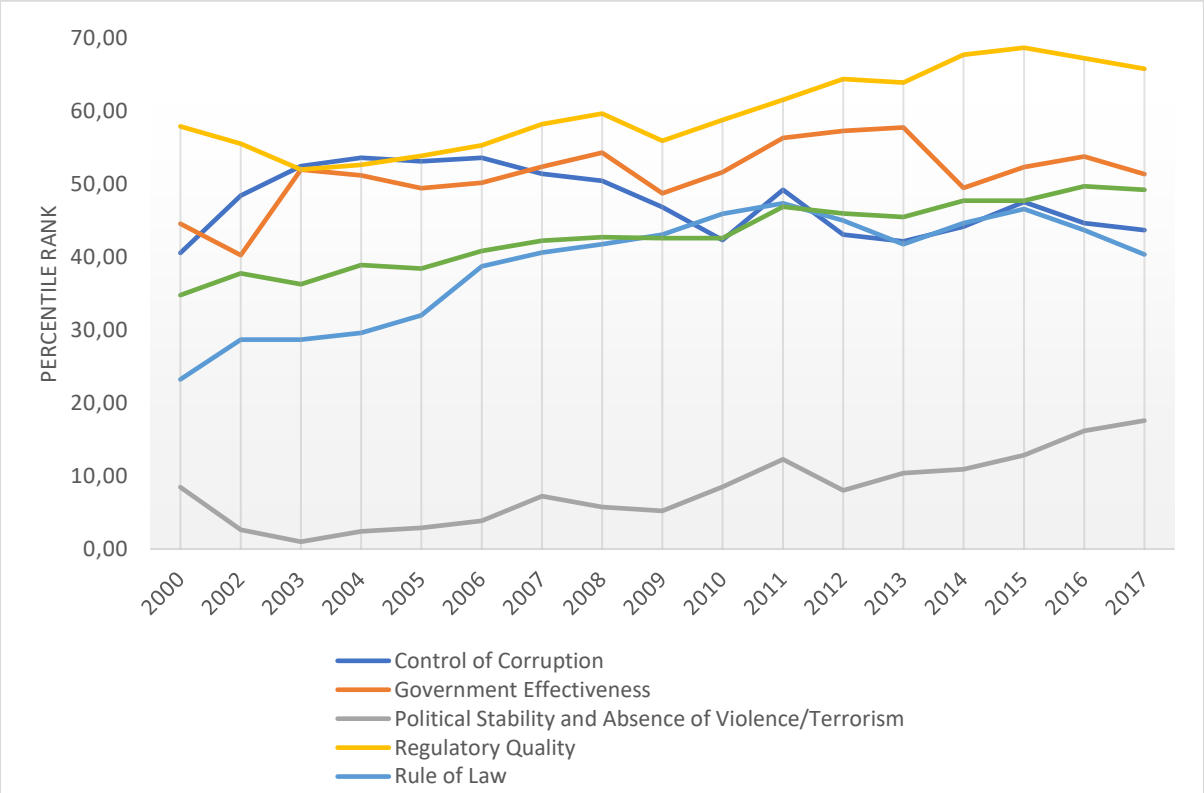
> When you take into account all tax exemp- tions and deductions and all other economic benefits granted to the corporations, it is the nation that ends up paying for all the schools, hospitals and football teams that the companies sponsor.(Gutiérrez-Gómez, 2017, p. 98)

Furthermore, studies have shown that this lax enforcement of taxes and the lack of generation of revenue from royalties and taxes have instead "indirectly [been] subsidizing foreign mining."(Vélez-Torres, 2014, p. 72) In effect, rather than the state promoting economic benefits for the state through mining, it has been creating a beneficial framework for MNCs and attracting the latter, rather than making the mining sector into a source of benefit for the much needed funds to tackle the many issues within the country

5.1.2 Governance in Colombia

With Colombia's long history of violence and struggles, the setting during which the government has imposed the aforementioned policies comes at a time in which governance of many regions is weak and lacking. Despite the pacification efforts of the government, many areas lack government control. According to the Governance indicators, the improvements in governance can be characterised as stagnant or only slightly improved. Despite being a functioning democracy, clearly, the political struggle over control of resource between rural communities has mounted in tension. Figure 9 shows the governance indicators of time.

Figure 9: Governance Indicators of Colombia from 2000 to 2017



Source: World Bank Group, 2019

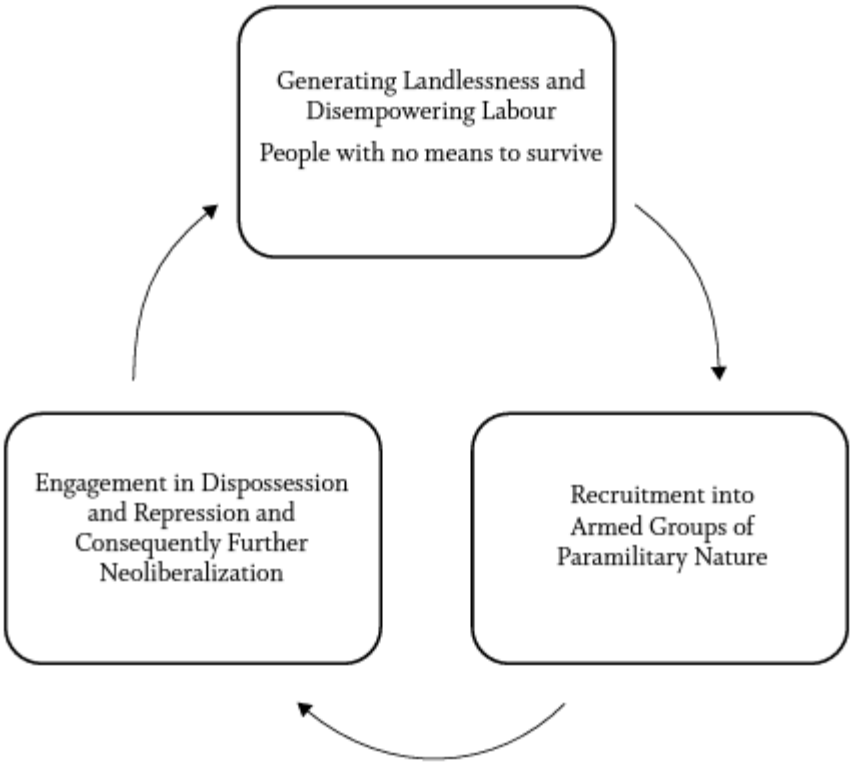
Most evident within this is the low ranking on the topic of violence and terrorism. It must be noted that the long historic violence between different groups within the country are the source of this. However, this has also led to the involvement of large MNCs with various groups, specifically in the rural areas. Furthermore, within a setting were stability and the rule of law still is lacking, marginal communities become more vulnerable to the lack of control by the government.(Hristov, 2015)

