

Turmalina Paraíba Case: Analysis of Legal Developments and Human Rights Violations

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Introduction

The PPGCJ-UFPB team chose to study the case known as *Turmalina Paraíba* (paraíba tourmaline), a rare gemstone discovered in the State of Paraíba, northeastern Brazil, an area of semi-arid climate, very poor, located in the region of Seridó Ocidental Paraibano, 316 km from the city of João Pessoa, the state's capital. The case is about the police investigation and court inquiry looking into wrongdoings committed in the illegal mining of this mineral. Paraíba is a rare bluish green variety of tourmaline and highly coveted in the international jewelry market, especially after having been deemed extremely scarce by the Gemological Institute

of America (GIA). As a result, its prices have climbed rapidly. Today, the so-called “paraíba tourmaline,” named after the Brazilian state where it was found, is fashioned for select wealthy customers by jewelers operating in Brazil, such as Amsterdam Sauer and H. Stern, and abroad, like Dior and Tiffany & Co. UK.

Considered an exotic product, the gem’s carat (0.2 grams) is estimated to be worth USD 30,000 on average but may reach USD 100,000 depending on the stone’s features, according to an information filed by the Federal Prosecution Office (MPF, in Portuguese). In 2014 and along with the Brazilian Federal Police, the MPF launched a probe they called *Operação Sete Chaves*, Police Investigation no. 0000451-81.2014.04.05.8205, to look into environmental crimes reported as substantive joinder of offenses; illegal mining operations reported as formal joinder of offenses; and money laundering, all of them repeated crimes. The information – no. 0800142-85.2018.4.05.8205 – is being processed by the 14th Federal Court of the Paraíba Federal Court System (JFPB). The conspiracy involves cases of illegal gemstone trade, bank accounts used for money laundering, tax fraud on the export of goods, and other wrongdoings.

This mineral’s mining conditions and the entire network of offenses surrounding it point to human rights violations that encompass environmental crimes in an area acutely affected by droughts and leading to severe social impacts; labor law violations, such as illegal mining using forced labor, while giving nothing back to society from the wealth extracted from the ground, and workers exploited under extreme heat for working days lasting 12 hours or more in 80 meter deep pits; crimes against the human right to development, including tax and customs duty fraud, and others.

1. Description of the problem

Operação Sete Chaves resulted from investigative work done by the Paraíba Federal Prosecution Office (MPF/PB) and the Federal Police (PF) that in May 2015 dismantled the criminal organization which was mining Paraíba tourmaline without authorization or environmental permits in an area registered to company Parazul Mineração, Comércio e Exportação Ltda, located in the district of São José da Batalha, city of Salgadinho/PB.

In fact, the investigation had begun in 2013 when the Federal Police found that this mining company's owners had swiped raw materials belonging to the federal government by mining Paraíba tourmaline without authorization from the then-National Department for Mining (DNPM) or the Ministry of Mines and Energy (MINISTÉRIO PÚBLICO FEDERAL, 2015, p.4).

Per reports, this group also conducted land surveys, digs, and extraction of natural resources without permits from the relevant bodies or license from the proper environmental agency. These continuous crimes allegedly began in the late 1980s and took place in plain sight, never once reported to the police, investigated or prosecuted.

Mining generates resources that must be shared between the federated states, cities, and other federal administration bodies in the form of financial compensation for the exploration of ore bodies “at the rate of up to 3% of the net income from the sale of mineral products, obtained after the last phase of the beneficiation process and before their industrial transformation” (MOSCOGLIATO, 2000, p. 10).

Hence, the Federal Prosecution Office launched in the State of Paraíba its so-called “*Operação Sete Chaves*” to investigate the illegal mining and illicit international trade of tourmaline gems run by a criminal orga-

nization whose members included mining company owners, politicians, and Brazilian and international tradesmen.

Internationally, the group operated by simulating trade deals between companies *Mineradora Terra Branca* and *Liberty Gems*. The gems were said to be common tourmaline and exported at a price ranging from 1% to 10% of their actual value. Upon reaching their final destination, they were then sold for their real price. The investigations made it clear that *Liberty Gems* and *Js Gems* are also shell companies registered to the same address as *Mineradora Terra Branca* in Parelhas/RN.

2. Human rights issues disregarded by law enforcement

Illegal mining pays no taxes. Therefore, the area from which the gems are taken gets nothing in return. Data provided by the Brazilian Institute of Geography and Statistics (IBGE) shows that in the city of Salgadinho/PB, district of São José da Batalha, 65.7% of homes are located in rural areas. Of the city's 3,508 residents (2010 IBGE Census), 815 are aged 15 years or older and are still unable to read or write.

According to said data, we realize that the gemstones which were supposed to bring development to the area from which they were taken have in fact lent themselves only to filling the pockets of those who illegally mined them and then gave nothing back to the populations of São José da Batalha and Salgadinho.

In this case, the only charges brought were related to the theft of raw material belonging to the federal government, profiting from the unlawful mining of tourmaline without an environmental license, con-

spiracy, illegal use of firearms, and transnational organized crime. It just so happens that the grave violations of human, collective, and individual rights were not within the purview of the investigations. Upon choosing to study this case, the UFPB team pored over the social, anthropological, and sociological issues in the affected area; the details related to employment relations; environmental aspects, given there was no mention or proof that either the parties involved in the illegal mining of the mineral or the environmental agencies had done anything to rehabilitate the environment in the area where the mine was located.

This paper makes considerations about the need to lift the corporate veil of the offending companies in order to secure enough money to redress the damage. Also, we review the literature and analyze the weak or ineffective regulation of mining grounds. The fact is that unlawful mining of raw material belonging to the federal government tends to lead to the gradual depletion not only of mineral assets but also the funds required to ensure the human right to development. Finally, we discuss the transnational crimes and their developments, namely fraud for the failure to pay financial compensation. After all, it impacts on the amount of funds available for infrastructure works, on environmental quality, healthcare, law enforcement, and the affected population's education, thereby depriving them from their right to development.

Therefore, the main goal of this case study is to examine in detail the legal, social, and human issues that are usually left aside by criminal investigations. These focus on finding perpetrators but do not foster a discussion about the violations of human rights or flaws in the constitutional framework.

3. Analysis 1. The Local Social Indicators And Their Relationship With “paraiba Tourmaline” Mining³⁶²

An important question emerging from the case under analysis is whether mining has brought human development for the area where it is carried out, considering the multidimensional scope of the term “development” (FRANCO *et al*, 2012) and its direct relationship with social issues, including respect for fundamental social rights such as people’s right to health, life, freedom, work, and sustainability.

Agenda 21, put together in Rio de Janeiro in 1992, advocates respect for minimum working conditions as they are essential to achieve sustainability. It is widely known that no sustainability plan is ever going to succeed unless there is respect for dignified work standards, a fact which consequently affects human development. We need to evaluate how such a complex activity as mining may positively impact people’s lives, especially in a semi-arid area plagued by low socioeconomic indicators.

This section presents indicators which describe the area where “paraiba tourmaline,” a highly valuable gem in the Brazilian and international markets, is illegally mined. The fact is that the area, or rather the entire federated state, and its population have not been able to benefit from the gem’s royalties. Mining has not translated into positive changes in terms of the local population’s health, work, housing, and education opportunities.

Therefore, the study considered the cities which are under the influence of tourmaline mines, as shown in the map below.

Maps 1 and 2 - Paraiba Tourmaline area of influence

³⁶² Research conducted by José Irivaldo Alves Oliveira Silva.

Mesorregião do Seridó Paraibano

Municípios Pólo:

- Picuí
- Pedra Lavrada
- Junco do Seridó
- Várzea



Some cities in the state stand out for their fierce mining activity, such as Junco do Seridó, Juazeirinho, Tenório, Salgadinho, Boa vista, Picuí, and Santa Luzia, in addition to cities in the neighboring state of Rio Grande do Norte, such as Parelhas and Equador. They are all located in the semi-arid region of northeastern Brazil, and have common features: low HDI, on-and-off water supply, lack of sewage collection and treatment infrastructure, lack of a proper healthcare system, lack of landfills, and other problems. This set of social indicators show the local, state, and federal governments' failure to transform people's lives and their inability to control companies that mine high value-added minerals. Additionally, these cities' administrations are fragile, lack resources, and depend on the Municipal Participation Fund (FPM), which accounts for most of their revenue. Furthermore, their education, health, and human development indicators are below the

state and national average rates. By and large, governmental bodies see Paraíba as a state boasting a wide variety of ores, which yield granite, feldspar, kaolin, bentonite, iron, gold, uranium, quartz, and tourmaline. The last-named has become highly sought-after by companies in the industry.

a) Indicators

CHART 1 – Human Development Index in Paraíba’s top mining towns.

	MHDI	Income MHDI	Longevity MHDI	Education MHDI
Brazil	0.727	0.739	0.816	0.637
Salgadinho	0.563	0.531	0.739	0.454
Juazeirinho	0.567	0.557	0.753	0.435
Picuí	0.608	0.596	0.745	0.506
Assunção	0.609	0.601	0.738	0.510
Junco do Seridó	0.617	0.571	0.715	0.576
Boa Vista	0.649	0.590	0.796	0.592
Santa Luzia	0.682	0.620	0.804	0.636

Source: Human Development Atlas, 2010.

The Municipal Human Development Index (MHDI) - Paraíba was 0.658 in 2010, which places this state within the Average Human Development range (MHDI between 0.600 and 0.699). The aspect contributing the most to the state’s MHDI is Longevity, at 0.783, followed by Income at 0.656, and Education at 0.555. In general, these cities match the pattern of indicators in Paraíba. In terms of the state’s ranking, Salgadinho is placed 172, Juazeirinho 157, Picuí 52, Assunção 49, Junco do Seridó 39, Boa Vista 10, and Santa Luzia 6. Salgadinho’s position in the ranking is noteworthy, as the city is at the heart of tourmaline mining. In nationwide terms, the

city's HDI situation is even worse. Salgadinho ranks 4,984, Juazeirinho 4,903, Picuí 3,957, Assunção 3,927, Junco do Seridó 3,756, Boa Vista 3,136, and Santa Luzia 2,386. In the aforementioned atlas, these figures range between low and average, which is consistent with these cities' service structure, or access to public services. This environment seems to be the perfect breeding ground for unhealthy activities that violate human rights head on, especially those related to labor rights.

It should be noted that these cities' ability to generate income³⁶³ is very low. For instance, the tourmaline mining city of Salgadinho's own-source revenue amounts to BRL 0.02 for every BRL 1.00 it gets from intergovernmental transfers. In other words, the city is highly dependent on state and federal funds. Juazeirinho follows suit with Salgadinho, 0.02 for every 1 real. In turn, Picuí goes up to 0.06 for every real it gets in funds. Santa Luzia has the highest own-source revenue, i.e. 0.07 for every real, and Assunção the lowest, 0.01 for every real transferred. Therefore, circumstances are not promising.

This database does not list Salgadinho's share in the CFEM (*Compensação Financeira pela Exploração de Recursos Minerais*), meaning financial compensation from mining). In 2015, Juazeirinho's amounted to a paltry BRL 71.34, Picuí BRL 13,744.80 and Santa Luzia got BRL 26,284.64. Data was not provided on the others. These numbers negate any spiel touting mining as a source of widespread, effective development.

Another striking rate is the Performance Indicator for Education Spending in Paraíba (IDGPB), drawn up by the Paraíba State Accounting Court (TCEPB), especially in relation to the Infrastructure Inadequacy

363 Available at: <https://meumunicipio.org.br/indicadores-municipio/2513406-Santa-Luzia-PB?exercicio=2015>, data from the Brazilian Ministry Of Finance – National Treasury Department (STN) and IBGE, data on 2015.

Index³⁶⁴, considering data for 2007 to 2011. In Salgadinho, district of São José da Batalha, where tourmaline is mined, this rate is one of the highest in the state. It ranged from 39% to 33% between 2007 and 2011, which shows the number of schools in poor condition. Juazeirinho ranged between 41% and 42%. Picuí, in turn, from 36% to 33%. Junco do Seridó dropped from 36% to 29%. Assunção ranged between 36% to 35%. Santa Luzia from 30.5% to 30.3%, and Boa Vista ranged between 33% to 32%. These low rates lay bare the need to adopt a public agenda dedicated to improving the cities' education infrastructure.

Chart 2 presents these cities' Gross Domestic Product, that is, the amount of wealth generated by them through their activities.

CHART 2 – Mining cities' GDP

City	
Salgadinho	In 2014, its per capita GDP was BRL 5,757.74. Compared to the other cities in the state, it ranked 217 out of 223. Compared to cities across Brazil, it came in at 5154 out of 5570. In 2015, 97.2% of its budget was funded by outside sources. Compared to the other cities in the state, it placed 37 out of 223 and, when compared to cities across Brazil, it ranked 228 out of 5570.
Junco Do Seridó	Its per capita GDP is currently estimated at BRL 7,854.92, which places it at 4,167 and in the state, 71.

³⁶⁴ Refers to the average rate of variables pointing to the existence of infrastructure problems at schools in the city/microregion/mesoregion and in the school network. The variables considered were: whether a school is in a shared building, whether its location is precarious (shed etc.), water supply, sewer, power, trash collection, rooms for the principal and faculty, IT lab, science lab, library, internet, kitchen, whether meals are served, and whether there are restrooms. Available at: http://idgpb.tce.pb.gov.br/data/notas_tecnicas.pdf

Juazeirinho	In 2014, its per capita GDP was BRL 7,069.88. Compared to the other cities in the state, it ranked 127 out of 223. Compared to cities across Brazil, it came in at 4478 out of 5570. In 2015, 93.9% of its budget was funded by outside sources. Compared to the other cities in the state, it placed 128 out of 223 and, when compared to cities across Brazil, it ranked 1187 out of 5570.
Picuí	In 2014, its per capita GDP was BRL 7,760.49. Compared to the other cities in the state, it ranked 76 out of 223. Compared to cities across Brazil, it came in at 4199 out of 5570. In 2015, 88.3% of its budget was funded by outside sources. Compared to the other cities in the state, it placed 173 out of 223 and, when compared to cities across Brazil, it ranked 2567 out of 5570.
Assunção	In 2014, its per capita GDP was BRL 7,596.12. Compared to the other cities in the state, it ranked 95 out of 223. Compared to cities across Brazil, it came in at 4269 out of 5570. In 2015, 98% of its budget was funded by outside sources. Compared to the other cities in the state, it placed 13 out of 223 and, when compared to cities across Brazil, it ranked 81 out of 5570.
Boa Vista	In 2014, its per capita GDP was BRL 16,200.32. Compared to the other cities in the state, it ranked 8 out of 223. Compared to cities across Brazil, it came in at 2347 out of 5570. In 2015, 89.5% of its budget was funded by outside sources. Compared to the other cities in the state, it placed 164 out of 223 and, when compared to cities across Brazil, it ranked 2296 out of 5570.

Source: IBGE, 2017365

These figures show how economically frail these cities are, and also that the Government fails to come up with regulations capable of fixing, or at least mitigating, these distortions, especially when it comes to transferring advantages in terms of public services to the population. Below, chart 3 presents data on these cities' economic dynamics compared to Paraíba's.

CHART 3 – Mining cities' economic performance

365 Available at: <https://cidades.ibge.gov.br/v4>

City	Economic Dynamics	Per capita GDP	Growth Rate	Individual Participation	Service Participation	Public Service Participation
Paraíba	0.8477	0.8445	0.5704	0.9230	0.9916	0.9090
Salgadinho	0.3245	0.3408	0.4390	0.3185	0.2378	0.2864
Junco d Seridó	0.4710	0.3577	0.6610	0.4053	0.5655	0.3654
Juazeirinho	0.5800	0.3818	0.8982	0.5831	0.6241	0.4129
Picuí	0.4516	0.4040	0.1827	0.5187	0.7242	0.4283
Assunção	0.5209	0.4590	0.9089	0.3793	0.4622	0.3949
Boa Vista	0.8649	0.9985	0.9999	1.0000	0.3266	0.9997
Tenório	0.4262	0.4424	0.7634	0.3300	0.2841	0.3109

Source: PARÁIBA, 2012

Chart 3 further bolsters the assertion that areas with mining potential do not necessarily turn such potential into human development. For instance, the city of Salgadinho, i.e. the seat of tourmaline mining, had the worst economic performance. Also, its per capita GDP was the lowest among these cities. It should be noted as well that these cities' indicators are below those found state-wide. Below, chart 4 shows their quality of life-related numbers.

CHART 4 – Quality of life in mining cities

City	Quality of Life	Child Mortality	Mortality from infectious and parasitic diseases	IDSUS (Public healthcare performance rate)	Proper Sanitation	Murder rate
Paraíba	0.4571	0.4152	0.3764	0.4267	0.8204	0.2467
Salgadinho	0.5653	0.5359	0.4107	0.6220	0.2858	0.9722

Junco Do Seridó	0.5620	0.3676	0.3853	0.6839	0.9646	0.4088
Juazeirinho	0.4743	0.3458	0.3891	0.4390	0.8239	0.3737
Picuí	0.5969	0.4112	0.3526	0.9950	0.9439	0.2818
Assunção	0.5811	0.5566	0.4141	0.8629	0.1000	0.9722
Boa Vista	0.5807	0.4446	0.3633	0.9309	0.1924	0.9722
Tenório	0.4449	0.5816	0.3598	0.8861	0.1011	0.2957

Source: PARAÍBA, 2012

All that raises questions about the relationship between the government and companies, and to what extent their behavior is a source of human rights violation. Chart 4 shows indicators related to quality of life. These figures are not perforce directly related to economic performance given that, as seen from chart 3, these cities' economies are lagging. However, when we look at the numbers related to other aspects, we find that to a certain extent these cities are not the worst but instead even top the rates for the state of Paraíba as a whole. Nevertheless, we should still note the poor coverage of basic sanitation services, a fundamental aspect in most cities, and the high rate of homicides in the tourmaline mining area.

Chart 5 presents the education-related numbers for these cities.