According to Jasmin Hristov, this lack of control has created a viscous circle within Colombia, primarily through the neoliberal restructuring. He states that

> The relationship between paramilitarism and neoliberalism illustrates the cooperation between the paramilitary's economic and military structures. Paramilitarism has served an important function in the neoliberal restructuring of Colombia.(Hristov, 2015, p. 151)

This corporation is also interlinked with the dispossession and accumulation of indigenous and peasant lands. Figure 10 below, shows how the loss of land and the ensuing cooperation between the capitalist elites within the country has become a recruitment circle for the paramilitary groups.

Figure 10: The relationship between paramilitary groups and neoliberal forces



Source:(Hristov, 2015)

The lack of governance and enforcement due to the weak framework that the government has been able to establish due to the on-going conflicts and the significant increase of mining in a short period of time has led to various issue for the societies. Therefore, the next section will explore the social impacts of the mining expansion in Colombia.

5.2 Social Impacts of Coal and Gold Mining

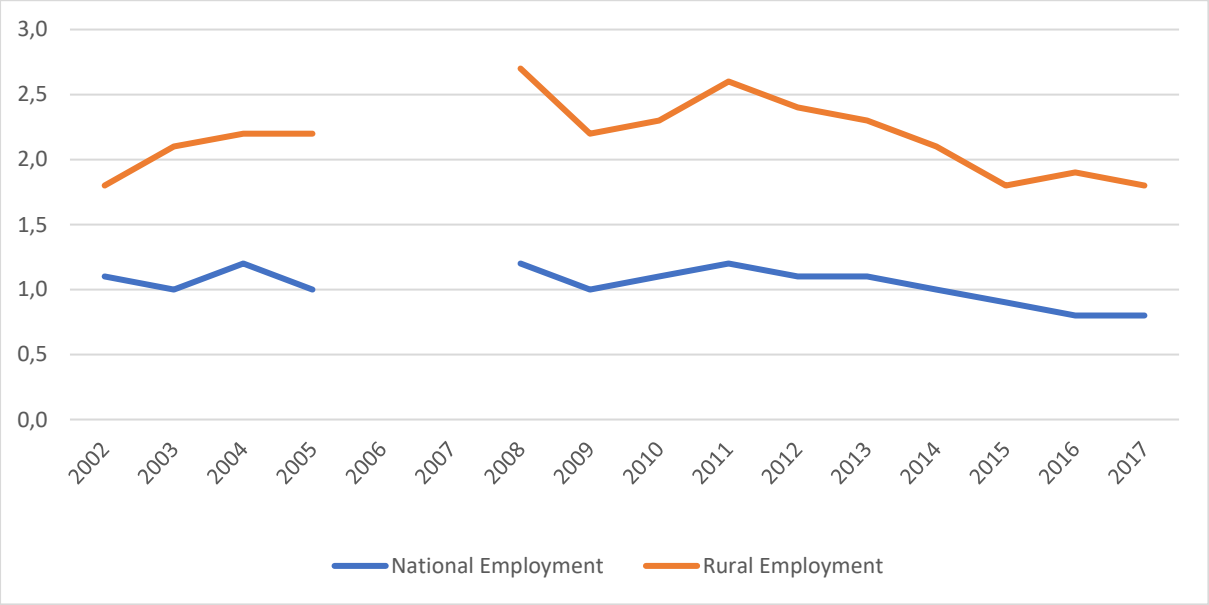
This section will look at the developments that the mining boom has had on Colombia, more specifically the rural population. This will include the aformentioned externalities, cost that are solely distrubuted on to the human population and those that were hit by the neoliberal expansion of coal and gold mining as of 2001. While the beginning of the section is focused on the countries overall performance by looking at some general data, two case studies will highlight the processess that are impacting communities that live on lands that have been identified for mining activities.

Whilst the political actos and those representing the mining-business elites assured that the increase in mining was central to Colombia's economic development, the monetary benefits can be indentified. However, this accounts for the government in a somewhat restricted way,

but the biggest profiteers have been the businesses. This become evident that while more and more land was opened for MNC and activities increased dramatically between 2001 and 2012, whilst afterwards stagnating up until 2017.(OECD, 2015) If the projections that this increase would create better and more stable employment for the mining communities sorrounding as well as better infrastructure, including health care and sanitation services, the data shows a different story.(Petras and Veltmeyer, 2014)

On the national level, the mining sector represents a rather smaller share. Its importance naturally is found within the rural areas. While it must be mentioned that several related sectors (tranport, services, and trade-related employment) have increased, the share for those mostly impacted and in precarious situations have not increasingly found employment in the sector.(O'connor *et al.*, 2010) Figure 11 shows the employment figures of the mining sector. Whilst a slight increase was recorded at the beginning of the mining boom, this short-term increase which increase by about 1 percent at most, has leveled off in recent years. Alone by looking at these figures shows that the dependence of the international prices on commoditites shows that the sustainability of employment in the mining sector is heavily reliant on the demand.