CHART 5 – Schooling rates in mining cities

City	Schooling	K-12 Attendance Rate	ES-JH Attendance Rate	ES-JH Age/Grade Mismatch	Illiteracy Rate	K-12 DI early years	K-12 DI final years
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Paraíba	0.5312	0.4302	0.3771	0.5035	0.8077	0.5747	0.4938
Salgadinho	0.2572	0.1330	0.1468	0.4562	0.3134	0.0000	0.4938
Junco do Seridó	0.4738	0.2663	0.1349	0.7527	0.8092	0.5747	0.3053
Juazeirinho	0.4674	0.2758	0.5452	0.3196	0.5956	0.5747	0.4938
Picuí	0.6624	0.8516	0.3787	0.5915	0.6946	0.6237	0.8345
Assunção	0.7301	0.9471	0.9554	0.4632	0.6009	0.6237	0.7903
Boa Vista	0.7507	0.8444	0.7841	0.5265	0.9931	0.9274	0.4285
Tenório	0.4590	0.8659	0.9583	0.2322	0.4058	0.1702	0.1215

Source: PARÁIBA, 2012

Besides checking the quality of education spending, we need to look at education levels. By so doing, once we look at the data, the figures for the city of Salgadinho are disturbing – its schooling level is the lowest of all, attendance at K-12 grades is low, and the same is true for elementary school to junior high. The rate of students falling behind the official age-for-grade is high in these cities, at nearly 100% in Boa Vista and very low in Tenório. In the case of Boa Vista, there is a discrepancy in that the city’s illiteracy level is high while its IDEB (Portuguese acronym meaning K-12 development index) related to the early years is quite high, well over the state’s. Illiteracy rates are considerably high in these cities. Junco do Seridó, Salgadinho, and Tenório have the lowest IDEBs. Illiteracy rates remain high, and therefore incompatible with the claim that mining drives human development. That is astounding, given that the population at large has no access to the benefits from this activity, which leads us to ask: where is the government?

CHART 6 – Poverty and social equality levels in mining cities

City	Poverty and social equality	Poverty rate	Per capita household income	Ratio 75/25
Paraíba	0.8119	0.9215	0.9882	0.5261

Salgadinho	0.3536	0.2837	0.2616	0.5156
Junco do Seridó	0.5888	0.3857	0.4536	0.9272
Juazeirinho	0.4185	0.3141	0.3747	0.5666
Picuí	0.5755	0.5437	0.6357	0.5471
Assunção	0.6441	0.6249	0.5970	0.7104
Boa Vista	0.8634	0.9106	0.7331	0.9464
Tenório	0.5903	0.4736	0.3802	0.9170

Source: PARAÍBA, 2012

Corroborating the notion that mining cities may not be getting anything from the activity and that putting together a human development agenda is urgent, chart 6 shows that the studied cities are in dire conditions in terms of poverty and equality. The natural result is low human development, and Salgadinho once again stands out as the city with the worst rates of poverty and equality in the state. Boa Vista is the only city whose rates are reasonable.

However, it is important to think about public efficiency based on each city's revenue and how they use it, in that the plans for such use should always focus on human development. Chart 7 presents numbers related to this aspect and considers data such as city revenue, a large portion of which comes from the Municipal Participation Fund (FPM), total per capita income, personnel expenses, which ends up being their Achilles' heel especially because of the spoils system, and investment capability.

City	Public Efficiency	City Revenue	Total per capita income	Personnel expenses	Investment
Paraíba	0.5612	0.9919	0.3051	0.4729	0.4749
Salgadinho	0.4812	0.2357	0.7275	0.4899	0.4719
Junco do Seridó	0.3281	0.2810	0.3094	0.4774	0.2448
Juazeirinho	0.3471	0.4736	0.2320	0.4635	0.2193

Picuí	0.5532	0.7566	0.3658	0.4627	0.6275
Assunção	0.6265	0.3145	0.8274	0.4810	0.8832
Boa Vista	0.5700	0.4789	0.7986	0.4769	0.5256
Tenório	0.4367	0.2485	0.8999	0.4744	0.1239

Source: PARÁIBA, 2012

City income here means the funds they get as their share in the national tax yield, a share that has been getting small by the year. Chart 7 shows these cities' low investment potential and poor public efficiency, a fundamental aspect for ensuring social welfare. It should be noted that nearly 50% of city funds are earmarked for personnel expenses despite the cities' low revenue and low investment capability. The fact is that civil service jobs, usually patronage appointments, are used as barter for votes.

Naturally, these numbers need to be further discussed as they do not necessarily mean that more capital going into the cities would actually improve the quality of management and translate into better education, healthcare, housing, and public services. After all, studies on public management have not proved such a correlation exists. We are not saying that these low indicators derive from the lack of revenue from mining – such revenue might as well be substantial and still fail to foster social progress in the cities. In Paraíba, the most striking fact is that the large amount of resources mined has not meant development for local residents. That is not to say people should not come together to demand that city officials go after the mining companies and tax them, given that such funds are really needed. Another relevant stage is to monitor how these funds are used. A lack of education paired with the absence of other public services may explain why the population seems to tamely accept breaches of the law and other violations of basic human rights, to some extent because they have

resigned themselves to this situation but much more out of an economic dependence and fear.

b) The wreck left by mining companies

The aforementioned data does not show that tourmaline mining companies are systematically monitored by the authorities. Instead, quite the opposite is true. We have found that government agencies fail to properly control not only the mining activity itself but also the work done by miners, even though it is widely known that the mining industry is responsible for the highest number of worker injuries and death in the world.³⁶⁶

In terms of Brazilian laws, we have Decree no. 6270 of November 22, 2007, which promulgated the International Labor Organization's Convention no. 176. This Convention set mining standards and specific procedures needed to protect miners' lives, health, and dignity in these places, which are usually unhealthy, hard to reach, and require special safety measures. Said decree recognizing the ILO convention (BRASIL, 2007) is very clear about the need for employers to adopt technical procedures regarding workers and the workplace as well as to provide miners with protective equipment to prevent accidents, foresee risks, and mitigate them.

Additionally, a 2011 decree introduced Brazil's National Policy on Workplace Health and Safety (PNSST) no. 7622, setting the requirements for a safe workplace that does not endanger workers' lives (BRASIL, 2011). This decree makes it clear that preventing risks, protecting workers' health, and dealing with workplace accidents and post-accident events are issues which are under the purview of several national agencies. In his master's thesis, Rocha (2013) finds that TST (Superior Labor

³⁶⁶ Available at: <http://politike.cartacapital.com.br/mineracao-e-a-maior-responsavel-por-mortes-no-trabalho-ao-redor-do-mundo/>

Court) decisions clearly recognize that miners require special protection and cannot be equated to ordinary workers, considering the former face the tough challenge of working mostly underground, subject to the risks posed by an inhospitable environment.

We should note that a healthy work environment is a fundamental right of miners. For instance, TST and State Labor Courts have decided on different working hours for miners and the other workers, setting the number of six daily hours for the former. (ROCHA, 2013). The Ministry of Labor is an Executive Branch body tasked with monitoring work activities. However, the number of inspections it carries out in the mining industry is bewildering, especially considering the numbers below are official. Making matters worse, the Ministry of Labor reports they have only one workplace health and safety inspector.

Table 1 – Number of inspections carried out in Brazil

Setor Econômico	Ações Fiscais	Trabalhadores Alcançados	Notificações *	Autuações **	Embargos / Interdições	Acidentes Analisados	
Agricultura	3.478	281.958	6.395	4.585	75	51	
Comércio	13.941	921.922	9.083	9.636	289	149	
Construção	12.584	985.133	4.290	24.340	1.570	298	
Educação	1.118	149.127	410	432	5	7	
Hotéis/Restaurantes	2.945	198.921	1.737	1.967	75	23	
Indústria	Ind. Alimentos	2.084	638.376	3.116	4.356	143	111
	Ind. Madeira e Papel	470	56.506	364	892	45	33
	Ind. Metal	2.727	729.094	1.815	4.187	179	115
	Ind. Mineral	1.135	206.781	2.545	2.871	90	54
	Ind. Químicos	1.038	260.478	703	1.559	56	53
	Ind. Têxtil e Couro	932	148.601	308	982	22	16
Indústrias - Outras	763	67.262	701	893	53	20	
Instituições Financeiras	633	1.044.109	282	607	5	3	
Saúde	1.788	548.562	818	2.080	46	11	
Serviços	3.594	1.231.796	1.766	3.156	85	97	
Transporte	3.528	808.304	2.146	3.745	82	90	
Outros	1.738	415.037	619	1.612	57	25	
TOTAL	54.496	8.688.967	37.068	67.600	2.877	1.156	

2016

Source: Ministry of Labor, 2016.

These figures are relevant to the extent they show the lack of mining oversight. However, we realize the Ministry is kept mostly in the dark given this industry hardly ever holds or discloses employment-related records.

The topic studied in this paper is therefore important and justifies the analysis of the negative impacts from mining operations, especially their employment-related legal aspects. To that end, looking at the specific case of the Junco do Seridó-PB area, meetings were held with local authorities and members of the Labor Prosecution Office (MPT), and information collected on site from miners.

Research conducted at the MPT, a body reporting to the Federal Prosecution Office which among other things is tasked with investigating potential breaches in the relationship between companies and workers and monitoring potential human rights violations, provided data about the procedures involving mining companies, specifically those extracting “paraíba tourmaline.”

In 2011, Civil Inquest no. 343 was filed, whose initial text reads as follows:

Considering the alleged violations reported in the records of Preparatory Procedure no. 030696.2010.13.002/1, it is claimed that SÃO JOSÉ DA BATALHA/PB MINING COMPANIES located in the city of Salgadinho-PB, **have operated and/or are operating in breach of labor laws regarding unhealthy workplace, activities, and operations, CIPA – Internal Accident Prevention Committee, and PPE and CPE – Personal and Collective Protective Equipment.** (LABOR PROSECUTION OFFICE, 2011, p. 1)

This investigation by the Paraíba MPT led to the signature of a conduct adjustment agreement (*Termo de Ajustamento de Conduta - TAC*)³⁶⁷ on the right to vacation time and pay but which failed to address the issue of personal protective equipment. Working conditions in the various mines in the area of Seridó in Paraíba are widely known, as are the envi-

³⁶⁷ Case related to PARAÍBA TOURMALINE MINERAÇÃO LTDA - TERMO DE AJUSTE DE CONDUTA no. 00015.2014.

ronmental rights violated, considering mining is a highly invasive activity when it comes to the environment and leaves a trail of destruction. Added to that is the absence, or minimal, control over it by the authorities.

c) Paraiba tourmaline mining in Salgadinho: fake compliance with labor laws to ward off inspectors

In the two compliance evaluations carried out by the MPT and Ministry of Labor and Employment in 2013 in the tourmaline mining area in the District of São José da Batalha (Salgadinho/PB), no relevant infractions were found either in the workplace or in terms of labor law breaches. Not even was a notice of violation issued against Parazul, the company mentioned in the *Sete Chaves* Operation and which was illegally mining paraiba tourmaline in the area. As for Tourmaline Mineração Ltda, another company set up in the city, a notice of labor law violation was issued on vacation-related issues.

One may assume the purpose of this ostensible compliance with labor laws was to evade the attention of governmental control agencies, especially because each company had approximately eight employees (quite a low number). In other words, it was a matter of keeping up appearances of labor law compliance to keep inspectors away from other issues.

On the other hand, the costs involved in complying with labor laws are low when compared to the vast amounts made from selling paraiba tourmaline. In this case, however, after the Federal Prosecution Office applied to have operations shut down, paraiba tourmaline mining activities in the District of São José da Batalha stopped.

d) Kaolin extraction in Junco do Seridó: mining compliance and labor violations

Because tourmaline is a high value-added mineral, the extraction of a few gems (by a small number of workers) is already enough to bring in vast amounts of money. The opposite is true for the kaolin mined in the city of Junco do Seridó/PB. In this case, a large amount of the mineral has been extracted to yield very little in return. Therefore, this is a very low value-added mineral whose mining does not draw the attention of the press or governmental control agencies. As a result, employment-related labor laws are regularly violated.

According to data collected for a Master's thesis under the Graduate Geography Program at Universidade Federal da Paraíba, kaolin is mined in Junco do Seridó by approximately 800 workers, 70% of whom have no formal employment relationship as required by law. The tools they use are rudimentary (handmade), and the miners do not wear personal protective equipment (SILVA, 2011, p. 47).

In Junco do Seridó, there is a Cooperative that does not properly fulfill its role, dependent as it is on local economic forces and under their influence. The lack of transparency in COOPERJUNCO's activities makes it difficult to obtain actual data on them. One of the cooperative's directors told us that COOPERJUNCO has approximately 200 members. However, only 20 (twenty) would actually be active.

The local population's economic dependence is a fact found in these two cities. Be it through the mining of Paraíba tourmaline – before the mines were shut down – or kaolin, the least bit of income workers make is seen as worth the risks involved. This fact is documented by several entities in their report to the Inter-American Commission asking it for a hearing:

The strategy mining companies have found to skirt the population's resentment about the negative impacts from mining is a combination of economic dependence, buying off local

political forces, and coming up with bogus positive impacts from their operations in the area (BAHIA *et al.*, 2016, p. 4).

Ultimately, the local population's economic dependence leads to the existence of employment relations outside the law. Also, there is no collaboration between the authorities and the population, meaning working conditions depend on the interests of those who deal with mining in the area.

Another hurdle the MPT came across when trying to monitor working conditions in Junco is the roaming nature of mining operations in the area: a mine is rapidly dug on a site but soon depleted, and a new mine is excavated nearby. Furthermore, mine owners and workers get a heads-up about soon-to-be carried out inspections and take steps to evade them. That fact, along with the lack of collaboration and complaints by workers, who refuse to provide information even when questioned at public hearings, ties the hands of the MPT, even though this Office could move of its own accord in cases it is allowed to by law.

In the case studied, it should be noted that working conditions in the district of São José da Batalha and in Junco do Seridó are different. Although for the most part kaolin is legally mined in Junco, labor laws are entirely violated. This is something that has been going on for decades and the very miners and companies that beneficiate kaolin take it upon themselves to hinder the government's control efforts. In turn, the situation in the city of Salgado is the opposite. Labor laws are complied with while mining is illegally carried out. Additionally, workplaces are unsafe and there is very little record-keeping. Hence, we believe laws are complied with when company owners are interested in preventing investigations in the area. Also, there is nothing showing they could be spon-

taneously committed to fostering economic and social development for people in the area or the welfare of miners.

4. Analysis 3. the “paraíba tourmaline” case from an environmental standpoint (the federal police sete chaves operation)

In the information filed by the Federal Prosecution Office against the mining companies involved in the “Paraíba Tourmaline” case, the first environmental law violation mentioned was related to the lack of a valid environmental license for the companies’ operations. It should be noted that environmental licenses are the instruments enabling the authorities to control potentially damaging activities.

There are cases in which such damage is, to some extent, inevitable, and mining is one of them. In these cases of actual damage, “the relevant environmental body is tasked merely with trying to further mitigation, compensation, and rehabilitation” regarding the area (FARIAS, 2015, p. 169). In the case studied, there is no mention or proof that the parties involved in tourmaline mining, or the environmental agencies for that matter, have taken steps towards the environmental rehabilitation of the area where the mine was located. Farias & Ataíde (2017, p. 118) highlight that some projects must obtain an environmental license to operate. The authors also note that any and all activities that make use of environmental resources and are considered by licensing agencies to be actually or potentially polluting must go through the administrative environmental licensing procedure.

In this case, the information filed by the Federal Prosecution Office asserts that company Parazul did not hold the required environmental license, which shows the activity carried out there was illegal. Without a license, we may conclude that the authorities had no control over the mining company's operations or monitored the environmental damage that may have been caused there.

Because mining extracts non-renewable natural resources, as a rule this activity is deemed to have a severe impact on the environment. It is non-sustainable as well. However, despite its essentially detrimental effects on the environment, we must keep it mind that mining is important for our industrial society as it provides raw materials used by several sectors of the economy. Therefore, it is viewed as an essential activity for economic development.

Also in that regard, because mining is considered a strategic activity, under the law mining products are equivalent to governmental assets. As a result, these products may only be extracted upon authorization or concession by the government. The effects mining may have on the environment and the socioeconomic influence from the activity essentially depend on how operations have been planned and are to be carried out (MMA, 2001).

In the specific case of Operation "*Sete Chaves*," the Federal Prosecution Office and the Federal Police worked together to investigate the criminal organization and identify the participants and crimes they committed. The other purpose of the investigation was to, in the end, bring back to Brazil the gemstones illegally shipped to other countries.

The investigation only gained momentum in 2013 when inspectors from the National Department for Mining (DNPM), posing as buyers, found several polished paraiba tourmaline stones on display for sale at the International Fair of Precious Gemstones in Teófilo Otoni (MG). While gathering evidence, the Federal Police was visited by an expert on gem-

stones who lives in the US and told them all about how the criminal organization charged with the illegal mining of paraíba tourmaline operated. Based on such information, the Police got to company Parazul Mineração Comércio e Exportação Ltda., tasked by the criminal group with mining the stones in Paraíba.

Among the violations uncovered by the investigations during Operation *Sete Chaves*, the Federal Prosecution Office found that Parazul Mineração held neither a user permit or a mining decree – documents required for prospecting and mining the rough mineral that yields tourmaline. According to information obtained from the National Department for Mining (DNPM), the only document the company had was an expired prospecting permit.

By definition, sustainable development “takes into account the relationship between the economy and ecology. That means any and all industrial activities based on the exploration of non-renewable natural resources will consequently be ‘unsustainable’”. Given it is widely acknowledged that natural resources are finite, their extraction ultimately endangers the existence of such resources in the future. Hence, “there is no way of disregarding the paradox in some attempts at trying to characterize an activity like mining as sustainable when in fact it is based on extracting limited, non-renewable resources from nature” (SCOTTO, 2017, p. 41). That is why the authorities must step in, as they are responsible for protecting and overseeing activities that damage the environment.

Although the investigation carried out by the federal agencies in charge of Operation “*Sete Chaves*” did not look into the government’s responsibility for failing to oversee the activities run by the criminal group identified in the case, we could not but mention such responsibility. The government’s responsibility in cases such as that of “Paraíba Tourmaline” is clear, especially for the lack of valid licenses, authorizations, and concessions for the

companies, as well as for the absence of any inspections throughout the entire time mining was going on in the Paraíba city.

It must be noted that workers were exploited, licenses were expired, gemstones were extracted and taken to other states, armed security was in place at the mines, and still the authorities failed to act in view of such ostensible violations or exercise its law enforcement powers.

Also on the issue of law enforcement, described as administrative oversight by the authorities, Borges (2007, p. 94/95) says that their role of implementing environmental protection policies encompasses their power/duty to take damage preventing and mitigating steps, whether related to governmental projects or those run by the private sector. Therefore, it is safe to say that the authorities must have mechanisms in place to control operations that damage the environment in order to prevent – or mitigate – the harmful effects which some economic activities cause. The law gives the authorities the means to, coercively even, exert control (coercive power inherent to their administrative law enforcement power). Hence, the authorities cannot shirk their duties. The government’s failure to fulfill those duties leads to the need of holding it accountable.