Figure 11: Formal Rural and National Employment share of the Mining sector 2002 to 2017



Source: (CEPAL, 2018)

Another important aspects, as it accounts for the accumulation process that is interlinked with the expansion of minig and the landlods that have been investing in land for various puporses,

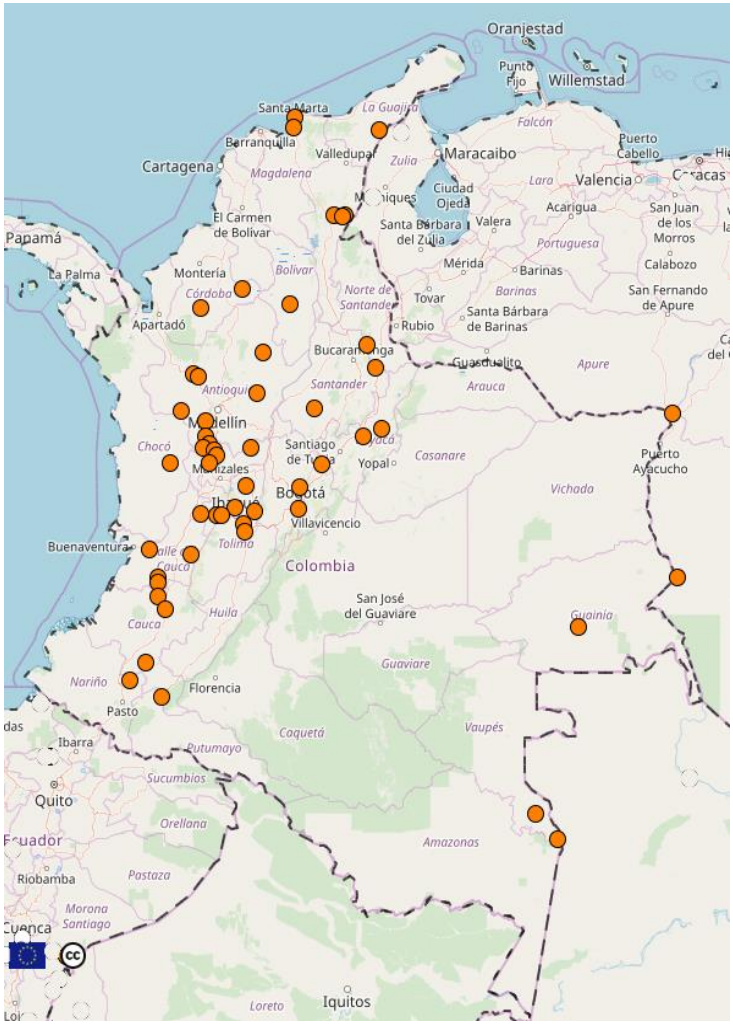
such as speculation or production for agricultural or ranching. By 2012, around 63 percent of the Colombias land was onwed by 0,43 percent of landlords. With the peace agreement between FARC and the government, more lands, after decades of being untouched due to the conflict, fears are that a new rush for land will happen due to the resources that have not been explored.(Reardon, 2018)

This development also is feared in increase the conflicts within the areas while various indigenous tribes now have to fear the expansion of the extractive industry within that region where FARC has operated.(Reardon, 2018) This is due to the past experiences that various other regions have faced. With the need for more exploration and more demand for coal, it was found that around 72 conflicts of socio-environmental nature were attributed extractive industry.(Vélez-Torres, 2016) Whilst the country is and has historically witnessed long term conflicts of differing intensity and causes, around 42 percent of the countries environmental conflicts are directly related to mining. Along mining accounts for about 15 percent of these conflicts.(Vélez-Torres, 2014)

The areas in which most of these conflicts happened in rural communities, many of which are indigenous that have either been displaced before or are facing obstacles that impact their opporutnities in securing a sustainable livelihood. It is said that around 7.9 million people are directly or indirectly impacted by the conflicts and the expansion of mining activites, as the area of the activities ecompasses around 5 million hectares of land. These conflicts not only are degradating the sorrounding areas and uprooting many communities but have been found to put around 64 indigenous groups at risk of extinction.(Roa-García, 2017) The map below (Figure 12) shows the distribution of environemtal conflicts, that are primarily situated in the mountain ranges.

The risk primarily comes for the inability of the tribes to continue their way of life in the regions. Alongside the environmental impacts that the indigenous and rural communities have faced which will be further analysed in section 5.3, the poverty levels in the mining regions have not improved overal. While in Colombia the overall poverty dropped from around 50 percent in 2002 to around 35 percent by 2016, local levels in some of the most important regions from about 80 % (Cesar) to a staggering 91 percent in, for example, in Montecristo Bolivar. Not only underlines this the lacking inclusion of either employment through the MNCs with the local communities as well as the lacking redistribution of benefits to the communities, but also highligts a plethora of other factors that have tied to the expansion of MNCs in the area. (Betancur-Corredor *et al.*, 2018)

Figure 12: Map of Mining Conflicts in Colombia



Source: (EJOLT, 2018)

Many rural communities rely on the resources that are found within the areas they live in. Gathering of plantlife and wildlife is an important source crucial for survival. One of the most basic sources in water. Simultaneously, the use of water for mining, espeically for coal minig

is essential. Many of the aformentioned conflicts, 80 percent according to estimates, are firmly related to the loss of land through (land grabbing) or/and water grabbing. In many cases natural water flows are redirected or cuto-off due to the extensive need for water in many of the mining processess. It is estimated that one ton of coal requires about 250 liters of freshwater. With the increasing production, demand is covered by tapping the natural occuring water resources.

5.2.1 Resistance to the Extractive Advance

During the expansion of extractive activities, primarily operated by MNCs, local indigenous groups and peasants (including farmers and miners) alongside a wide variety of actors saw their interests being impeded by the pro-neoliberal forces and actors within Colombia. This, in answer to the expanding mining companies, initiated several movements within the country resisting this expansion, as they did not see any profits or improvements for their livelihoods within the nationally proclaimed resource driven development plan. As mentioned in the context, much of this resistance had formed in the past, as the same groups had been marginalised and displaced throughout Colombia's history.(Petras and Veltmeyer, 2014; Hristov, 2015)

Whilst many actors are involved in mining or other extractive practices, the capitalist strategies for accumulation utilized by the large corporations, seeking to secure as much of the resources that became acquirable after the legislative changes for the development plan. However, with the favourable conditions also came another important aspect that has sparked in many resource-rich countries, especially in Latin America.(Jenss, 2012) This aspect included the strategies that companies are using to reap the surplus-profits of the countries. According to Kyla Sankey, mining corporation achieved through the following strategy:

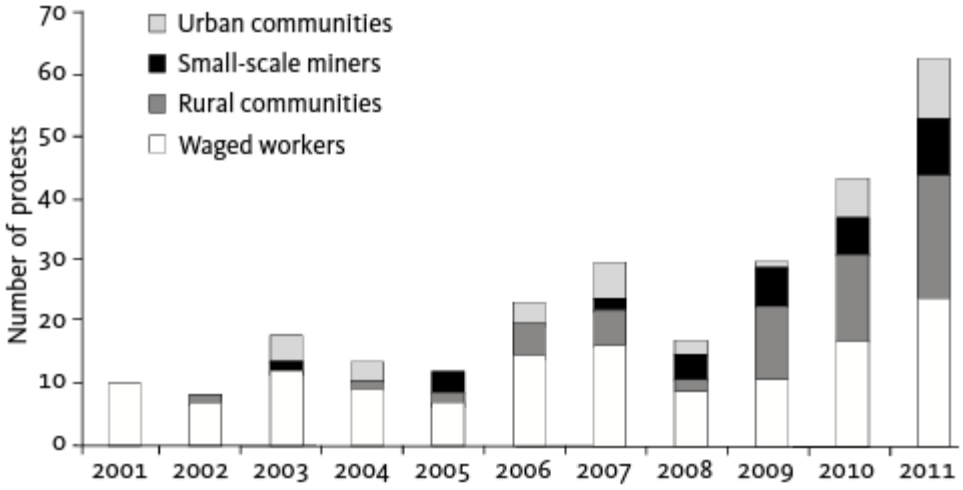
"wield political influence that allows for the appropriation of an extraordinarily large share of the pie by recourse to deceptive, fraudulent and violent strategies. Such strategies include a brutal assault on the collective power of labor, and the often violent or deceptive appropriation of land and resources from local communities while avoiding the payment of compensation for the full extent of the social and environmental costs."(Petras and Veltmeyer, 2014, p. 135)

These tactics and evident empowerment that had taken place post-2001 sparked unrest within the country from various actors. There are a multitude of factors that explicitly show that the above-mentioned strategy has created these tensions. The protests surrounded many different themes, foremost the failure of agreements between communities and MNCs to be held up.

This, for example, is evident when the case of the settlement of the Wayuu tribe, the largest in Colombia, that had been forced to resettle in order for the coal mine *Le Cerrejon* to expand its activities. Whilst agreements were made to ensure access to water and housing, amongst other things, many were not meet until today.(Mark Curtis, 2018)

However, not only is the distrust of the actors towards the MNCs and their agents an issue. Other issue that have sparked the resistance were the lack of enforcement of rights, environmental damages. Furthermore, issue surrounding the mining code, labour and labour rights have been parts. Figure 13 shows the increasing protest that have been taking place within Colombia as well as the various groups and their activities in resistance.

Figure 13: Actors involved in various social struggles related to the extractive industry.



Source: (Petras and Veltmeyer, 2014, p. 135)

The following section will exemplify the sitation in two mining communities and their resititance as well as the impact the expansion of mining is having on them.

5.2.2 Two Case Studies of Coal and Gold

The following section will showcase two mining regions, one active in coal mining and the second active in gold mining. With the increasing demand for both of these natural resources, the two regions have over the past two decades experienced the violence, marginalisation, and a deterioration of the human and environmental health. By show casing the two, a better picture will be giving of how these conflicts differ but also resemble the struggles between the opposing forces, MNCs and the government against social movements and environmental actors.