Back to Operation “*Sete Chaves*,” case no. 0000247-03.2015.4.05.8205 prosecuted at the Federal Court of the 5th Region in the state of Paraíba and originating from an information filed by the Federal Prosecution Office, the criminal activities listed in the complaint include theft of raw materials belonging to the government, ore mining without environmental licenses (art. 2 of law no. 8176/91 and art. 55 of Law no. 9605/98), and transnational criminal organization along with the use of firearms (art. 2 paragraphs 2, 3 and 4, V, of Law no. 12850/2013). Aside from the crimes listed in the information, the MPF noted that other similar prosecutions may be brought on other crimes that may have been committed by members of the organization.

Although the information mentions other violations are likely to be found after that prosecution case, the environmental damage is clear in cases such as the one we studied. Still, such damage was not included in the charges. The way work was carried out, the equipment used by the organization to mine the gems, the damage caused to the district of São José da Batalha, the employment relations between miners and the companies involved, or the degradation to the mining area, none of that was brought up. In this case, we find several aspects related to mining activities were not dealt with by the Federal Prosecution Office – at least not along with the first charges. Also the environment, admittedly a vital system for an entire community's life, was initially overlooked and left out for future investigations.

5. Analysis 4. lifting the corporate veil doctrine and its use in environmental matters

The offenders' assets could be seized to ensure the damage caused by their illicit activities is redressed. In this section, we discuss how the Operation *Sete Chaves* case encompasses the procedural strategy of corporate veil lifting and how this approach, in this case meant to reach even silent partners, could aid the investigation secure more successful, effective punishment.

At first, the specific bases of procedural effectiveness in environmental matters should be outlined. It should be mentioned that studies about holding environmental offenders accountable by resorting to the environmental protection system may lead to greater procedural effectiveness in environmental matters. In that regard, Superior Court of Appeals Judge Antônio Herman Benjamin highlights that several unique

mechanisms may be used, such as expanding the roll of defendants, considering the idea of joint and several liability, and the peculiar possibility of corporate veil lifting (BENJAMIN, 1998, p.95).

The “anomalous use of the organization system corresponding to the legal person leading to an undesired outcome” (SILVA, 2002, p. 90) is grounds for disregarding the veil under Brazilian law, according to Osmar Vieira. The fraudulent use of a legal person reveals the material importance of piercing, for certain ends, the corporate veil (REQUIÃO, 1969, p. 14). However, we must keep in mind that this is an exceptional tactic, as Rubens Requião teaches us.

The disregard doctrine was created as a response to the use of corporate entity to defraud creditors, evade an existing obligation, circumvent a statute, or protect crime. Hence, as stated by US professor of law Wormser (1912, p. 517-518), the courts will regard the corporate company as an association of live men and women shareholders, and will do justice between real persons. Therefore, the corporate veil is lifted in a scenario where there is relevant social interest, especially in the event of environmental damage.

Under Brazilian law, there are two types of disregard that may be summed up into two theories. The greater theory requires proof of purpose deviation or commingling of assets (STJ, 2004). On the other hand, the lesser theory applies to consumer and environmental law. In these cases, all it takes for the veil to be lifted is for the legal personhood to be standing in the way of damage redress, according to Law 9605, art. 4.

In terms of the environment, corporate veil lifting honors the polluter pays and full or *in integrum* redress principles (STJ, 2012) and seeks to hold the offenders accountable for all impacts from their damaging conduct until the total and absolute *in natura* rehabilitation of the asset harmed. Regarding the environment, accountability may be seen

as a consequence of the search for the healthy development of human capabilities, the cornerstone in the process of individual freedom and self-determination and, therefore, the architect of the hard core of human dignity (SARLET, 1988, p. 53-74).

a) Launch of operation *sete chaves* and neglect of environmental issues

In the case studied, environmental issues were mostly overlooked. The investigation was restricted to administrative violations in the *paraíba* tourmaline mining process. This is an important matter that must be highlighted, considering Brazil's Constitution requires those who work in the mining industry to rehabilitate a damaged environment (Art. 225, paragraph 2, CRFB/88).

Generally speaking, mining devastates vegetation areas; significantly changes the shape and features of land surfaces; has an immediate visual impact from alterations to the natural landscape; and increases erosion by weakening the soil in the disturbed area. It also leads to landslides, silting, and obstruction of watercourses (BITAR, 1997, p. 9). Additionally, mining causes impacts, changes, or leaks into the surrounding land. For instance, the activity may damage the foundations of homes, buildings, transmission lines, streets, roads, and other structures close to mines.

In the specific case of *paraíba* tourmaline, excavations had to be taken relatively deep, 60 to 80 meters, because this mineral is not found near the surface (BRITO, 2013, p. 43). So, tourmaline mines left deep tunnels in the soil which were not duly reclaimed after the mining was completed.

In addition to the environmental and labor issues discussed here, the criminal organization has international tentacles which, in turn, required an examination of how Brazil behaves internationally with re-

spect to money laundering. Art. 7 of Decree no. 5015/2004 – which ratified the Palermo Convention – requires the adoption of “viable measures to detect and monitor the transnational movement of money and negotiable instruments.” However, the ever-multiplying scams to conceal such movement pose a challenge for control authorities and even compromise the efficacy of corporate veil lifting efforts.

On the other hand, the use of companies Liberty Gems and Js Gems reveals a sophisticated network operating through a chain of offshore companies along the way, such as Azizi Enterprises CO. LTD. and Azizi Gems and Minerals CO. They used asset-shielding schemes and resorted to strawmen. Upon getting back into the country, the money just sneaked past the Federal Revenue Service via transaction structuring (SPINELLI, 2003, p. 15) or smurfing – breaking down the amounts of money coming back to the country after having been laundered. The organization also relied on a spread-out chain of processors taking advantage of tax havens.

b) Grounds for using the disregard doctrine to reach silent partners and Federal Revenue Service regulatory instruction no. 1634/2016

The underhanded tactics used by criminal organizations to shield assets usually succeed at escaping the reach of disregard-based prosecutorial attempts at recouping damages (SHAAN, 2015, p. 50-51). They are often, and the case at hand is no exception, tools that enable money laundering schemes.

To tackle such challenges, it is our position that the corporate veil lifting doctrine should be used to reach the silent partners’ assets to hold companies accountable regarding environmental damage which they

have tried to escape via asset shielding techniques, as in this case. After all, it is a type of disregard that makes it possible to lift the corporate veil in order to find those who actually profit from a company's operations and, therefore, reach the assets of occasional silent partners (2009, p. 132-133). A silent partner's assets could be seized because he/she is the actual controller (FARIAS, 2011, p. 508), even though the company itself does not show the deleterious hallmarks of purpose deviation or commingling of assets, given there is misconduct meant to conceal the intent to commit fraud (TOMAZETTE, 2007, p. 68).

The case at hand contains elements which justify lifting the corporate veil. Gems extracted by an unauthorized company were taken and "laundered" by another company, belonging to the brother of the mining company's owner. They were mixed with the latter company's legally mined stones (whose quality was absolutely inferior and worth much less in the market) and then shipped for polishing, all together, as though they had come from the same mine. Next, they were sorted out and smuggled out of the country, in a process involving international companies, money laundering, and other crimes.

Bringing the discussion to recently-enacted Brazilian law, Federal Revenue Service Regulatory Instruction no. 1634/2016 provides current, efficient mechanisms for detecting evidence of silent partners and identifying them. Despite the already extant requirement for entities domiciled abroad to have holders of rights in Brazil, such as in the case of offshore companies connected to AZIZI, under a registered CNPJ (art. 4, XV), the Instruction innovates by requiring that the registration information provided to get a CNPJ includes (art. 8) "the chain of ownership, up until the natural persons who are the end-beneficiaries" (our highlight).

In turn, end-beneficiaries (art. 8, paragraph 1) are those who "directly or indirectly own, control, or significantly influence the entity" or yet

“the natural persons on behalf of whom a transaction is carried out.” The significant influence mentioned in paragraph 1 refers to someone that “either directly or indirectly holds more than 25% of the entity’s capital,” or that “either directly or indirectly steers company decisions and has the power to elect most of the entity’s directors, albeit without a majority ownership position.”

Brazilian courts have been lifting the corporate veil to reach silent partners as well and hold them liable (TJ/RS, 1999; TJ/RS, 2004; TJ/RJ, 2006). Another ruling was also based on “lifting the corporate veil and extending liability to silent partners so that creditors may reach the assets of any of said silent partners” (TJ/ES, 2015).

The fight against money laundering is the crux of the Palermo Convention and regulations compelling governments to fulfill their commitment of investigating transactions. Money laundering must be looked into as part of a chain of other crimes and violations taking place in the course of the facts, such as environmental damage. Hence, we maintain that a government’s commitment to solving environmental crime has a clear international trait.

Considerations

Upon analyzing the legal, political, anthropological, and social aspects surrounding the Paraíba Tourmaline case, it is safe to say the illegal mining of rare minerals in the area of São José da Batalha – in the city Salgadinho/PB – involved a wide range of human rights violations. For over 20 years, the lack of formal registration of those in charge of the mines allowed them to evade taxes and hindered the authorities’ technical, environmental, and labor control. The criminal organization – which

was dismantled only in 2014 – was set up in such a way as to make the activity seem legitimate and turn the unlawfully mined products “legal.”