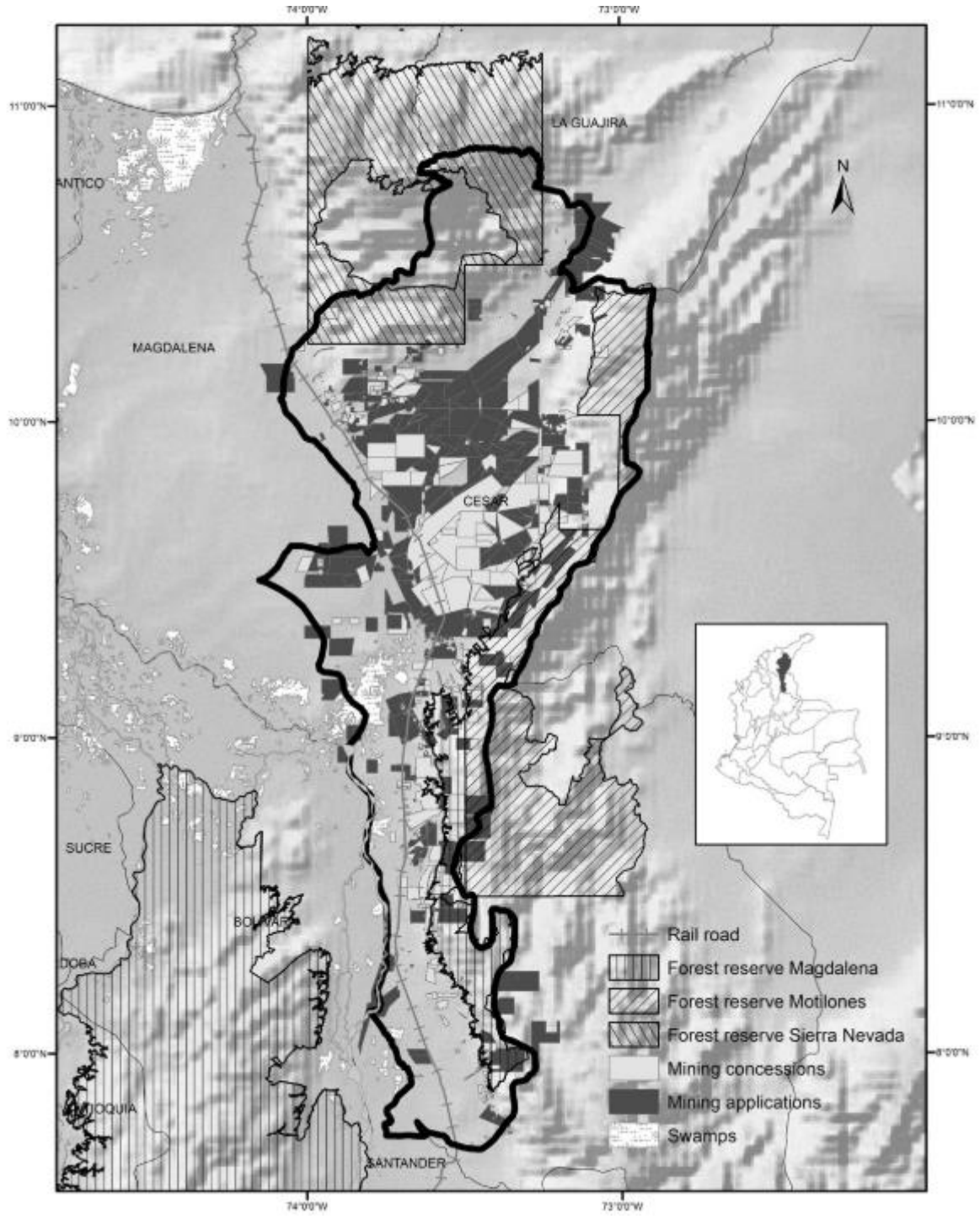
The first case will look at the open-pit coal mine operating in northern state of Cesar. In Cesar alone the increase of coal production sky-rocketed by 74 percent between 2000 and 2012, from 12 to 46.6 million tons, making it one of the biggest and most crucial coal mines in the country.(Cardoso, 2015) The second case will highlight the gold mines of Marmato, where historically resettled formed slave and indigenous people have subsisted through artisanal mining, which is another point of conflict, as the governments focus, and aim is to formalise the mining sector and by focusing on international capital to undertake the extractive activities.

5.2.2.1 Coal Mining in Cesar

The Cesar mine is operated by three large MNCs, Drummond with a export share of 54 percent, Prodeco, a subsidiary of the swiss-based Glencore-Xstrata, with 16 percent and lastly the Goldman Sachs owned Colombian Natural Resources with 8 percent. In order to profit from the extraction as much as possible, almost the entirety of the coal mined in Cesar is destined for export destined mostly to Europe and Asian nations. While the expansion mainly took place after the mining code was changed to attract more foreign capital, the region has historically been inhabited by poor rural communities and indigenous groups. Furthermore, much of the surrounding areas are natural reserves or are important and fragile ecosystems. (Cardoso, 2015; Villar, Perez-Montes and Schaeffer, 2017)

According to a map from the Colombian Mining registry (Figure 14), the companies have in 2013 made large scale applications for further expansion of mining territories. The new applications show that many of the applications overlap with the protected areas.(Cardoso, 2015) With a lacking and in many instances ineffective environmental management by the government, many of the illegal land grabs, as well as the assessment of weather protected areas, will be opened for extraction are often insufficient, due to the lack of oversight.(B. Franco and Ali, 2017)

Figure 14: Mao of Region around Marmato mine including new concessions, applications as well as three forest reserves



Source: (Cardoso, 2015)

This desired expansion has in recent years lead to increasing conflicts and opposition from the local communities. This also has historic roots as the region has been impact through guerrilla and para-military violence. Alone from 1996 to 2006, at least 3.100 individuals were murdered and a staggering 55.000 displaced from their lands. According to a report by the NGO PAX,

this violence has been increasing significantly between 2012 to 2016. It was observed that the violence was however not lead by those marginalised but showed a connection between the MNCs operating in the area and the para-military groups. The report states that "several […] signed pamphlets or communiqués [by] neo-paramilitary groups have claimed to defend the interests of companies and other economic actors…"(van de Sandt, 2016, p. 5) The groups have engaged in murders and violent attacks on civil society leaders. Also, many threats have been reported in the region. This tactic is to push-away the struggle of the historically disenfranchised groups seeking justice and reparation. Main targets have been community representatives but also several leaders of trade unions related to the MNCs in the region.(van de Sandt, 2016)

Due to the still on-going securitisation of many regions within the countries, companies like the MNCs in Cesar resort to paying paramilitary groups for security, as a paramilitary leader stated that the company "paid a tax in exchange for security."(van de Sandt, 2016, p. 17) He also added that meetings with the MNCs and local groups have meet several times. In those meetings, groups expectations is that they will increase in strength due to the expansionary push by the MNCs.(van de Sandt, 2016)