Because the quality of the minerals extracted from the mine in the state of Paraíba was higher than the quality of those mined in the neighboring state, the products from the Paraíba mine were sold at lower prices than those they would command in the international market – their main destination. With that, the people responsible for the illegal mining made vast amounts of money while wrecking the environment and failing to reclaim it. They also showed total disregard for the people living in the Paraíba city, upon denying them direct access to economic development by evading taxes that could fund and maintain public equipment and services that would have benefitted all. There were also questionable employment relations with miners, whose safety in the workplace was neglected, among other issues. In short, the offenders operated against the Brazilian mineral ownership system set by the 1988 Constitution, to the detriment of the federal government.

Specifically with respect to the socially undesired impacts from illegal paraiba tourmaline mining, we found that all cities where the activity is intense are plagued by low HDI rates. These cities have to deal with the irregular supply of public services – such as water distribution, harnessing and treatment, and access to electricity –, a feeble healthcare system, and the absence of proper landfills. Incidentally, the area in which these cities are located is based on family farming. Especially regarding the city of Salgadinho/PB, its HDI ranks among the worst in Brazil. This city is extremely dependent on funds provided by the federal government, despite its potential for becoming economically independent by taxing mines and the sale of rare minerals. These cities’ economic frailty is in stark contrast to the high prices commanded by the gems mined in their area, and the nefarious effects from all this are felt directly by the population.

The labor-related legal issues at the mines located in the area of São José da Batalha also reveal a criminal organization engineered to disguise violations of workers' protection laws and, ultimately, keep government inspectors at bay. In Salgadinho/PB, the only notice of violation issued was related to vacation leave and pay. Workplace safety, occupational accidents, or deaths, for instance, were neither looked into or punished. On the other hand, in the city of Junco do Seridó/PB, where mining focuses on low value-added kaolin, the prevailing violations include absolute disregard for employment regulations and indisputable contempt for the workers' human rights.

While analyzing the violations against environmental laws, we found that companies mining paraíba tourmaline in Salgadinho/PB lacked environmental licenses required to do so. However, a painstaking diagnosis of the information filed by the federal prosecution office allowed us to conclude that crimes related to illegal mining, gemstone smuggling, and the setup of the criminal organization were given greater weight by the investigators. Environmental offenses was largely overlooked in the case: there was no mention to how work was done; the material used to extract the mineral; a detailed description of the damage caused to the environment – or its consequences for the local community. There was also no word as to how offenders should make up for/redress the environmental damage they did.

The criminal organization's method of working was based on taking consecutive asset protection steps, i.e. resorting to money laundering techniques. Therefore, we believe such an investigation could benefit from lifting the corporate veil to reach a company's silent partner. That way, by doing away with the limitations to the offending company's liability, the authorities would be able to identify the actual persons prof-

iting from the operations and also seize the silent partners' assets to pay back debts and compensation for environmental damage. In the case analyzed, it was a matter of identifying and supplanting fraudulent intentions within the complex business context investigated because, as noted above, environmental protection depends on making sure those who are to blame for environmental damage are held to account.

In short, this was the case studied by the UFPB team of researchers. They focused on taking the rough research material and scientifically polishing it through the aspects chosen by the group, which among other things encompassed the human right to development, environmental law, labor law, constitutional law, regulatory law, right to property, law and economics, and international law, all of these tinged with the human rights of the populations affected.

References

ANM. Arrecadação da CFEM por substância. DIPAR – Diretoria de Procedimentos Arrecadatórios. Agência Nacional de Mineração, 2018. Available at: <https://sistemas.dnpm.gov.br/arrecadacao/extra/Relatorios/arrecadacao_cfem_substancia.aspx>. Retrieved Apr 29, 2018.

ANSELMO, Márcio Adriano. Lavagem de Dinheiro e Cooperação Jurídica Internacional. São Paulo: Saraiva, 2013.

BAHIA, Alexandre G. M. Franco *et al.* Afetações aos Direitos Humanos devido à Mineração no Brasil. 2016. Available at: <http://www.conectas.org/arquivos/editor/files/informe_audie%CC%82ncia-minerac%CC%A7a%CC%83o%2orevisado.pdf> Retrieved Feb 26, 2018

BARROS, Juliana Neves. *Mineração e Violações de Direitos: O caso da empresa Kinross em Paracatu (MG)*. Justiça Global: Rio de Janeiro, 2017. Available at <<http://www.global.org.br/wp-content/uploads/2017/12/Minera%C3%A7%C3%A3o_e_Viola%C3%A7%C3%A3o_de_Direitos_Paracatu.pdf>>. Retrieved Mar 1, 2018.

BASTIANETTO, Lorena Machado Rogedo; REZENDE, Élcio Nacur. A desconsideração da personalidade jurídica na convoluta sistemática legal da responsabilidade civil: uma abordagem inovadora à luz do Código de Processo Civil de 2015. *Revista de Direito Civil Contemporâneo*-[661].

RDCC (Journal of Contemporary Private Law), v. 11, p. 125-141, 2017.

BENJAMIN, Antonio Herman de Vasconcellos e. Responsabilidade Civil pelo Dano Ambiental. *Revista de Direito Ambiental*. p. 75-141. *RDA* 9/5. jan.-mar./1998.

BITAR, Omar Yazbek. *Avaliação da recuperação de áreas degradadas por mineração na região metropolitana de São Paulo*. 1997. 185f. Tese (Doutorado em Engenharia Mineral). Escola Politécnica da Universidade de São Paulo/SP.

BORGES, Guiomar Theodoro. Responsabilidade do Estado por dano ambiental. *Revista Amazônia Legal de estudos sócio-jurídico-ambientais*. Cuiabá. Ano 1, n. 1, jan/jun 2007, p.94/95.

BRASIL. Constituição Federal de 1988. Promulgated on October 5, 1988. Available at: <<http://www.planalto.gov.br>>. Retrieved Feb 10, 2018.

_____. Decreto nº 5.015, de 12 de março de 2004. Promulgated the UN Convention against Transnational Organized. Available at: http://www.planalto.gov.br/ccivil_03/_ato2004-2006/2004/decreto/d5015.htm>. Retrieved: Feb 10, 2018.

_____. IBGE. O Brasil em síntese. Rio de Janeiro: IBGE, 2017. Available at <https://cidades.ibge.gov.br>.

_____. Instrução normativa da Receita Federal nº 1.634/2016. Regulates the National Register of Juridical Persons (CNPJ). Available at: <<http://normas.receita.fazenda.gov.br>>. Retrieved: Feb 10, 2018.

_____. Instrução Normativa SEFIN Nº 003 de 08 de outubro de 2015 do Município do Rio Branco/AC. Disciplina o rito Do Processo Administrativo De Apuração Das Infrações De Fornecedores – PAAIF e o procedimento para aplicação de sanções administrativas de natureza pecuniária ou restritivas de direitos ao fornecedor, de que trata o Decreto nº 1.127 de 12 de setembro de 2014. Available at: < <http://portalcgm.riobranco.ac.gov.br>> Retrieved: Feb 10, 2018.

_____. **Lei nº 6.938**, de 31 de agosto de 1981. Dispõe sobre a Política Nacional do Meio Ambiente, seus fins e mecanismos de formulação e aplicação, e dá outras providências. Available at: <http://www.planalto.gov.br/ccivil_03/leis/L6938.htm>. Retrieved: Feb 10, 2018.

_____. Presidência da República. Casa Civil. *Decreto nº 6.270, de 22 de novembro de 2007*. Promulga a Convenção nº 176 e a Recomendação nº 183 da Organização Internacional do Trabalho (OIT) sobre Segurança e Saúde nas Minas, adotadas em Genebra, em 22 de junho de 1995, pela 85ª Sessão da Conferência Internacional do Trabalho. Available at: < <http://www2.camara.gov.br/legin/fed/decret/2007/decreto-6270-22-novembro>.>

_____. Presidência da República. Casa Civil. Decreto Nº 7.602, de 7 de novembro de 2011. Dispõe sobre a Política Nacional de Segurança e Saúde no Trabalho - PNSST. Available at: http://www.planalto.gov.br/ccivil_03/_ato2011-2014/2011/decreto/d7602.htm

_____. Superior Tribunal de Justiça. **Recurso Especial nº. 497.447-MT** (2002/0118750-1), rel. orig. Ministro Herman Benjamin. j. 14.08.2012, DJe 09.05.2013. Available at: <<https://ww2.stj.jus.br/processo>>. Retrieved Feb 10, 2018.

_____. Superior Tribunal de Justiça, **REsp nº 279273-SP**, rel. orig. Min. Ari Pargendler, rel. p/ac. Min. Nancy Andrighi, mv., j. 4.12.2003, DJU 29.3.2004. Available at: <<https://ww2.stj.jus.br/processo>>. Retrieved Feb 10, 2018.

_____. Tribunal de Justiça do Rio Grande do Sul. **Apelação Cível nº 70012622171**. Relator: Adão Sérgio do Nascimento Cassiano, 22 nov. 2006. Available at: <www.tjrs.jus.br>. Retrieved: Feb 10, 2018.

_____. TRF4, AG 5027793-49.2015.404.0000, Quarta Turma, Relatora Vivian Josete Pantaleão Caminha, juntado aos autos em 04 set. 2015. Available at: <<http://jurisprudencia.trf4.jus.br>>. Retrieved: Feb 10, 2018.