Socio-Environmental Impacts of the Cesar Mine

The population in the surrounding areas of the Cesar mine also are facing socio-environmental impacts that confirm the assumption of political ecology, especially those of degradation, marginalisation and exclusion. Due to the increasing production, these externalities are not included in the price of coal and are burdened onto the local population. Firstly, the increasing production has had major impacts on the way of life, due to basic provisions being contaminated by the expansion.(Cardoso, 2015)

Various audits and samples throughout the region have indicated that the nearby water source should a deterioration of the quality. The water is used as a source of drinking water as well as for agricultural activities by the local communities. The samples have shown increasing level of sulphate, manganese and iron. This combination, mostly coming from the mining waste and dust, are now deemed, according to an index as undrinkable. Despite this being known due to various test, the main reason why the companies are not held liable to the costs of cleaning up is the missing legislation and the weakened norms set by the government.(Cardoso, 2015; Villar, Perez-Montes and Schaeffer, 2017)

It is however not only that the local population is facing issues with the quality that is leading to health problems as well as a decreasing productivity of the agricultural land, but also the excessive use of the water sources in the areas. Reports showed that per ton of coal, slightly more than 85 litres are being used. The region is prone to dry seasons as well, making this unsustainable usage of water disastrous for the population that during the said seasons cuts down its use accordingly. Measurements of the groundwater showed a 10-meter loss of water level.(Villar, Perez-Montes and Schaeffer, 2017)

Due to the heavy use of water for the coal mines, companies have been also deviating waterways in order to cover the demand for water. This has been also included in a report by one of the companies. This would mean that a change in the surrounding ecosystems in the area. Prodeco, a company that is active in Cesar, has altered the three rivers already, the Maracas, Tucuy, Calenturitas river. This has led to the loss of riverbeds and aquatic species in those areas. These diversions and the drainage of ground water has led also impacted the local food production.(Cardoso, 2015; Dietz, 2017)

Firstly, it must be noted that the areas, as mentioned, has dry season and the El Nino has impacted the sector as well. Alongside that, Colombia has increased its palm oil production, meaning a loss of arable land for agricultural destined as nourishment of the local population. Between 2000 and 2011 the output of agriculture has dropped by as little as 3.5 percent to up to 11.13 percent. While some of the losses can be attributed to the aforementioned issues, much of it can be related to coal mining activities in the region due to the loss of soil quality, water quality as well as availability alongside the loss of biodiversity which negatively impacts the surrounding ecosystem. These impacts have lead to a loss of productivity in agriculture between 1990 and 2010 by 36 percent, falling from 531.890 tons to 338.585 tons.(Cardoso, 2015)

5.2.2.2 Gold Mining in Marmato

Another prominent case amongst the many in Colombia which represents the struggle between local communities and capitalist interest groups is the Marmato gold mine. Around the mine the town of Marmato was founded centuries ago mainly through the importance of the gold-mining in the region. The majority of the population of 10.000 inhabitant's descendants from indigenous and afro-Colombian groups. In 1946, the local communities miners were given the right over the mining in Marmato gold mine. However, in 2007, Gran Colombia Gold (GCG),

a conglomerate merged with the Canadian company Medoro Resources, proposed to receive the right for gold mining in the area.(Cardoso, 2015; Villar, Perez-Montes and Schaeffer, 2017)

One of the major issues regarding this was that many of the policies put in place were reverted or disregarded. This has brought out conflicts between the artisanal miners and MNCs, as the former are fighting for their right. Many, not only in Marmato, face the dilemma of depending on the income of Gold mining, but are not receiving land right, thus are now regarded as illegal miners. This has been identified through "lack title[s] to their mines due to the historical absence of the State and a legacy of failed government policies regarding formalization."(Rochlin, 2018, p. 332)

This had led to massive community resistance as the plans of GCG to remove and resettle the complete town for its plans for an open-pit mine. The tension was heightened as the Government decided to criminalize the artisanal miners in 2012. This lack of formalisation brings many of the miners into situations where the trading and monitoring becomes increasingly difficult.(Rochlin, 2015)

While GCG later on decided not to further pursue due to the falling Gold price after years of struggle. Some also indicated the community resistance. This shows that while the miners that had been living there are dependent on the income and are more resilient, whilst GCG was dependent on the market prices. If they would have received the titles for the mine, the population would have been displaced like many others within the country. This was also indicated by the President of the Asociación de Mineros Tradicionales de Marmato (AMTM) who commented that "they [CGC] came to the community totally ignorant of the community and its interests, they wanted to exploit the gold…" Additionally he added that it was the governments fault due "its free trade agreement with Canada [to] encourage Canadian investment" while not taking into account or mentioning the interests of the miners.(Rochlin, 2015, p. 335)

The Colombian Constitutional Court had ruled in favour of the community, stating that no operations may commence in Marmato as well as halting other planned activities nearby until agreements and talks between the parties are undergone. GCG has in the meantime sued the government for this decision. Whilst the case is still on-going it highlights so of the key issues that is found within the artisanal mining sector of Colombia. Without a legal framework to formalise, through land titles and legalisation of these miners, these will remain precarious and

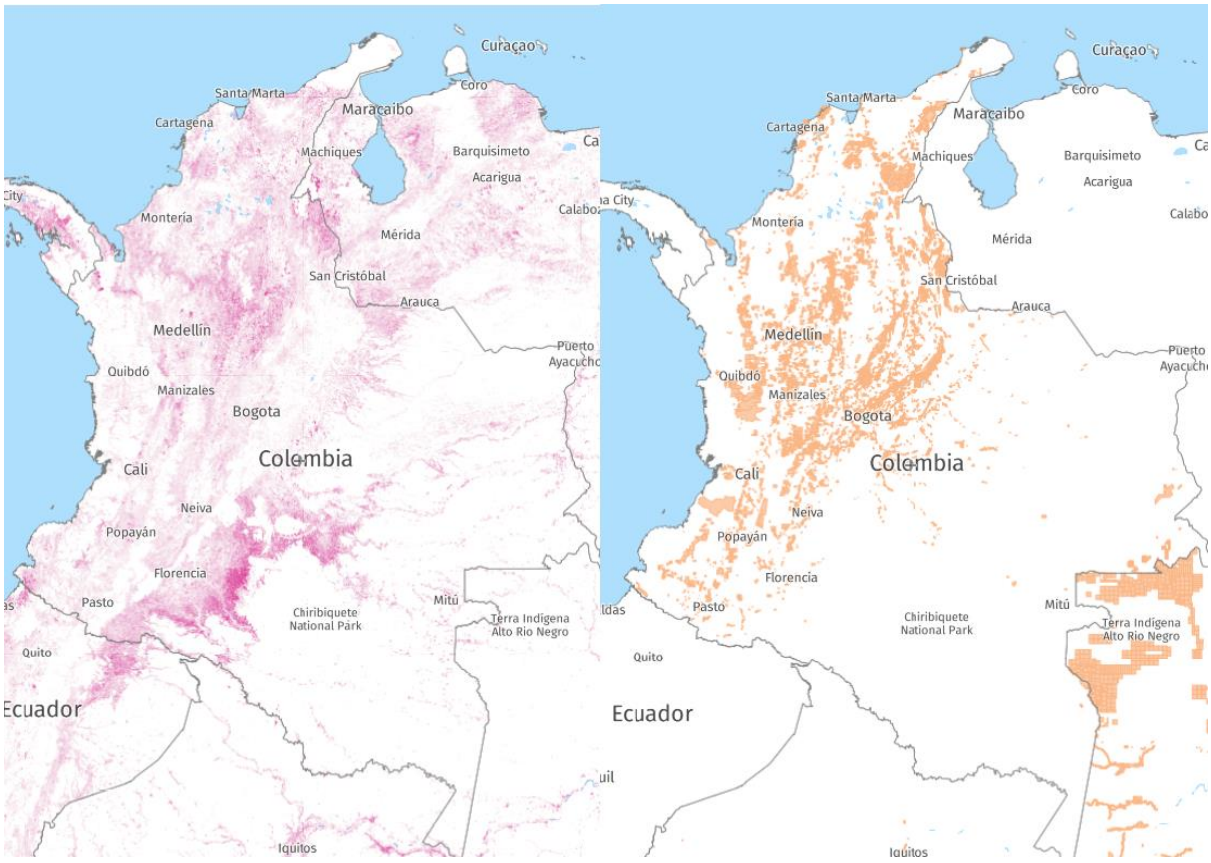
vulnerable to interest of big mining companies. The close relation to the interest of GCG and the global price, future price spikes for a speculation commodity will keep the communities in similar situations and vulnerable to capitalist accumulation practices.(Rochlin, 2018)

The case of Marmato symbolises the class struggles that have been embedded with Colombia for centuries. Furthermore, with policies set to ease the access of transnational capital, communities are being pressured and further marginalised, one of the assumptions of PE.

5.3 Environmental Impacts of Mining in Colombia

Colombia is known for its extremely diverse nature, bordering both the Atlantic and Pacific oceans to the north and west, whilst 35 per cent of the southern region of the country is covered by the Amazon Rainforest. However, the main mining activities have been located along the coastlines and the bordering mountain ranges (see Figure 15). This is mainly due to the still vast amount of land being unexplored for mineral resources.

Figure 15: Left-map shows the tree cover loss. Right-map shows the mining titles in Colombia



Source: (Global Forest Watch, 2018)

Open-pit mining activities, for gold and coal similarly, are largely linked to the destruction of natural habitats. With the technological advances in the mining industry and capital availability, vast tracts of land are degraded daily. All vegetation is removed in the process whilst also impacting the surrounding areas in which humans and wildlife live. The left map in Figure 15 above shows the tress losses that have happened in Colombia up until 2016. Of course, it must be noted that some of the tree cover loss indicated can be related to agricultural and ranching activities.(Sibylla Brodzinsky, 2017) However, the increasing production rates and expansion of mining, through the newly accessible and commodified tracts of land, clearly shows a relation to deforestation. Through this, in various regions in the country areas surrounding mines have also been impacted. Due to the high amounts of waste of mining large deposits of debris are placed in surrounding areas. The dumps contain sulphides that contaminate the air and water-sources in the surrounding areas, which will spread through the drainage into even further areas.(Gutiérrez-Gómez, 2017)

This has also caused areas to show levels of desertification as the biospheres are damaged not only through the contaminants of mining, but also through the excessive requirements of water in mining. In several instances, such as *La Colosa*, another major mine, water reservoirs have been depleted. Also, the redirection of natural waterways has siphoned off water necessary to uphold the balance necessary of the biodiversity found within the Colombian landscape.(Dietz, 2017)

Furthermore, traces of acids and cyanide have been found within streams located in the proximity of mining. With the increase of gold production, the contamination of the soil and water through mercury has increased dramatically. This, however, for the most part, originates from the artisanal mining as well as small-scale mining for gold. The annual release of mercury through gold mining is set at about 130 tons making Colombia one the countries with the highest consumers per capita. This contamination has impacts on vegetation, wild-life and human life.(Díaz *et al.*, 2018)