_____. TJ/SP, 36ª Câmara de Direito Privado. Processo n. 2104873-32.2014.8.26.0000; Relator(a): Maria de Lourdes Lopez Gil, 23 out. 2014. Available at: <www.tjsp.jus.br> Retrieved: Feb 10, 2018.

_____. TJ/ES, Ag. nº 0031391-14.2014.8.08.0024, rel. Des. Amyr Carlos de Souza Filho, 12 de maio de 2015. Available at: <www.tjes.jus.br> Retrieved: Feb 10, 2018.

_____. TJ/RS, Ac. 2ª Câmara Especial Cível, ApCív. 70005749510 – comarca de Tapejara, rel. Desa. Cláudia Maria Hardt, j. 15 abr. 2004 p.1-9; Available at: <www.tjrs.jus.br> Retrieved: Feb 10, 2018.

_____. TJ/RS, ApCív 598586196, 1ª Câmara de Férias Cível, rel. Luiz Felipe Silveira Difini, Julgado em 15 jun. 1999. Available at: <www.tjrs.jus.br> Retrieved Feb 10, 2018.

_____. TJ/RJ - 7ª Câm. Cível; ACi nº 2006.001.04456-RJ, rel. Des. José Geraldo Antonio, j. 28 mar. 2006. Available at: <www.tjrj.jus.br>. Retrieved Feb 10, 2018.

_____. TJ/SC, MS nº. 2013.053581-9, relator: Stanley da Silva Braga, j. 11 jun. 2014; Available at: <<http://app6.tjsc.jus.br>>. Retrieved: Mar 17, 2017.

_____. TJ/GO, 1ª Vara da Fazenda Pública na Comarca de Goiânia/GO, Execução Fiscal, nº: 0453397.80.2007.8.09.0051, juíza de direito Zilmene Gomide da Silva Manzolli, j. 12 set. 2016. Available at: <<http://www.tjgo.jus.br/tjdocs>>. Retrieved: Feb 10, 2018.

_____. TRT/SP, 2ª Vara do Trabalho de Sertãozinho/SP, nº RTO rd-0052000-55.2009.5.15.0054, juiz titular da Vara do Trabalho, René Jean Marcho Filho, j. 07 de maio de 2015. Available at: <<https://dejt.jt.jus.br/dejt/f/n/diariocon>>. Retrieved: Feb 10, 2018.

_____. TJ/RO, 2º Vara Cível da Comarca de Cerejeiras/RO, Ação Civil de Improbidade administrativa, nº 0000246-51.2012.8.22.0013, juíza de direito Roberta Cristina Macedo, j. 10 mar. 2014. Available at: <<https://www.tjro.jus.br/novodiario>>. Retrieved: Feb 10, 2018.

_____. TJ/RJ, 6ª Vara do Trabalho de Nova Iguaçu/RJ, nº RTO rd-0010220-21.2014.5.01.0226, juiz do trabalho Marcelo Ribeiro da Silva, 16 fev. 2017. Available at: <<https://dejt.jt.jus.br/dejt/f/n/diariocon>>. Retrieved: Feb 10, 2018.

_____. TJ/SP, 15º Vara Cível da Comarca de São Paulo/SP, Execução de Título Extrajudicial, nº 1003837-18.2015.8.26.0100, juíza de direito Celina Dietrich Trigueiros Teixeira Pinto, j. 18 ago. 2015. Available at: <<https://www.dje.tjsp.jus.br>>. Retrieved: Feb 10, 2018.

_____. TJ/DF, 23ª Vara Cível de Brasília, nº 2015.01.1.053071-6, Embargos de Terceiro, juiz de Direito Substituto Redivaldo Dias Barbosa, 12 ago. 2015. Available at: <<https://tjdf199.tjdft.jus.br/dje/djeletronico>>. Retrieved: Feb 10, 2018.

BRASILEIRO, Adriana. **Brazilian mines produce world's priciest gems under fire.** 2016. Available at: <<https://www.reuters.com/article/us-brazil-tourmaline-mines/brazilian-mines-produce-worlds-priciest-gems-under-fire-idUSKCN0Z30O5>> Retrieved Oct 30, 2017.

BRITO, Violeta Vieira de. **A Turmalina Paraíba e seus cenários.** 2013. 61f. Monografia (Bacharelado em Geografia). Universidade Federal da Paraíba/PB.

COELHO, F. de S, CROZATTI, J., SILVA, V. C. Para onde vai o dinheiro público? Casos de discrepância entre receita corrente per capita e desenvolvimento municipal no Brasil. Relatório de Pesquisa, USP LESTE, 2015. Available at: <http://each.uspnet.usp.br/imprensa/relatorioreportagem.pdf>.

CONFORTI, Luciana Paula. **A interpretação do conceito de trabalho análogo ao escravo no Brasil:** o trabalho digno sob o prisma da subjetividade e a consciência legal dos trabalhadores. CONPEDI Brasília-DF, em julho/2017, com publicação eletrônica. Available at: <<https://www.anamatra.org.br/files/ConpediFINAL.pdf>> Retrieved Oct 30, 2017.

COMPARATO, Fábio Konder; SALOMÃO FILHO, Calixto. **O poder de controle na sociedade anônima.** Rio de Janeiro: Ed Forense, 2008.

DE SOUZA, Marcelo Gomes. **Direito Minerário e Meio Ambiente.** Belo Horizonte: Del Rey, 1995.

DNPM. **Arrecadação CFEM**. Departamento Nacional de Produção Mineral. Ministério de Minas e Energia. Governo Federal. Available at: <https://sistemas.dnpm.gov.br/arrecadacao/extra/Relatorios/arrecadacao_cfem.aspx>. Retrieved Sep 13, 2017.

FARIAS, Cristiano Chaves. **Direito Civil: Teoria Geral**. 9.ed., Rio de Janeiro: Ed. Lumen Juris, 2011, p. 508.

FARIAS, Talden; ATAÍDE, Pedro Henrique Sousa de. Mineração e Infraestrutura: considerações acerca do licenciamento ambiental. In: SION, Alexandre Oheb (Coord.). **Empreendimentos de infraestrutura e de capital intensivo: desafios jurídicos**. Belo Horizonte: Del Rey, 2017, p. 113/130.

FARIAS, Talden. **A atividade minerária e a obrigação de reparar a área degradada**. RDA, ano 20, vol. 79, jul/set. 2015, p. 157/187.

FEITOSA, Maria Luiza Alencar Mayer. Direito Econômico do Desenvolvimento e Direito Humano ao Desenvolvimento. Limites e Confrontações. In: FEITOSA, Maria Luiza Alencar Mayer *et alii* (org.). **Direitos Humanos de Solidariedade: Avanços e impasses**. Curitiba: Appris, 2013, p. 171-241.

FEITOSA, Maria Luiza Pereira de Alencar Mayer e COSTA NETO, Juvêncio de Almeida. Regime Jurídico do Aproveitamento dos Recursos Minerais. Livro em comemoração aos 30 anos da Constituição Brasileira. No prelo.

FRANCO, Fernanda Cristina de Oliveira; FEITOSA, Maria Luiza P. de Alencar Mayer. Desenvolvimento e direitos humanos. Marcas de inconstitucionalidade no processo Belo Monte. Revista Direito GV, [S.l.], v. 9, n. 1, p. 93-114, jan. 2013. ISSN 2317-6172. Available at:

<<http://bibliotecadigital.fgv.br/ojs/index.php/revdireitogv/article/view/20892/19617>>. Retrieved: Feb 21, 2018.

FRITSCH, Emmanuel, SHIGLEY, James E., ROSSMAN, George R., MERCER, Meredith E., MUHLMEISTER, Sam M., MOON, Mike (1990) Turmalinas Cuprian-Elbaite de Gem-Qualidade de São José Da Batalha, Paraíba, Brasil. In: **Gems & Gemology**, 26 (3). pp. 189-205. ISSN 0016-626X. Available at: <<https://authors.library.caltech.edu/39701/>>. Retrieved Oct 13, 2017.

FURTADO, F., FAUSTINO, C. Mineração e violação de direitos: o projeto Ferro Carajás S11D da Vale S.A. Relatório da Missão de Investigação e Incidência. Açailandia, Available at http://global.org.br/wp-content/uploads/2013/10/relatorio_missao_carajas.pdf.

FURUYA, Masashi. Copper-Bearing Tourmalines from New Deposits in Paraíba State, Brazil. In: **Gems & Gemology**, vol 43, n. 3, 2007. Available at:<<https://www.gia.edu/gems-gemology/fall-2007-copper-bearing-tourmalines-paraiba-brazil-furuya>>. Retrieved Oct 12, 2017.

GAMA, Aliny. **Vice-presidente da Assembleia da PB é suspeito de extração ilegal de pedras preciosas**. Uol. Política, 2015. Available at: <<https://noticias.uol.com.br/politica/ultimas-noticias/2015/05/27/vice-presidente-da-assembleia-da-pb-e-suspeito-de-extracao-de-pedras-preciosas.htm>>. Retrieved Jan 8, 2018.

GUSMÃO, Mônica. **Lições de Direito Empresarial**. 8ª ed., Rio de Janeiro: Editora Lumen Juris, 2009.