Beside the increasing inputs by mining companies and artisanal gold miners, the waste from industrial open-pit mining are having a large, widespread impact on the surrounding environment. There are no wholesome figures. However, there are certain estimation such as that one ton of coal leaves a waste deposit of about 10 tonnes. Furthermore, as mentioned in the case study for the Cesar mine, around 7.57 billion tons of waste has been generated from 1990 to 2012. With intensification of production and the investments in heavier technology,

these numbers on a national scale are estimated to be very high and are one of the costliest externalities put on the population. It must be noted that there are rehabilitation commitments in place for companies, however these have not been met according to reports.(Cardoso, 2015; Roa-García, 2017)

Another major impact of mining onto the environment are increasing amounts of dust, containing harmful substances, that are propelled into the air and degrading the air quality and water quality in the surrounding areas. In total, estimations of the costs of the impacts above on nature are calculated to be around 10.8 billion USD.(Cardoso, 2015) According to U.S. hydrogeologist and geochemist Robert E. Moran, despite having an idea of the costs that are being created through mining, the major issue with these impacts are as follows:

> They are difficult to avoid and when present are difficult to correct. What I'm saying is that some companies do a very good job to avoid these problems, but it is incredibly difficult and expensive. Most, after operating 20 or 25 years, leave behind some very long-term impacts.(*Colombia: 'The impacts of mining are going to cost us' says Robert Moran - Gaia Foundation*, no date)

This would create a lot of issues and health impacts for the surrounding communities. Furthermore, lacking regulatory framework and funds allocated to mitigate these effects are missing in Colombia. It is evident that the costs of these impacts are being paid by either the communities or the government. However, through the deregulation and decrease in royalties and taxes, the income and benefits to combat the impacts are not sufficient. These recorded impacts confirm what the assumptions of political ecology, as the policy decisions surrounding mining are one of the root causes to the degradation of the environment. Also concerning the externalities, Colombia's government has loosened regulations around environmental policy as well as not improved its tools and monitoring with the intensification of mining throughout the country. While these impacts are being felt already, projections are that the long-term impacts and the gravity of those might increase and cause the loss of major biotopes in Colombia.

6 Conclusion

The introduction of new policies around mining in 2001 has clearly turned Colombia's extractive sector into a modern capitalist state. With the new policies, a flood of foreign direct investment from abroad has generated a rush for its natural resources, not solely but significantly for coal and gold. Through the increasing privatization of land and accessibility of resources by mean of titles, has generated significant spurs in production to meet the demand for resources in the core capitalist countries as well as for emerging industrial nations. This has excorticated the metabolic rift as other sectors have been weakened through the resource driven development model for the past 20 years.

With its long-lasting history of war, violence, displacement and human rights violations, the government has open up its resources without considering the past and still existing conflicts and has left it up to the communities and historically marginalised groups to oppose the expansion of the sector and the ensuing accumulation process the capitalist elites have started since the reforms. The means of production has been taken or degraded for many communities living subsistence lifestyles or, for indigenous, a life in which the land is seen as sacred.

With the presence of paramilitary groups, that in the past have been involved within the sector, the neoliberal classes have seen a tool that is used to coerce the local population into either giving away their land due to the ongoing threats and the governments inactivity due to its primary focus in making the country one of the worlds leading mining destinations for MNCs. Protected areas, including indigenous land and natural reserves, have through the expansion of titling brought a new struggle to these marginal groups that has brought about resistance from these communities. The price of this resistance has been costly for many groups, as violence in the extractive sector and other human right abuses are rife.

While some opposition is focus on the right to land, some is focused on the impacts, social, economic, and environmental that the mining regions are facing. Many have lost their means of living not only through the dispassion of their land but also through the impacts of pollution, ranging from the depletion of water resource to the contamination of these and the soil around the mining pits. This, along with the violence, has pushed people into new areas in many cases away from agriculture into cities and towns. The displacement in recent years for mining projects is staggering, and despite a looming slowdown of coal demand, this will continue, as

all administration, disregarding the social unrest, still have made resource extraction its development focus.

Additionally, artisanal gold miners face the challenge of not being included in the new legislation and have been deemed illegal and may face displacement. In spite of the victory, with the rise in gold prices that may occur, the government seems to uphold their view that only through foreign mining the country will prosper. The artisanal miners have opposed the expansion, but without changes and an inclusionary development program, the situation will stay precarious. Furthermore, the illegality excludes these miners, often having mined for generations, from participating in the economy and will continue to see them use damaging methods such as mercury for the extraction, which is harmful to human and the nature coming into contact with it.

In essence, the lack of regulation throughout the mining sector and the weak governance within Colombia has enforced the situation within the assumption of political ecology. While the profits have been maximised for the capitalist classes, the externalities, ranging from human health risk, precarity, as well as the environmental degradation are not acknowledging them or being addressed adequately. The economic benefits, from taxes to employment have been insignificant to the cost for the nature and the populations living in it. Through the highly mechanised production systems of the MNCs, the treadmill of production assumption also shows its impact, as employment in mining is low at best but in terms of rate of environmental degradation high.

For the government to make the sector attractive, it has completely neglected the above-mentioned impacts of industrial mining. And the return on investment by commodifying its biotopes and nature for coal and gold has been meager. To go further, if the environmental and social costs would be included in the budget, alongside other externalities, as well as the long-term damages, some experts have mentioned that only the elites in the extractive industries and those with ties to them have profited from the neoliberal expansion in Colombia. Those marginalised are facing heavy pressures to preserve their ways of life and cultures whilst a group of elites are benefiting from the weak legislature of Colombia's mining sector. Assessed on these terms, the path the governments used since 2001 has promoted an unsustainable development model and is risking for increasing conflicts from various impacted groups. With the recent peace agreement with FARC, it rests to be seen how the government will deal with the pacified territories as well as how it will deal with the immense challenge of governing to

the interest of the entire population and avoiding the cycle of violence that the country has faced for centuries.

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