JANSEN, Roberta. **Rara turmalina paraíba só é encontrada em cinco minas em todo o planeta, três delas no Brasil**. O Globo. Available at: <<https://oglobo.globo.com/ela/gente/rara-turmalina-paraiba>>

so-encontrada-em-cinco-minas-em-todo-planeta-tres-delas-no-brasil-16953562>. Retrieved Apr 29, 2018.

JUSTICE, Global. **Non-state actors and human rights**. Oxford: Oxford University Press, 2005, p. 221-222.

LAURS, Brendan M., ZWAAN, JC, BREEDING, Christopher M., SIMMONS, William B. (Skip), BEATON, Donna, RIJSDIJK, Kenneth F., BEFI, Riccardo, FAUSTER, Alexander U. Copper-Bearing (Paraíba-Type) Tourmaline from Mozambique. In: **Gems & Gemology**, vol 44, n. 1, 2008. Available at:<<https://www.gia.edu/gems-gemology/spring-2008-copper-bearing-tourmaline-mozambique-laurs>> Retrieved Oct 13, 2017.

MELLO, Alessandra. **Deputado mineiro é investigado por propina de 500 mil dólares**. EM. Política, 2015. Available at: <https://www.em.com.br/app/noticia/politica/2015/12/07/interna_politica,714779/deputado-mineiro-e-investigado-por-propina-de-500-mil-dolares.shtml>. Retrieved Jan 8, 2018.

MILANEZ, B., SANTOS, R. S. P. de, PINTO, R. G. Mineração e violações de direitos humanos: uma abordagem construcionista. In *Homa Publica: Revista Internacional de Direitos Humanos e Empresas*. 1. 130-167, 2016.

MILARÉ, Edis. **Direito do Ambiente**: doutrina, jurisprudência, glossário. 2. Ed. São Paulo: Revista dos Tribunais, 2001.

MINISTÉRIO DO MEIO AMBIENTE. **Manual de Normas e Procedimentos para Licenciamento Ambiental no Setor de Extração Mineral**. Brasília. 2001.

MINISTÉRIO PÚBLICO DO TRABALHO. Inquérito Civil n. 343/2011. Available at: www.prt13.mpt.gov.br.

MPF/PB. Turmalina paraíba: **MPF denuncia 11 pessoas por lavagem de capitais**. Ministério Público Federal na Paraíba. 2015-a. Available at: <<http://www.mpf.mp.br/pb/sala-de-imprensa/noticias-pb/turmalina-paraiba-mpf-denuncia-11-pessoas-por-lavagem-de-capitais>>. Retrieved Apr 29, 2018.

_____. **MPF começou a investigar o tráfico da turmalina Paraíba a partir de denúncias da imprensa**. Ministério Público Federal na Paraíba. Sítio oficial, 2015-b. Available at: <<http://www.prpb.mpf.mp.br/news/1docs/OP7ChavesPressKit.pdf>>. Retrieved Sep 10, 2017.

_____. Denúncia. **Manifestação nº 729/2015-MPF/PRM/PT**, 2015.

MOSCOGLIATO, Marcelo. Exploração de recursos minerais: questão ambiental ou patrimonial? In: **Anais do 4º Congresso Internacional de Direito Ambiental**. São Paulo: IMESP, de 4 a 7 de Julho de 2000.

NERY JÚNIOR, Nelson; ANDRADE NERY, Rosa Maria Barreto Borriello de. O Ministério público e a responsabilidade civil por dano ambiental. **Justitia**, São Paulo, v. 55, n. 161, jan./mar. 1993, p. 62-63. Available at: <<http://www.justitia.com.br/links/edicao.php?ID=161>>. Retrieved Mar 15, 2017.

ONU. **Agenda 2030 para o Desenvolvimento Sustentável**, 2016. Available at: <<http://www.agenda2030.org.br>>. Retrieved: Feb 10, 2018.

_____. **Objetivos de Desenvolvimento do Milênio**, 2000. Available at: <<https://nacoesunidas.org/tema/odm/>>. Retrieved Feb 10, 2018.

PARAÍBA. Diagnóstico Socioeconômico da Paraíba: unidade e diversidade territorial. João Pessoa: Governo do Estado, 2012.

PETERKE, Sven. Os direitos humanos coletivos e a proteção dos direitos fundamentais da humanidade: avanços e impasses. In: **Direitos humanos**

de solidariedade. FEITOSA, Maria Luiza Alencar Mayer, FRANCO, Fernanda Cristina Oliveira, PETERKE, Sven, VENTURA, Victor Alencar Mayer Feitosa (Orgs). Curitiba: Appris, 2013.

PIOVESAN, Flávia. **Direitos humanos e justiça internacional:** um estudo comparativo dos sistemas regionais, europeu, interamericano e africano. 2ª ed. São Paulo: Saraiva, 2011.

PROGRAMA DAS NAÇÕES UNIDAS PARA O DESENVOLVIMENTO. Atlas de Desenvolvimento Humano. Available at <http://atlasbrasil.org.br/2013/>.

REQUIÃO, Rubens. Abuso de direito e Fraude através da personalidade jurídica. **Revista dos tribunais**, ano 58, volume 410, dezembro de 1969.

ROCHA, Maria de Nazaré Medeiros. O Tribunal Superior do Trabalho e o meio ambiente do trabalho: análise qualitativa da jurisprudência relativa ao trabalho em minas. 2013. 425 f. Dissertação (Mestrado) - Universidade Federal do Pará, Instituto de Ciências Jurídicas, Belém, 2013. Programa de Pós-Graduação em Direito.

RODRIGUES, Marcelo Abelha. **Elementos de direito ambiental.** 2. ed. São Paulo: Ed. RT, 2005.

SAADI, Ricardo Andrade, Camila Colares BEZERRA. A Autoridade Central no Exercício Da Cooperação Jurídica Internacional [...] **In: Brasil. Secretaria Nacional de Justiça. Departamento de Recuperação de Ativos e Cooperação Jurídica Internacional. Manual de cooperação jurídica internacional e recuperação de ativos:** cooperação em matéria penal / Secretaria Nacional de Justiça, Departamento de Recuperação de Ativos e Cooperação Jurídica Internacional (DRCI). – 3. ed. Brasília: Ministério da Justiça, 2014.

SARLET, Ingo Wolfgang. **Dignidade da Pessoa Humana e Direitos Fundamentais na Constituição de 1988**, Imprensa: Porto Alegre, Livr. do Advogado, 2007, p. 53-74.

SEONE, José; TADDEI, Emílio; ALGRANATI, Clara. **Mineria Transnacional y resistências Sociales Em Africa y America Latina: Experiências de resistência y e mobilizacion social frente a las estrategias corporativas de las companhias Vale (Brasil) y Anglo Gold Ashanti (Sudáfrica) en Argentina, Colombia, Peru, Angola y Mozambique. Diálogo de los Pueblos y Grupo de Estudios sobre América Latina y el Caribe (Geal). GEAL: 2011. Available at <<file:///C:/Users/ylyira/Downloads/1316466179.DTFLACSO_2011_Taddei.pdf>> Retrieved Feb 27, 2018.**

SCOTTO, Gabriela. Sobre mineração, sustentabilidade e alquimia: algumas reflexões sobre os paradoxos da *mineração sustentável*. **Boletim Petróleo, Royalties e Região**. Campos dos Goytacazes/RJ. Ano XV, nº 58, dez. 2017, p. 40/43.

SHAAN, Gerson Dagord. Tipologias de Blindagem Patrimonial, formas de atuação de “laranjas”, empresas *offshore* e técnica de investigação. **Revista TST**, Brasília, vol. 81, nº4, out/dez 2015.

SILVA, Dilsom Barros da. Aspectos sócio-econômico-ambientais do processo de extração do caulim no município de Junco do Seridó-PB. 101 f. Dissertação (Mestrado em Geografia) – Universidade Federal da Paraíba, João Pessoa, 2011.

SILVA, Osmar Vieira da. **Desconsideração da Personalidade Jurídica: aspectos processuais**. Rio de Janeiro: Renovar, 2002.

SPINELLI, Enory Luiz. **Lavagem de dinheiro: Um problema mundial legislação brasileira.** Rio Grande do Sul: Conselho Regional de Contabilidade do Rio Grande do Sul, 2003.

SVAMPA, Maristela. **Consenso de los commodities, giro ecoterritorialy pensamiento crítico em América Latina.** Consejo Latinoamericano de Ciencias Sociales, Observatorio Social de América Latina (Osal). Año XIII, n. 32, publicación semestral/nov. 2012. Available at: <<http://maristellavampa.net/archivos/ensayo59.pdf>> Retrieved Mar 1, 2018.

SKALWOLD, Elise A., RENFRO, Nathan. Stars are out in Paraíba Tourmaline. *In: Gems & Gemology*, vol. 5, n° 4, 2015. Available at: <<https://www.gia.edu/Gems-Gemology/Winter-2015-Microworld-Stars-Are-Out-Paraiba-Tourmaline>> Retrieved Oct 13, 2017.

TOMAZETTE, Marlon. **Direito Comercial.** 3ª ed., Brasília: Fortium Editora, 2007.

TOURMALINE QUALITY FACTORS. *In: Gems & Gemology.* Available at: <<https://www.gia.edu/tourmaline-quality-factor>> Retrieved Oct 10, 2017.

WORMSER, Maurice. Piercing the Veil of Corporate Entity. 12 Colum. L. Rev. 496 . 1912. p. 517-518. Available at: <<https://www.jstor.org>>. Retrieved: Feb 10, 2018.